VOLUME 3 ABSTRACTS

FINAL PROGRAM AND ABSTRACTS

SATURDAY 23 JUNE 1990
SUNDAY 24 JUNE 1990

SIXTH INTERNATIONAL CONFERENCE ON AIDS

AIDS IN THE NINETIES: FROM SCIENCE TO POLICY

SAN FRANCISCO CALIFORNIA, USA

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ACKNOWLEDGEMENTS

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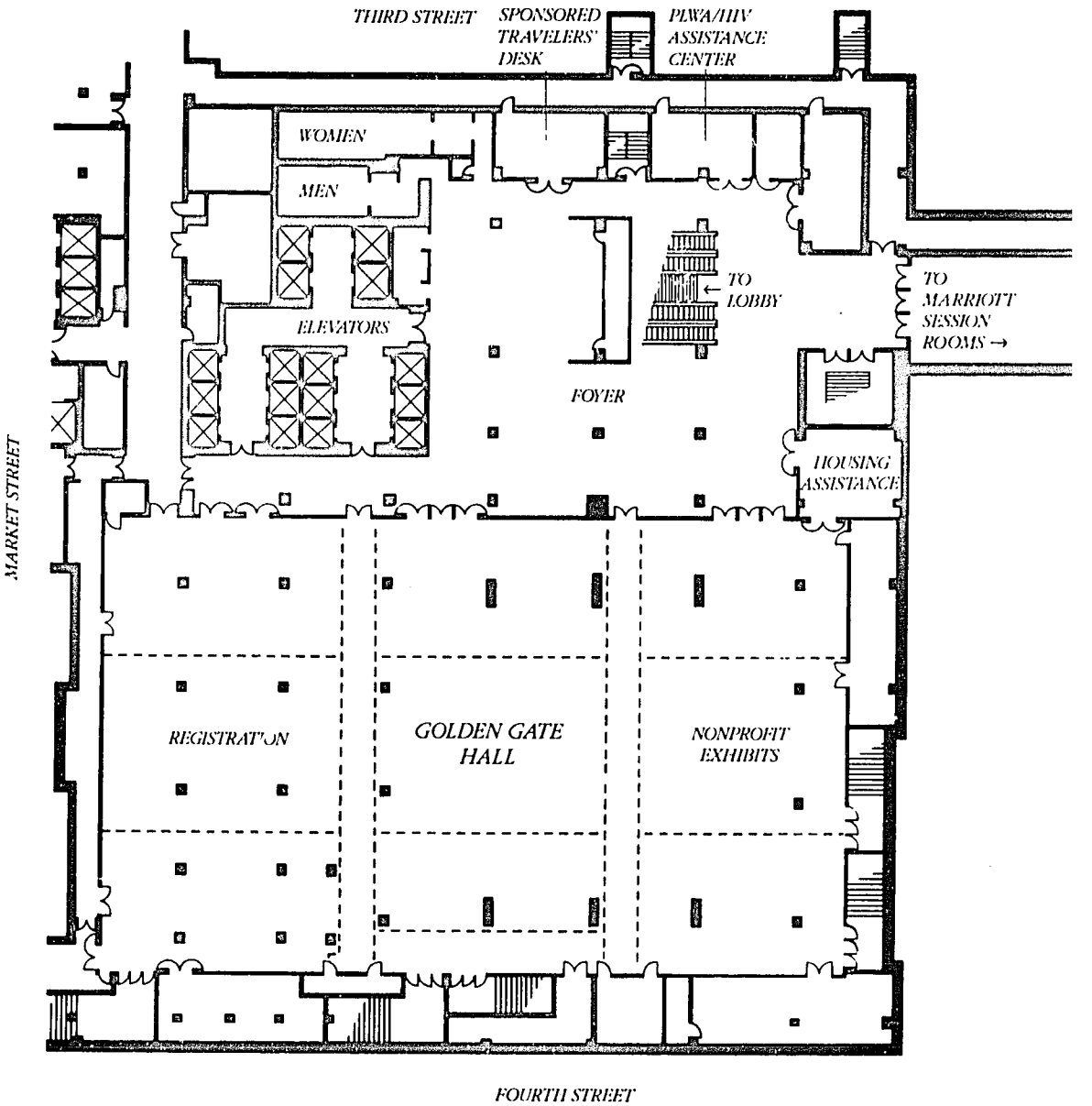
SF MARRIOTT CONFERENCE REGISTRATION AND NONPROFIT EXHIBITS GOLDEN GATE HALL



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LOCATION OF CONFERENCE SERVICES

Abstract Sales	Marriott Golden Gate Hall
Audio Cassette Sales	Marriott Grand Assembly
Broadcast Center	Moscone East Lower Lobby
Business/Photocopying Services	Moscone Lower Lobby
Continuing Medical Education Accreditation	Marriott Golden Gate Hall
Earphones for Simultaneous Interpretation	Moscone East Lower Lobby
Employment Opportunity Center	Marriott Grand Assembly
Exhibits	
Commerical, Large Agencies	Moscone Exhibit Hall
Nonprofit Organizations	Marriott Golden Gate Hall
First Aid	Marriott and Moscone
Foreign Exchange	Marriott Hotel
Housing Desk	Marriott Willow Room
Information Desks	Moscone Main Lobby Marriott Golden Gate Hall and Grand Assembly
Local Tours Desk	Marriott Grand Assembly
Lost and Found	Moscone Lower Lobby Marriott Front Desk
Message Centers	Moscone Main Lobby, Marriott Grand Assembly
Poster Area	Moscone Exhibit Hall
PLWA/HIV Assistance Centers	Moscone West Mezzanine Marriott Redwood Room
Press Center	Moscone East Mezzanine
Reflection and Meditation Center	Marriott Sierra Suite K, 5th floor
Registration Desk	Marriott Golden Gate Hall
Simultaneous Interpretation	Moscone East Lower Lobby
Speakers' Center/Slide Preview	Moscone West Mezzanine

CONFERENCE INFORMATION

ABSTRACTS

The abstract volumes of the Sixth International Conference on AIDS are organized by Conference day, and contain each day's final program and abstracts.

AUDIO CASSETTE SALES

Conference sessions taped in English on audio cassettes will be available for sale in the Marriott Grand Assembly.

BUSINESS AND PHOTOCOPYING SERVICE CENTER

A Business Service Center located in the lower lobby of the Moscone Center will be available to Conference delegates. Costs incurred are the responsibility of users.

CHILD CARE

Most Conference hotels will arrange child care upon request.

CONFERENCE NEWS SERVICES: NEWSPAPER

A daily newspaper, *The AIDS Conference Bulletin*, will provide delegates with a written review of presentations. It will cover a variety of sessions from each thematic track. All program changes will be listed in the daily newspaper, which will be available each morning free of charge.

TELEVISION

A nightly one-hour television program, the "Daily Conference Report," will review various presentations made each day during the Conference. The program will also update Conference activities and include expert analysis of presentations in each programmatic area. The program will air each evening of the Conference at 8 pm, 9 pm, 10 pm, and 11 pm. It can be seen in most Conference hotels on a designated channel for in-room television. It will also be broadcast via satellite to a worldwide audience.

In addition to the "Daily Conference Report," the opening and closing ceremonies as well as all plenary sessions will be broadcast to most Conference hotels. Please inquire upon check-in for availability and times.

CONTINUING MEDICAL EDUCATION UNITS ACCREDITATION

The Continuing Medical Education (C.M.E.) Unit of the University of California San Francisco is fully accredited by the Accreditation Council for Continuing Medical Education (A.C.C.M.E.) of the United States and is authorized by this body to offer programs in continuing medical education.

Extended Programs in Medical Education of the University of California School of Medicine at San Francisco designates the Conference as a continuing medical education activity for 29 credit hours in Category 1 of the Physicians' Recognition Award of the American Medical Association and the Certificate Program of the California Medical Association. Attendance verification forms will be available at the C.M.E. booth located in the Marriott Golden Gate Hall during registration hours. The California Board of Registered Nurses also accepts Category 1 C.M.E. credits.

An administrative fee of $25 (US) applies to all requests for C.M.E. units. Interested parties must report to the C.M.E. Desk in the Marriott Golden Gate Hall.

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EMPLOYMENT OPPORTUNITY CENTER

An Employment Opportunity Center Area is located in the Marriott Grand Assembly. Delegates may feel free to use this area for informal networking for job placement services. A bulletin board is available for notices and flyers relating to jobs, fellowships, and other positions.

EXHIBITS

There are two exhibit areas at the Conference. Exhibits by commercial concerns and large agencies and organizations are located in the Moscone Center Exhibit Hall. Community service and nonprofit organizations are sponsoring exhibit booths in the Marriott Golden Gate Hall. Delegates are encouraged to visit these exhibits and see the latest equipment, products, and publications relating to AIDS and HIV infection, and to learn more about the work of AIDS service organizations and advocacy groups. (See "Conference Exhibitors" List.)

Exhibits will be open during the following hours:

Moscone	Wednesday, 20 June	6:00 pm–8:00 pm
	Thursday, 21 June–Saturday, 23 June	8:00 am–5:00 pm
Marriott (nonprofit)	Wednesday, 20 June–Saturday, 23 June	8:00 am–5:00 pm

FIRST AID

Nursing stations are located in the Marriott Hotel and the Moscone Center. These emergency care facilities are available to all Conference delegates. Their emphasis is on the requirements of HIV-infected persons. In the event of an emergency, please inform a staff member or volunteer.

FOREIGN EXCHANGE AND BANKING FACILITIES

Exchange of foreign currency at prevailing rates is available at San Francisco International Airport, at several banks and money changers within walking distance of the Conference sites, and at the Marriott Hotel. Exchange of foreign currencies can be made at the following locations:

Deak International
100 Grant Avenue (downtown SF), 362-3452
Monday–Friday, 9:00 am–5:00 pm
International Terminal, departure level, San Francisco International Airport, 583-4029, 7:00 am–11:00 pm daily
Foreign Exchange Ltd.
415 Stockton Street (downtown SF), 397-4700
Monday–Friday, 8:30 am–5:00 pm, Saturday, 9:00 am–1:30 pm
Bank of America (near the Marriott Hotel)
One Powell St., 622-4097
Monday–Thursday, 9:00 am–4:00 pm,
Friday, 9:00 am–6:00 pm, Saturday, 10:00 am–2:00 pm

HOUSING DESK

The Conference Housing Desk is located in the Marriott Willow Room. Last-minute housing assistance is available during registration hours. Housing is managed by the San Francisco Convention and Visitors Bureau.

INFORMATION DESKS

Information about the city, restaurants, shopping, houses of worship, public transportation, theaters, and sporting activities are available in the Marriott Golden Gate Hall and Grand Assembly and the main lobby of the Moscone Center.

INSURANCE

The Sixth International Conference on AIDS cannot accept liability for injuries or losses arising from accidents or other situations during or arising from the Conference.

LOST AND FOUND

Available in the Moscone lower lobby and at the Marriott front desk.

MEALS

Meals are not included in the registration fee. Many eating facilities are to be found in and around the Conference sites. Brochures and restaurant listings are available at the Information Desk.

MESSAGE CENTERS

The Conference Message Centers are located in the Moscone Center main lobby and in the Marriott Grand Assembly area. The telephone number for messages for Conference delegates is (415) 978-3560. The Conference's message system is a fully integrated computerized unit that allows messages to be left and retrieved at both venues.

Simply call in or leave your written message at one of the counters and it will be entered into the system. The last name and first initial of the addressee will appear on video screens located in both facilities. For example, messages left at the Marriott can be retrieved at the Moscone Message Center. If a message is left for you, your name will be displayed on all screens in both venues. You will be able to collect printouts of your messages from the message counters in either venue.

NO-SMOKING POLICY

The Conference adheres to a strict no-smoking policy within Conference areas at the Moscone Center and the Marriott Hotel.

PLWA/HIV ASSISTANCE CENTERS

PLWA/HIV Assistance Centers are located in the Moscone Center West Mezzanine and near the Marriott Golden Gate Hall, adjacent to the non-profit exhibits. The centers will be open 8:00 am–6:00 pm. Space is provided to rest, relax, and receive medical care if needed. Videos of plenary sessions of the Conference may be viewed in the Moscone Assistance Center. Volunteers from *New Friends* are helping with information, referrals, and respite care.

POST-CONFERENCE INQUIRIES

Any post-Conference inquiries may be addressed to:

Sixth International Conference on AIDS
University of California San Francisco
Box 1505
San Francisco, CA 94143-1505
USA

POST OFFICE

The closest US post office is located at 150 Sutter St., between Kearny and Montgomery Sts. The hours are Monday–Friday, 8:30 am–5:00 pm.

REFLECTION AND MEDITATION CENTER

This center will be open to all delegates regardless of faith, 21 June to 23 June, 8:00 am–5:00 pm. Located in the Marriott Hotel, 5th Floor, Sierra Suite K, the center is staffed by volunteers from the San Francisco Interreligious Coalition on AIDS.

SECURITY

The Conference takes seriously its goal of ensuring the exchange of information so vital to the control of the AIDS epidemic. Just as the Conference has been outraged by the threat to this critical exchange of information posed by travel restrictions on HIV-infected persons, the organizers are committed to preventing any threat to the free exchange of information resulting from disruption of its sessions.

The organizers of the Sixth International Conference on AIDS have worked diligently to ensure access for all those involved in the global effort to control AIDS, and through its program to give expression to the spectrum of social and political concerns of *all* its delegates. Additionally, the Conference has worked closely with local law enforcement agencies to ensure that all groups wishing to demonstrate their political views will be able to do so freely on public property beyond the walls of the Conference.

Security is in place at the Conference to assure uninterrupted access to information for all delegates in all sessions. The Conference will not tolerate disruptions intended to impede or prevent the flow of information to Conference delegates. Conference security will exercise all available remedies to ensure the orderly conduct of the proceedings, including ejection of disruptive delegates from Conference sites and confiscation of Conference badges. Violation of local laws will subject offenders to arrest and prosecution.

SERVICES FOR PERSONS WITH DISABILITIES

Efforts will be made to accommodate the special needs of persons with disabilities. Conference sites are fully accessible, and access information is available on-site regarding transportation, public facilities, and restaurants in the area. Signed interpreters' services are provided for the opening, closing, and plenary sessions. Special seating near the stage has been made available for individuals with visual, auditory, and mobility impairments. Some Conference materials are available in Braille.

A Disabled/Special Needs booth will be open during registration hours to provide assistance to persons with disabilities. It has a listing of community resources, as well as site maps, Braille materials, and volunteer guide services.

SIMULTANEOUS INTERPRETATION

The official language of the Conference is English. Simultaneous interpretation of the opening and closing ceremonies and plenary sessions is provided from English to French and to Spanish, courtesy of the World Health Organization. Earphones for simultaneous interpretation are available at the Moscone Center east lower lobby.

TELEPHONES

Public telephones are located throughout the Moscone Center and the Marriott Hotel. To make a local call, deposit 20 cents and dial number. Approved telephone credit cards may also be used to charge calls. Some important phone numbers are:

Emergency: Dial 911 to get immediate help in any emergency situation
Operator: Dial 0
General Information: Dial 411

Area Code: Unless otherwise noted, all phone listings are within the 415 area

Telephone Resources:
Alcoholics Anonymous: 661-1828
Ambulance: 931-3900
The Better Business Bureau of San Francisco: 243-9999
California Road Conditions: 557-3755
California State Automobile Association (AAA): 565-2012
Fire Department: Dial 911
Narcotics Anonymous: 621-8600
Poison Control Center: 476-6600
Police: Dial 911 (emergencies only)
PWA Switchboard: 861-7309
San Francisco AIDS Foundation Hotline: 863-2437
San Francisco Bar Association Lawyer Referral: 764-1616
San Francisco Dental Society: 421-1435
San Francisco General Hospital: 842-8111 (emergencies only)
San Francisco Medical Society: 567-6230
Senior Citizens' Information: 626-1033
Shanti Project–PWA Services: 777-2273
Suicide Prevention: 221-1424
Travelers Aid Society: 255-2252

TRANSPORTATION

Local

From Hotels to Conference Site

Shuttle service is provided from key boarding points at or near all Conference hotels to the Marriott Hotel and Moscone Center. Service begins on Wednesday, 20 June, and continues through the afternoon on Sunday, 24 June. Check at the front desk of your hotel for service times and boarding points.

Return service is available until 6:00 pm each day.

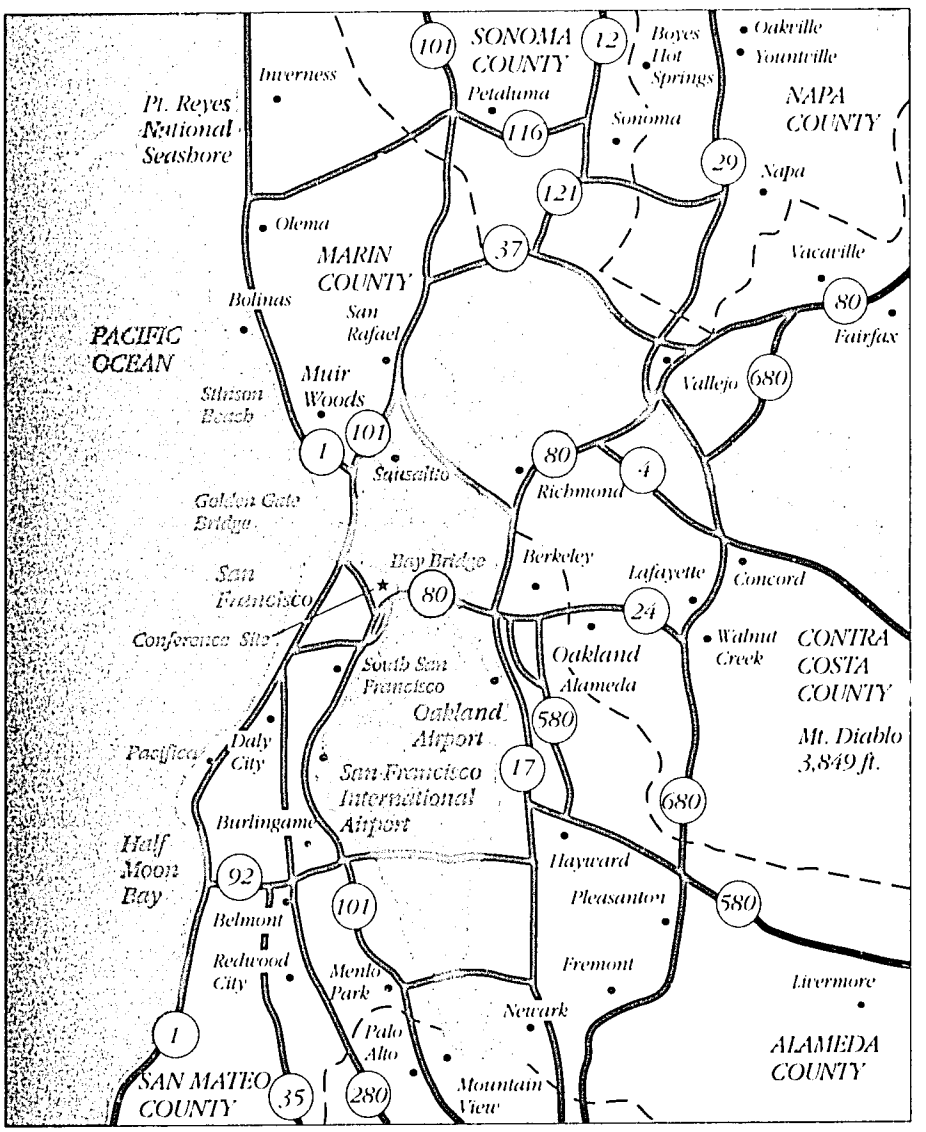
From UC Berkeley to Conference Site

Individuals staying in Berkeley may use the fast and inexpensive Bay Area Rapid Transit (BART) trains from the East Bay. The university residence hall is within walking distance of the downtown Berkeley BART station. Transportation time to the Conference is 25 minutes and costs $1.80 each way. It is a short walk from the Powell Station to the Conference sites. Tickets are available at the BART station using US currency only. No credit cards or travelers check are accepted at the stations. For detailed information about which lines to use, call BART at 788-2278.

Within San Francisco

In addition to the Conference's hotel shuttle service, the San Francisco Municipal Railway system (including cable cars) provides extensive

BAY AREA



access to all of San Francisco. Standard fare is 85 cents per trip with two transfers allowed.

For more information about public transportation in San Francisco, contact San Francisco Municipal Railway, 673-6864.

To Other Bay Area Destinations

Rail Service to the East Bay (e.g., Oakland, Berkeley):
Bay Area Rapid Transit (BART), 788-2278.

Bus Service to the East Bay:
AC Transit, Transbay Terminal, First and Mission Streets, 839-2882.

Service to Marin County (and access to points north):
Golden Gate Transit, Transbay Terminal, First and Mission Streets, 332-6600.
Service to San Mateo County (and access to points south):
Samtrans, Transbay Terminal, First and Mission Streets, 761-7000.

Ferry Service:
Golden Gate Ferries, Ferry Building, bottom of Market Street, 332-6600.

Red and White Fleet, Pier 41, Fisherman's Wharf, 546-2896 or 800-445-8880 within California.

TRAVEL AND TOURIST INFORMATION

CREDIT CARDS

Major credit cards (VISA, MasterCard, Diners' Club, American Express) are honored in all hotels as well as in most restaurants and stores. Additional identification may be required. Any official document bearing your name and photograph will usually suffice.

DRIVING AND TRAFFIC REGULATIONS

Curbing Wheels: It is the law in San Francisco that on hills you must park your car with wheels curbed. Turn the tires toward the street when facing uphill, and toward the curb when facing downhill, to use the curb as an effective block.

Curb Colors: Colored curbings indicate reserved parking zones. *Red*: no stopping or parking. *Yellow and Black*: (open to all on Sunday) half-hour loading limit for trucks with *commercial* plates only. *Blue*: reserved for vehicles marked with a California-issued *disabled* placard or plate. *Green*: ten-minute limit for all vehicles. *White*: five-minute limit, effective during the adjacent business' hours of operation.

Towaway Zones: The San Francisco Police Department is strict about parking regulations. Any improper parking spot can become a towaway zone. Do not park in bus stops or near fire hydrants. Obey street cleaning signs and signs that indicate parking lanes opened for traffic. A violation may cost up to $20, plus $100 for towing and storage fees each day. To reclaim your towed car, you must get a release from the nearest district police department, and pay cash in US dollars, then pick up the car at the towing company.

LOCAL TOURS DESK

You may wish to take advantage of special rates for tours available through the official Conference travel agent, *Ask Mr. Foster.*

The *Ask Mr. Foster* tour desk in the Marriott Hotel can provide information on the many sightseeing, sports, and recreational activities offered in and around the city, including museum and winery tours, golf, jogging, tennis, bicycling, hiking.

SHOPPING

San Francisco is known for its many shopping opportunities. You may inquire about shopping at your hotel or at the Information Desks at the Conference.

TIPPING

It is customary to add a 15% gratuity for services in restaurants and taxicabs, and to offer a small gratuity to bellmen and chambermaids in hotels.

VISITING SAN FRANCISCO AIDS AGENCIES

Many delegates will be interested in learning about San Francisco's many AIDS service agencies. Many of these agencies are represented in the nonprofit exhibit area in the Marriott Golden Gate Hall. Delegates and media representatives may sign up for a limited program of site visits to these agencies at the AIDS Agency Site Visit table in the nonprofit exhibit area.

VISITOR GUIDES

The *San Francisco Visitors' Guide* and *Key This Week San Francisco* is available at the Information Desks.

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ASK MR. FOSTER LOCAL TOURS

Ask Mr. Foster Travel Service Local Tours is located in the Marriott Hotel Grand Assembly. Reservations for tours and more information may be requested there.

SIGHTS OF SAN FRANCISCO

TIME: Wednesday, 20 June, 11:30am–3:30pm
Thursday & Friday, 21 & 22 June, 9:00am–1:00pm and 1:00pm–4:30pm
PRICE: $22.00 Tour will operate with a minimum of 30 participants

Come along as you explore this world famous cosmopolitan city. Learn what makes San Francisco unique. You travel through the many and varied ethnic communities—from the Spanish settlements in the Mission to Chinatown, one of the largest Asian communities outside of the Orient. View the luxury of Nob Hill, through the financial district before continuing to the serene beauty of Golden Gate Park, a 1000 acre man made wonderland of trees, flowers, lakes and beautiful meadows.

MAGNIFICENT MONTEREY

TIME: Thursday, 21 June, 8:00am–6:00pm (10 hours)
PRICE: $62.00 Tour will operate with a minimum of 30 participants

Enjoy a relaxing ride in your motorcoach through California's lush coastal mountains en-route to Santa Cruz and Monterey. Your drive takes you along the rugged Pacific with its white sandy beaches, pounding surf and on into Monterey. Enjoy a leisurely stroll through quaint seaside Monterey, with time for lunch on your own at one of the area's varied oceanfront restaurants.

The wonders of a hidden world will be yours at the internationally acclaimed Monterey Bay Aquarium. Nearly one hundred innovation habitat galleries and exhibits plunge you into Monterey Bay. You will be eye-to-eye with more than 6000 strange and colorful creatures that call Monterey Bay home, from playful sea otters to menacing sharks, elusive octopus and fierce wolf-eels.

Experiencing this magical mystery of the sea is the perfect ending to a glorious day before your scenic return to San Francisco.

SAUSALITO— "THE RIVIERA BY THE BAY"

TIME: Thursday & Friday, 21 & 22 June, 1:30pm–5:30pm
PRICE: $28.00 Tour will operate with a minimum of 30 participants

Drive over the Golden Gate Bridge to Sausalito, where the Mediterranean ambiance beckons you to this old fishing village and quaint artist's colony. Perched on the edge of San Francisco Bay, Sausalito is famous for its waterside shops and unique houses. Walking around this quaint town, you will encounter many small specialty shops and galleries housed in refurbished, colorfully painted buildings.

After exploring Sausalito, your return to San Francisco will be aboard a ferry which provides magnificent views of the City's skyline, the Golden Gate Bridge and Alcatraz.

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FILOLI HOUSE AND GARDENS AND THE ALLIED ARTS GUILD

TIME: Friday, 22 June, 8:30am–3:00pm
PRICE: $54.00 Tour will operate with a minimum of 30 participants

Filoli, a 728 acre country estate was built in 1916. The house is an outstanding example of country house architecture in the U.S.A., and is one of the few in California that remains intact in its original setting.

The second portion of the day is spent at the Allied Arts Guild. The Guild stands on a small portion of land, that in the early 1800's was part of the vast Rancho de las Pulgas. Enjoy a leisurely stroll through the Guild's charming gardens. Handcrafted gifts, pottery and candle shops, gourmet cookware and custom jewelry design are just a few of the varied traditional crafts you will enjoy amidst a traditional colonial Spanish design. Lunch on your own.

WINES & VINES

TIME: Saturday, 23 June, 8:30am–4:30pm (8 hours)
PRICE: $56.00 Tour will operate with a minimum of 30 participants

Your deluxe motorcoach will travel over the brilliant waters of San Francisco, Bay, through the lush rolling hills to the world renowned California Wine Country. The lure of the land is its temptation to all the senses, particularly taste and smell. The plants strippling the picturesque fields are grapes, and the product is wine—fine vintage which rival even those of France.

Whether you are a connoisseur of the grape or an enthusiastic beginner, this wine tour offers you the opportunity to increase your knowledge and enjoyment of wine, and acquaint you with some of the finest wineries in the world.

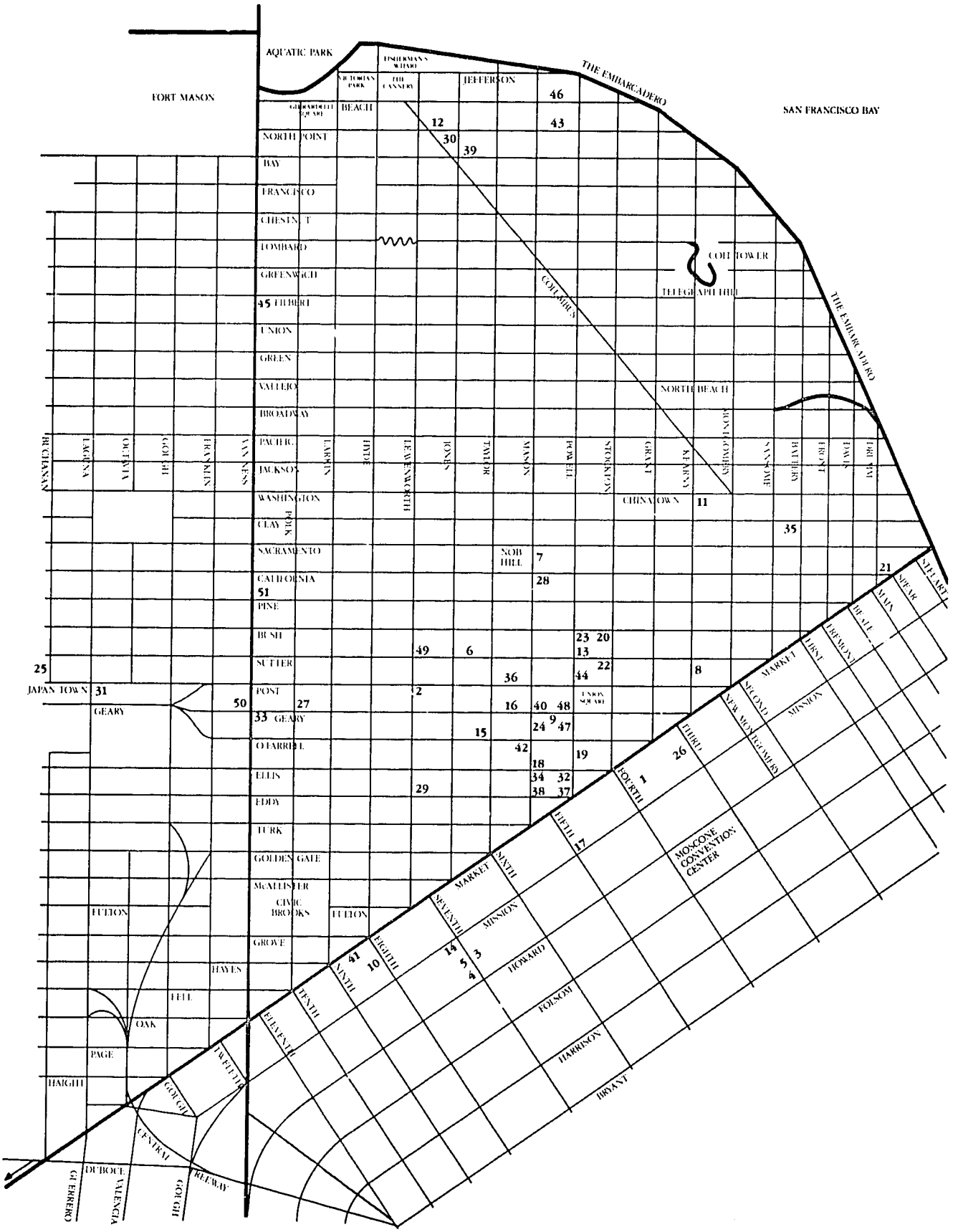
A midday stop at one of California's wine country villages will give you time to sample one of the interesting restaurants for lunch on your own.

TWILIGHT ON THE BAY

TIME: Saturday, 23 June, 7:00pm–10:00pm June 23
PRICE: $92.00 Tour will operate with a minimum of 75 participants. Price includes: Transportation to/from boat, open bar, buffet dinner, gratuities, taxes & deejay.

Depart your pick up point for the short drive to the pier, where you board a privately chartered vessel. An exciting evening awaits you as you set sail for a 3-hour party cruise. Enjoy sunset on the water and watch the evening skyline light up as you sail under the Bay Bridge. Relax in a casual atmosphere while you sip beverages of your choice and feast on a tasty buffet. Bring a jacket to stroll the deck or kick off your shoes and cut loose to the deejay's lively music. At the end of the evening you will have experienced the perfect way to see the "City by the Bay."

CONFERENCE HOUSING



CONFERENCE HOTELS IN SAN FRANCISCO

The San Francisco Marriott, located next to the Moscone Convention Center, is the official headquarters hotel of the Sixth International Conference on AIDS.

Listed below are hotels offering special rates to Conference delegates. Transportation to and from the Conference site will be available.

Map Key	*Hotel*	*Address*	*Phone*
1	San Francisco Marriott (Headquarters Hotel)	777 Market Street, San Francisco	896-1600
2	Bedford Hotel	761 Post Street, San Francisco	673-6040
3	Best Western Americania	121 Seventh Street, San Francisco	626-0200
4	Best Western Carriage Inn	140 Seventh Street, San Francisco	552-8600
5	Best Western Flamingo Motor Inn	114 Seventh Street, San Francisco	621-0701
6	Canterbury Hotel	750 Sutter Street, San Francisco	474-6464
7	Fairmont Hotel	Atop Nob Hill, San Francisco	772-5000
8	Galleria Park	191 Sutter Street, San Francisco	781-3060
9	Handlery Union Square	351 Geary Street, San Francisco	781-7800
10	Holiday Inn–Civic Center	50 Eighth Street, San Francisco	626-6103
11	Holiday Inn–Financial District	750 Kearny Street, San Francisco	433-6600
12	Holiday Inn–Fisherman's Wharf	1300 Columbus Ave., San Francisco	771-9000
13	Holiday Inn–Union Square	480 Sutter Street, San Francisco	398-8900
14	Hotel Britton	121 Seventh Street, San Francisco	621-7001
15	Hotel Californian	405 Taylor Street, San Francisco	885-2500
16	Hotel Diva	440 Geary Street, San Francisco	885-0200
17	Pickwick Hotel	85 Fifth Street, San Francisco	421-7500
18	Hotel Nikko	222 Mason Street, San Francisco	394-1111
19	Hotel Union Square	114 Powell Street, San Francisco	397-3000
20	Hotel Vintage Court	650 Bush Street, San Francisco	392-4666
21	Hyatt Regency–Embarcadero	5 Embarcadero Center, San Francisco	788-1234
22	Grand Hyatt	345 Stockton Street, San Francisco	398-1234
23	Juliana Hotel	590 Bush Street, San Francisco	392-2540
24	King George Hotel	334 Mason Street, San Francisco	781-5050
25	Kyoto Inn	1800 Sutter, San Francisco	921-4000
26	Le Meridien	50 Third Street, San Francisco	974-6400
27	Lombard Hotel	1015 Geary, San Francisco	673-5232
28	Mark Hopkins Inter-Continental	Number One Nob Hill, San Francisco	392-3434
29	Atherton	685 Ellis Street, San Francisco	474-5720
30	Marriott–Fisherman's Wharf	1250 Columbus Ave., San Francisco	775-7555
31	Miyako Hotel	1625 Post Street, San Francisco	922-3200
32	Monticello Hotel	80 Cyril Magnin Street, San Francisco	392-8800
33	Hotel Richelieu	1050 Van Ness Ave., San Francisco	673-4711
34	Parc Fifty-Five	55 Cyril Magnin Street, San Francisco	392-8000
35	Park Hyatt	333 Battery Street, San Francisco	392-1234
36	Portman	500 Post Street, San Francisco	771-8600
37	Powell Hotel	28 Cyril Magnin Street, San Francisco	398-3200
38	Powell West Hotel	111 Mason Street, San Francisco	771-7185
39	Ramada Fisherman's Wharf	590 Bay Street, San Francisco	885-4700
40	Raphael	386 Geary Street, San Francisco	986-2000
41	San Franciscan Hotel	1231 Market Street, San Francisco	626-8000
42	San Francisco Hilton and Towers	333 O'Farrell Street, San Francisco	771-1400
43	Sheraton at Fisherman's Wharf	2500 Mason Street, San Francisco	362-5500
44	Sir Francis Drake	450 Powell Street, San Francisco	392-7755
45	Vagabond Inn	2550 Van Ness Ave., San Francisco	776-7500
46	Travelodge at Fisherman's Wharf	250 Beach Street, San Francisco	392-6700
47	Villa Florence	225 Powell Street, San Francisco	397-7700
48	Westin St. Francis	335 Powell Street, San Francisco	397-7000
49	York Hotel	940 Sutter Street, San Francisco	885-6800
50	Cathedral Hill Hotel	1101 Van Ness Ave., San Francisco	776-8200
51	Holiday Inn Golden Gateway	1500 Van Ness Ave., San Francisco	441-4000
	University of California, Berkeley	2400 Durant Ave., Berkeley	642-5925

CONFERENCE EXHIBITORS

See Volume I for descriptions of all exhibits

COMMERCIAL EXHIBITORS MOSCONE CONVENTION HALL

Abbott Laboratories Booths 430, 432, 434, 436, 438
Alza Corporation Booth 532
American Bio-Technologies, Inc. Booth 725
American Foundation for AIDS Research (AmFAR) Booths 301, 303, 305
American Medical Association Booth 201
American Progressive Products Corporation Booth 127
American Red Cross Booth 632
Angewandte Computer Software GmbH Booth 311
Applied bioTechnology, Inc. Booth 839
Australian Department of Community Services & Health Booth 101
Becton Dickinson Immunocytometry Systems Booths 233, 235
Bio-Rad Laboratories Booth 212
Bioject Inc. Booth 135
Biotech Research Laboratories, Inc. Booth 631
Boston Biomedica, Inc. Booth 129
Calypte Biomedical Corporation Booth 113
Cambridge BioScience Corporation Booth 105
Caremark Inc. Booths 307, 309
CarePlus, Inc. Booth 732
Carter-Wallace Inc. Booths 638, 640
Channing L. Bete Company, Inc. Booth 240
Clinical Homecare/NMSA Booth 636
Clinical Laboratory International Booth 529
Clonatec—BioSoft Booth 231
Colortrieve Record Systems, Inc. Booth 738
Coulter Booths 119, 121, 123
Curaflex Infusion Services, Inc. Booth 635
Current Science Booth 629
Department of Veterans Affairs Booth 533
DeVilbiss Health Care, Inc. Booth 204
Disease Detection International, Inc. Booth 229
Du Pont Company Booths 226, 228, 325, 327
Elsevier Science Publishers-Excerpta Medica Booth 230
Federal Republic of Germany Booths 729, 731, 733
Federal Ministry of Research and Technology
Federal Ministry of Youth, Family Affairs, Women and Health
German Federal Ministry for Economic Cooperation
Fisons Pharmaceuticals Booth 329
Fujirebio America, Inc. Booths 116, 118, 215, 217
Gen-Probe Incorporated Booth 531
Genetic Systems Booths 540, 639
Health Care Financing Administration Booths 534, 536
HMSS, Inc. Booth 238
Hoffmann-La Roche Inc. Booths 526, 528, 625, 627
Homedco Infusion Booth 537
IAF BioChem International, Inc. Booth 740
IIT Research Institute Booth 114
Immunodiagnostic/Laboratories Booth 237
IMRÉ Corporation Booth 232
Innogenetics N.V. Booths 331, 333
Intravenous Home Care Booth 633
J.H. Emerson Company Booth 339
Labsystems Oy Booth 730
London International Group plc Booths 214, 216, 218, 313, 315, 317
Lyphomed, Inc. Booths 426, 428, 525, 527
M.D. Personal Products, Inc. Booth 535
Marcel Dekker, Inc. Booth 835
Marquest Medical Products, Inc. Booth 837
Mary Ann Liebert Inc. Booth 335
Maryland Medical Laboratory Inc. Booth 109
Medical Interviews Booth 236
Medical Publishing Group (The) Booths 440, 539
Medicorp, Inc. Booth 530
MediGenics, Inc. Booth 133
Menlo Care, Inc. Booth 634
Merieux Institute, Inc. Booth 826
MicroGeneSys, Inc. Booth 103
Multiple Peptide Systems, Inc. Booth 727
Murex Corporation Booths 737, 739
Nature Publishing Booth 206
Neosystem Laboratoire Booth 735
New England Critical Care Integrated Care Systems Booths 108, 110
North American Biologicals, Inc. Booth 207
Norwich Eaton Pharmaceuticals, Inc. Booth 205

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Okamoto U.S.A., Inc. Booths 831, 833
Olympus Corporation Booths 115, 117
Organon Teknika N.V. Booths 726, 728, 825, 827
Ortho Diagnostic Systems Inc. Booths 126, 128, 225, 227
Perkin-Elmer Cetus Booth 125
Pharmacia Diagnostics Inc. Booths 102, 104, 106
Preferred Rx, Inc. Booth 131
Proctor & Gamble Booth 337
Raven Press Booth 829
Repligen Corporation Booth 239
Roerig Booth 134, 136, 138, 140
Ross Laboratories Booth 203
Ryan Medical, Inc. Booth 734
Sandoz Pharmaceuticals Booths 208, 210
Schering Corporation Booths 628, 630
Scientific, Medical Publications of France (S.M.P.F. Inc) Booth 213
Serologicals, Inc. Booth 111
Syntex Laboratories, Inc. Booth 209
Synthetic Genetics Booth 202
Syva Company Booth 211
TSI Mason Research Institute Booth 112
U.S. Public Health Service Booths 308–318; 407–418; 511–518; 613–617
Agency for Health Care Policy and Research
AIDS Clinical Trials Information Service
Alcohol, Drug Abuse and Mental Health Administration
Centers for Disease Control
Health Resources and Services Administration
National AIDS Information and Education Program
National AIDS Program Office
National Institutes of Health
Office of Minority Health
U.S. Food and Drug Administration
V-Tech Booth 736
Wellcome Booths 326–340; 425–439
Wyeth-Ayerst Laboratories Booth 107

NONPROFIT EXHIBITORS GOLDEN GATE HALL MARRIOTT HOTEL

18th Street Services Table 2006
AAPHR—American Association of Physicians for Human Rights Booth 1054
Academy for Educational Development Booth 1059
ActionAIDS Table 2039
ACT UP: AIDS Coalition to Unleash Power Booth 1014
Agency for Health Care Policy and Research (AHCPR) Table 2057
AIDS Action Network Table 2058
AIDS Benefits Counselors Table 3002
AIDS Education for the Deaf Booth 1039
AIDS Education for Youth Booth 1045
AIDS Indigent Direct Services Booth 1048
AIDS Interfaith Council of Southern California Table 2053
AIDS National Interfaith Network Booth 1049
AIDS Policy Center of the Intergovernmental Health Policy Project Booth 1077
AIDS Project of the ACLU Booth 1063
AIDS Service Providers Association of the Bay Area Booth 1061
AIDS/ARC Interest Group Booth 1089
AIDS/ARC Vigil Booth 1083
Allcare, Inc. Table 3005
American Buddhist Congregation, Inc. Metta Vihara Monastary Booth 1048
American College Health Association Table 2037
American Indian AIDS Institute Booth 1046
American Preferred Plan Table 3012
American Psychiatric Association Booth 1053
American Red Cross Booth 1056
American Foundation for AIDS Research (AmFAR) Booth 1019
An Ark of Love, Inc. Table 2027
Articulations Table 1100
Asian AIDS Project Booth 1022
Asian Pacific AIDS Coalition Booth 1041
Associazione Nazionale Per La Lotta Contro L'AIDS Booth 1092
Association of Asian/Pacific Community Health Organizations Booth 1070
Association of Nurses in AIDS Care Booth 1052
Association of Regional Center Agencies Booth 1072
A.W.A.R.E.—Association for Women's AIDS Research and Education Table 1096
BAPHR—Bay Area Physicians for Human Rights Booth 1054
Bayview Hunter's Point Foundation/ City Clinic Booth 1024
Birmingham AIDS Outreach Table 2009
Body Positive Booth 1040
Brooklyn AIDS Task Force Booth 1082
California Nurses Association Booth 1089
California Prostitutes Education Project (CAL-PEP) Table 2056
Carl Vogel Foundation, Inc. Booth 1043
Catholic Charities/AIDS-ARC Booth 1028
CDC Perinatal HIV Prevention Projects Booth 1021

NON PROFIT EXHIBITORS
MARRIOTT HOTEL/GOLDEN GATE HALL

1103 Integrity	1102 Hosp. Maine	1101 Hlth Inf Net	1100 Articulation	1099 ETR	1098 Yale Press	1097 San Mateo	1096 AWARE	1095 Open Hand	1094 PAWS

MISSION STREET

1013 UCSF University-Wide	1035 National AIDS Cleaning	1036 Community Res. All & Proj. Inform	1058 Sacramento AIDS Foundation	1059 Academy for Educational Development
1014 ACT UP	1034 National AIDS Cleaning	1037 Davies Medical Center	1057 University of Miami	1060
	1033 National AIDS Cleaning	1038 National Hemophilia Foundation	1056 American Red Cross	1061 Service Providers Association
1016 Oriental Healing Arts	1032 Quan Yin	1039 AIDS Educ. for the Deaf	1055 PWA Health Group	1062 UCSF Post-Grad Program
1017 Seattle King County	1031 San Fran AIDS Foundation	1040 Body Pos. & Community Hlth Proj.	1054 AAPHR & BAPHR	1063 AIDS Proj of the ACLU
1018 Exodus	1030 UCSF AIDS Health Project	1041 Japan AIDS Proj. & A/P AIDS Coal.	1053 American Psychiatric Association	1064 National Episc. AIDS Coalition
1019 AmFAR	1029 Medical Research Council	1042 Los Alamos	1052 Assoc. of Nurses in AIDS Care	1065 NYC Dept. of Health
1020 Parents AIDS Ed Project	1028 Catholic Charities & St. Mary's	1043 Hearing Alt. & Carl Vogel	1051 Physician's Association	1066 Community Research Initiative
1021 Perinatal HIV	1027 SFGH PERC	1044 Coalition for the Homeless	1050 Mid-Atlantic AIDS Center	1067 SALSA
1022 Asian AIDS Project	1026 Tucson AIDS Project	1045 AIDS Ed for Youth & Forensic Yth	1049 National Interfaith & Inter. Coal.	1068 PHREDA
1023 National Minority AIDS Council	1025 National AIDS Network	1046 American Indian AIDS	1048 AIDS Indigent & Metta Vihara	1069 Haitian Coalition
	1024 Bayview & City Clinic SFDH		1047 5th Conference Africa	

1081 Mid-Missouri	1082 Brooklyn AIDS Task Force
1080 Mid-Missouri	1083 AIDS/ARC Vigil
1079 Mid-Missouri	1084 Columbus AIDS Task Force
1078 NIH Clinical Nursing	1085
1077 George Washington University	1086 Larkin St. Youth Center
1076 Western Consortium	1087 Institute for Comp. Health
1075 San Fran VA Hospital	1088 Visual AID
1074 Visiting Nurses Hospice	1089 AIDS/ARC Int Group & CA Nurses
1073 National Council of La Raza	1090 UCSF School of Nursing
1072 Assoc. of Reg. Center Agencies	1091 Inst. La Raza & Latino AIDS
1071 Hebrew Union	1092 Assoc. Nat'l per la lotta
1070 Assoc. of Asian/ Pacific	

MARKET STREET

2006 18th St.

2005 Com Outreach

2004 Child Hosp

		2007 Serv Employ	2008 West Berkely			2009 Birmingham	2010 Child Quilt	2011 Mid-City
2059 Nat Task Frc	2058 AIDS Act Net	2057 Agcy Hlth	2056 CALPEP	2055 Continuum	2054 Santa Clara	2053 AIDS Intrfth	2052 Nat Director	2051 Prevent Pt
2038 Oper Concern	2037 Am College	2038 Social Sec	2039 ActionAIDS	2040 Hemo Council	2041 Region V	2042 Center Subst	2043 Diablo Vlly	2044 Contra Costa
					2030 Multicultural	2029 Kaiser	2028 Howard Brown	2027 Ark of Love

2019 RISE

2018 Walden

2021 Cure AIDS

2022

2023 MTO

CONCOURSE

3001 Swedish Phy.	3002 Bene. Counc.	3003 Kairos	3004 NIH Reagents	3005 Allcare	3006 PSI	3007 Maitri	3008 Comp Hlth Ed	3009 Mass Med Soc	3010 YES	3011 The Center	3012 AAP	3013 Nat. Academy

The Center Table 3011
The Center for AIDS and Substance Abuse Training Table 2042
Children's Quilt Project Table 2010
City Clinic of San Francisco Department of Health Booth 1024
Columbus AIDS Task Force Booth 1084
Community Health Project Booth 1040
Community Outreach Sessions/ Community Task Force Table 2005
Community Research Alliance Booth 1036
Community Research Initiative Booth 1066
Comprehensive Health Education Foundation Table 3008
Continuum HIV Day Services Table 2055
Contra Costa AIDS Task Force Table 2044
Cure AIDS Now Table 2021
Davies Medical Center Booth 1037
Department of Veterans Affairs Medical Center Booth 1075
ETR Associates Table 1099
Exodus Trust Booth 1018
Fifth International Conference on AIDS and Associated Cancers in Africa Booth 1047
Forensic Youth Services Booth 1045
Haitian Coalition on AIDS Booth 1069
Healing Alternatives Foundation Booth 1043
Health Information Network Table 1101
The HIV Center of Children's Hospital of San Francisco Table 2004
Hospice of Maine Booth 1060
Howard Brown Memorial Clinic Table 2028
Institute of Comparative Health Policy and Law Booth 1087
Instituto Familiar de la Raza, Inc. Booth 1091
Integrity SFBA Table 1103
Interreligious Coalition on AIDS Booth 1049
Japanese AIDS Project of JCYC Booth 1041
Kairos House Table 3003
Kaiser Permanente Hospital Table 2029
Larkin Street Youth Center Booth 1086
Latino AIDS Project Booth 1091
Los Alamos National Laboratory HIV Sequence Database and Analysis Projec Booth 1042
M.T.O. Shahmaghsoudi Table 2023
MAITRI Table 3007
Massachusetts Medical Society Table 3009
Medical Research Council, U.K. Booth 1029
Mid-Atlantic AIDS Regional Education and Training Center Booth 1050
Mid-Missouri AIDS Project Booths 1079, 1080, 1081
Multicultural Training Resource Center Table 2030
National Academy of Sciences Table 3013
National AIDS Information Clearinghouse Booths 1033, 1034, 1035
National AIDS Network Booth 1025
National Coalition for the Homeless Booth 1044
National Council of La Raza (NCLR) AIDS Center Booth 1073
National Directory of AIDS Care Table 2052
National Episcopal AIDS Coalition Booth 1064
National Hemophilia Foundation Booth 1038
National Institutes of Allergy and Infectious Diseases—Clinical Center Nursing Department Booth 1078

National Institutes of Health
AIDS Reagents Program
Table 3004
National Minority AIDS Council
Booth 1023
National Task Force on AIDS
Prevention Table 2059
Northern California Hemophilia
Foundation and The Hemophilia
Council of California
Table 2040
NYC Department of Health
Booth 1065
Operation Concern AIDS Prevention
Program Table 2036
Oriental Healing Arts Institute
Booth 1016
Parents AIDS Education Project
Cornell University Booth 1020
Pets Are Wonderful Support,
P.A.W.S. Table 1094
PHREDA Project Booth 1068
Physician's Association for AIDS
Care Booth 1051
Population Services International
Table 3006
Prevention Point Table 2051
Project Inform Booth 1036
Project Open Hand Table 1095
PWA Health Group Booth 1055
Quan Yin Healing Center Booth 1032
Region V Training, Indiana Family
Health Council Table 2041
RISE Table 2019
Sacramento AIDS Foundation
Booth 1058
San Francisco AIDS Foundation
Booth 1031
San Francisco General Hospital
Robert N. Ross Patient Education
Resource Center Booth 1027
San Mateo County AIDS Project
Table 1097
Santa Clara County Health Table 2054
Department AIDS Program
Seattle-King County Booth 1017
Department of Public Health
Service Employees International
Union Table 2007
Site-Visit Registration Table 2018
Social Security Administration
Table 2038
St. Mary's Hospital and Medical
Center Booth 1028
State AIDS Legal Services Association
(SALSA) Booth 1067
Swedish Physicians Against AIDS
Table 3001
University of California, San
FranciscoAIDS Health Project
Booth 1030
University of California, San Francisco
Postgraduate Programs—"Clinical
Care of the AIDS Patient"
Booth 1062
University of California, San Francisco
School of Nursing Booth 1090
University of California, San Francisco
Universitywide AIDS Research
Program Booth 1013
Union of American Hebrew
Congregations Committee on AIDS
Booth 1071
University of Miami Booth 1057
AIDS Clinical Research Unit
Visiting Nurses and Hospice of
San Francisco Booth 1074
Walden House AIDS Program
Table 1102
West Berkeley Health Center
Table 2008
Western Consortium for Public Health/
International Health Booth 1076
Yale University Press Table 1098
Y.E.S./AIDS Intervention Training
Center Table 3010
Y.E.S./Mid-City Consortium to Combat
AIDS Table 2011

DEFINITION OF SESSION TERMS

MORNING SESSIONS

Plenary Sessions
Thursday–Saturday, 8:00 am–10:30 am
Video rebroadcast, 10:30 am–1:00 pm

"State of the Art"
Six lectures providing the latest understanding on a variety of scientific, clinical, and epidemiologic issues in AIDS. Each lecture approximately 20 minutes in length. Lecture only (no discussion).

"Science to Policy"
Seven brief (12-minute) lectures exploring a single issue each day (Prevention of HIV Infection, Clinical Trials and Drug Development, and Access to Health Care) from a multidisciplinary and international perspective. A moderated discussion among the invited participants follows the formal lectures.

"Rapporteur Session": Sunday, 24 June, 8 am–10:30 am
Presentations by experts in each of the four thematic tracks (Basic Sciences, Clinical Science and Trials, Epidemiology and Prevention, and Social Science and Policy), summarizing new findings presented during the Sixth International Conference of AIDS. Lecture only (no discussion).

MIDDAY

Poster Discussions with Individual Authors
Thursday–Saturday, 11:00 am–12:45 pm
More than 700 posters on a wide variety of subjects will be displayed each day at the Conference (8:30 am–5:00 pm). Authors will be stationed by their posters during the midday period, available to discuss their findings.

Poster Discussion Sessions
Thursday–Saturday, 11:30 am–12:30 pm
Moderated discussion centered on 10–12 posters dealing with a single specialized topic. The posters will be up for viewing all day. Please review the posters before the session begins to take maximum advantage of the discussion.

AFTERNOON SESSIONS

Thursday–Saturday, 1:00–3:00 pm; 3:30–5:30 pm

Symposium
A session in which six speakers deliver addresses on one topic or related topics. Each 15-minute lecture is followed by a 5-minute discussion period.

Abstract Session
Oral presentations of 10 minutes, each based on selected abstracts. Each lecture is followed by a 5-minute discussion period.

Panel Discussion
Six brief presentations examining a single topic from a multidisciplinary and international perspective; followed by a 45-minute moderated discussion among the invited participants.

KEY TO NUMBERING OF ABSTRACTS/ABSTRACT VOLUMES

The presentations (oral and poster) are grouped by day and by thematic track.

The three abstract volumes are organized as follows:

Volume 1: Introductory material, and daily program and abstracts for Wednesday, 20 June, and Thursday, 21 June.

Volume 2: Daily program and abstracts for Friday, 22 June, as well as all published, but not presented, abstracts.

Volume 3: Daily program and abstracts for Saturday, 23 June, and Sunday, 24 June, as well as complete author, chair, and keyword (subject) indices.

The system used to number the abstracts identifies the day, the track, and the type of presentation. An abstract with a number *below* 200 is an oral presentation. One with a number *above* 200 is a poster presentation.

EXAMPLES

Th. Thursday	B. Track B	227 Poster presentation: this number is the poster board number. (numbered above 200)	in Volume 1 (Thursday)
F. Friday	A. Track A	38 Oral presentation (numbered below 200)	in Volume 2 (Friday)

Note

Track A:	Basic Science
Track B:	Clinical Science and Trials
Track C:	Epidemiology and Prevention
Track D:	Social Science and Policy

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GENERAL INSTRUCTIONS TO CHAIRS, SPEAKERS, AND POSTER PRESENTERS

SPEAKERS' CENTER

The Speakers' Center is located in the Moscone Center West Mezzanine. It will be open *Wednesday–Sunday, 20–24 June, 7:30 am– 7:00 pm.*

The following information for session chairs is available from the Speakers' Center: (1) whether a speaker has checked in; (2) messages for speakers and chairs; (3) speaker information (brief c.v.).

CHAIRS OF AFTERNOON SESSIONS

Briefing

An instructional meeting for all chairs and moderators of abstract sessions, symposia, and panel discussions will take place on *Wednesday, 20 June, at 6:00 pm* (following the Opening Ceremony) in Room E of the Moscone Center. A short meeting for the day's chairs and moderators will take place daily at 7:30 am, in the Speakers' Center Conference Room, Moscone Center West Mezzanine. Please be on time. Food and beverages will be provided.

Services for Chairpersons

Please contact the Chairpersons' Desk in the Speakers' Center for any service or assistance.

SPEAKERS IN AFTERNOON SESSIONS

Services Provided for Speakers

- Transfer of slides to conference-standard slide trays;
- projection equipment for viewing slides;
- sealing and identification of slide trays to be stored by conference staff, ready to be taken at the proper time and place to the speaker's presentation. (Projection during the presentation is provided by Conference staff.)

Slide trays will be returned to the Speakers' Center, where they can be collected at the conclusion of each session.

Procedures for Speakers

We kindly ask speakers to observe the following procedures:

- Report to the Speakers' Center at least 24 hours before the scheduled time of presentation and drop off your slides at that time.
- Make sure that each slide is marked at the bottom left hand corner to ensure proper loading in the slide trays.
- Sign consent forms to allow Conference staff to tape sessions.
- Meet with the session chairs in the session hall 15 minutes before the session begins.
- During the presentation, please conform to the instructions regarding the length of your oral presentation.

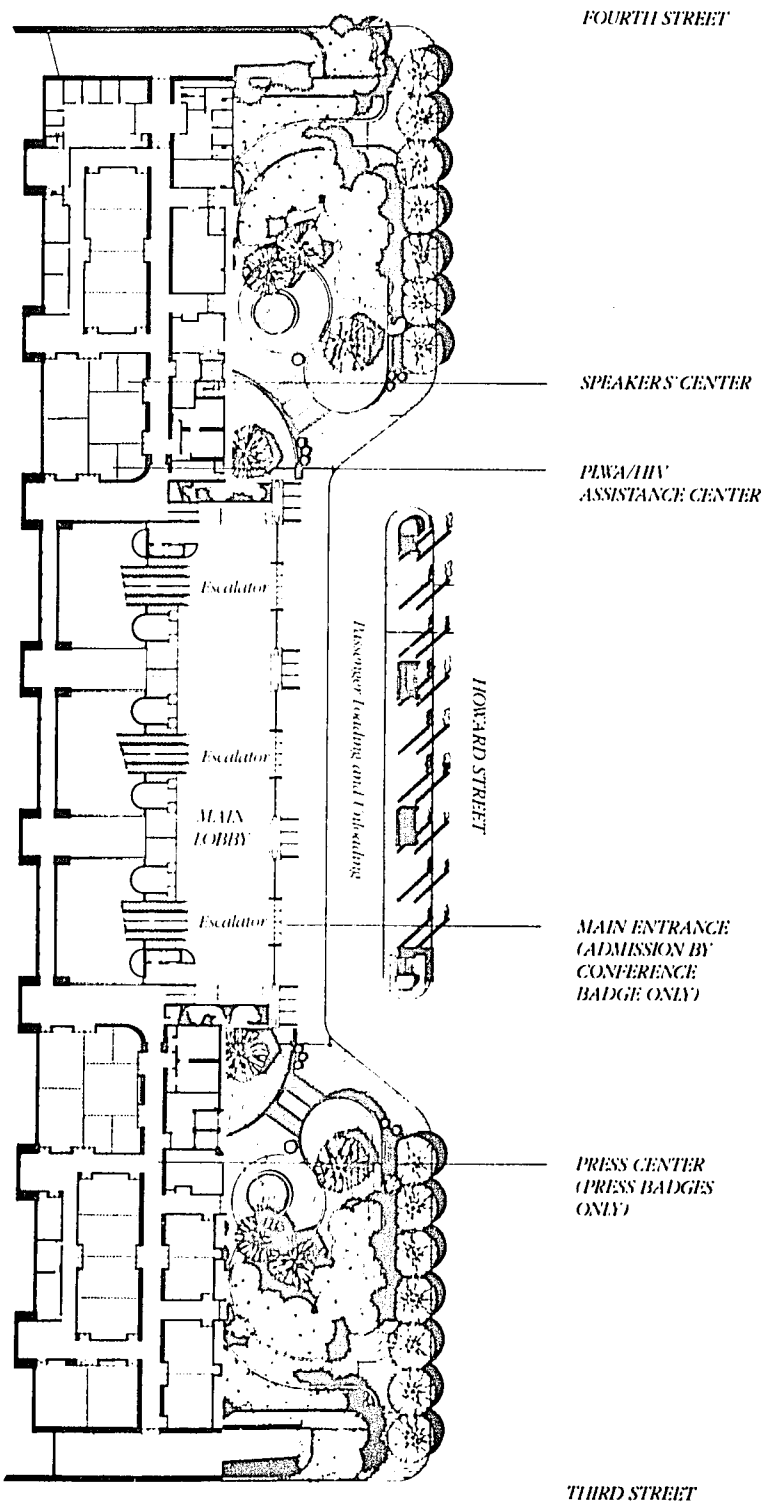
POSTER PRESENTERS

Authors are responsible for setting up and removing their posters themselves according to the following schedule:

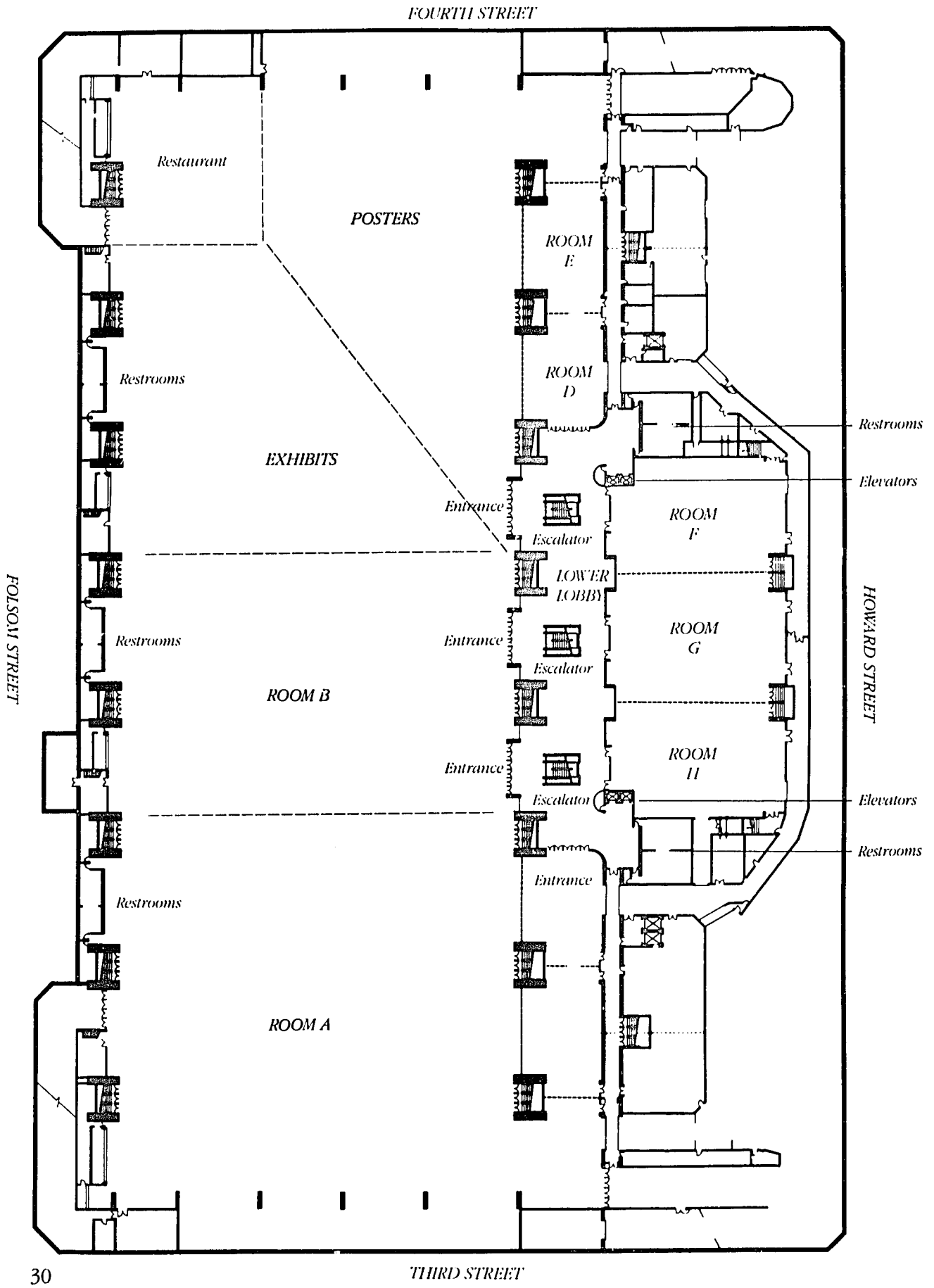
Day	*Mounting Time*	*Discussion Time*	*Removal Time*
Thursday, 21 June	7:30–8:30 am	11:00 am–12:45 pm	5:00–6:00 pm
Friday, 22 June	7:30–8:30 am	11:00 am–12:45 pm	5:00–6:00 pm
Saturday, 23 June	7:30–8:30 am	11:00 am–12:45 pm	5:00–6:00 pm

Posters not removed by 6:00 pm on the day of presentation will be discarded by Conference staff.

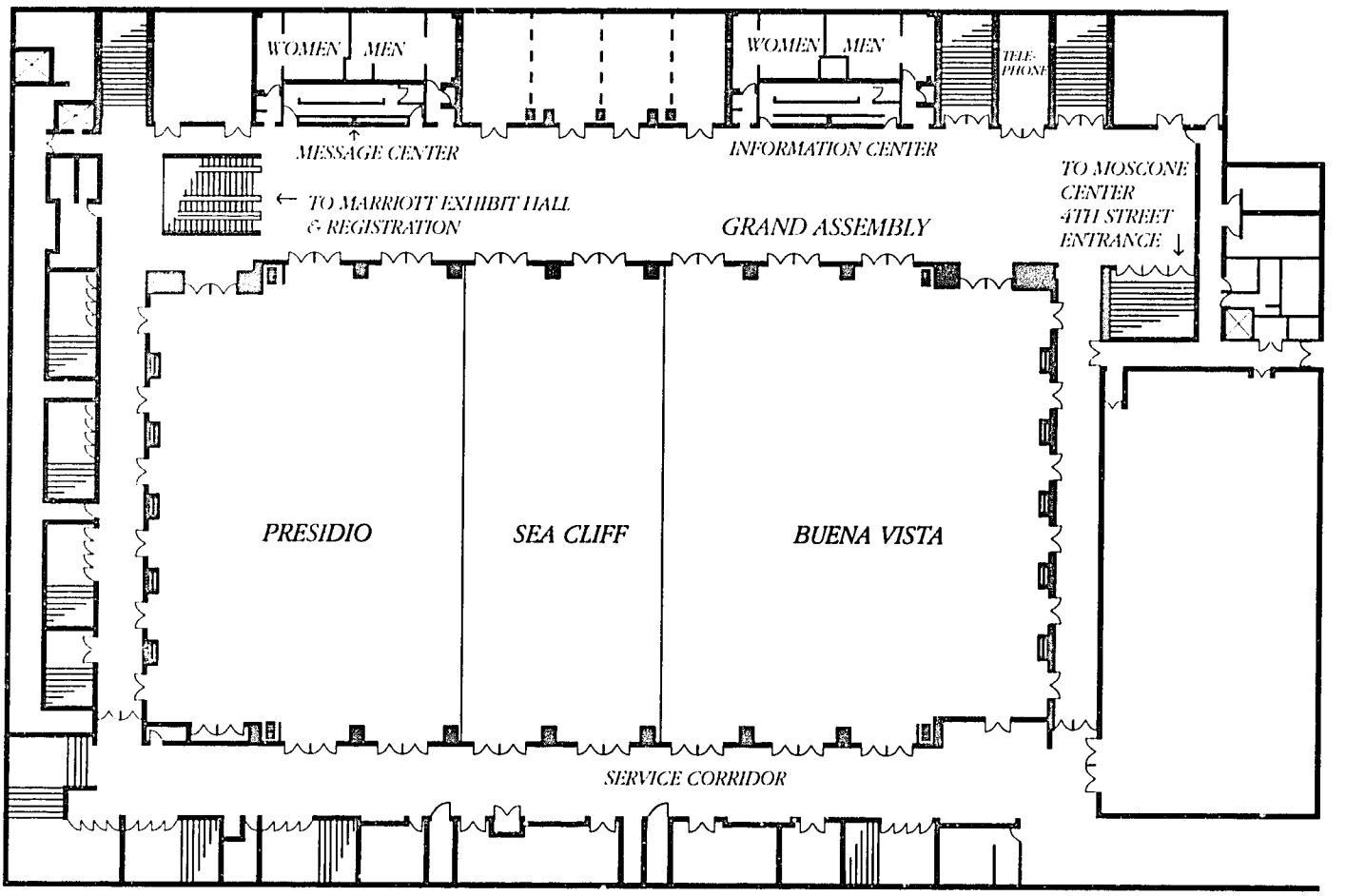
MOSCONE CONVENTION CENTER (STREET LEVEL)



MOSCONE SESSION ROOMS
(LOWER LEVEL)



SF MARRIOTT SESSION ROOMS



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DAY AT A GLANCE / SATURDAY

8:00–10:30AM
TWO CONCURRENT PLENARIES

"State of the Art" Session (Moscone A). Twenty-minute lectures covering: Nursing Care, Update on Opportunistic Infections, Tuberculosis in AIDS, Risk Factors and Progression of HIV Infection, AIDS in Eastern Europe.

"Science to Policy" Session (Moscone B). Brief lectures followed by a moderated discussion in the area of "Access to Health Care."

10:30AM–1PM
THREE CONCURRENT EVENTS

Poster Viewing: More than 700 posters dealing with topics in Basic Science, Clinical Science, Epidemiology and Prevention, and Social Science and Policy.

Plenary Rebroadcasts: Videotapes of both concurrent plenaries may be viewed in the same rooms as their original presentations.

Poster Discussion Sessions: Two moderated discussions based on posters dealing with "Pediatric HIV Infection: Neurodevelopment and Laboratory Diagnosis" (Moscone D) and "HIV Testing: Test Performance" (Moscone E).

1:00–3:00PM
ORAL SESSIONS

A9	HIV Entry and Replication (AS)	Marriott BV
A10	Animal Models for AIDS (AS)	Marriott SC
B9	Management of Nonviral Opportunistic Infections (S)	Moscone B
B10	Clinical Aspects in Developing Countries (AS)	Marriott Pres
C9	Issues in Sexually Transmitted HIV Infection (AS)	Moscone A
C10	Epidemiology and Prevention of HIV Infection in Adolescents (AS)	Moscone G
D9	Health Care Worker Issues (S)	Moscone F
D10	Culturally Specific Approaches to Care and Prevention (S)	Moscone H

3:30–5:30PM
ORAL SESSIONS

A11	AIDS Pathogenesis (AS)	Marriott BV
A12	Approaches to an HIV Vaccine (AS)	Marriott SC
B11	Resistance to Anti-Retrovirals (AS)	Moscone B
B12	Oral and Gastrointestinal Mucosal Disease (S)	Marriott Pres
C11	HIV Testing—Counseling and Partner Notification (AS)	Moscone A
C12	Sexual Transmission of HIV Infection (P)	Moscone G
D11	Parallel Track (P)	Moscone F
D12	Drug Use—Public Policy Issues (AS)	Moscone H

Session Type Abbreviations
(AS): Abstract Session (P): Panel Discussion (S): Symposium

Marriott Hotel Session Room Abbreviations
BV: Buena Vista SC: Sea Cliff Pres: Presidio

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PLENARY SESSIONS
SATURDAY, 23 JUNE, 8:00-10:30 AM

State of the Art / Moscone, Room A

Chairs: Gerald Friedland
Montefiore Medical Center, USA

Therese Mulandi
Manager, Kenya AIDS Control Program, Kenya

Nursing Care
Vuyelwa Ndiki Ngcongco
Regional Office for Africa
World Health Organization, Congo

Update on Management of Opportunistic Infections
Catherine Leport
Service of Infectious Diseases
Claude Bernard Hospital, France

Tuberculosis in AIDS
Peter Eriki
World Health Organization

Risk Factors and HIV Disease Progression
Godfried J.P. van Griensven
Amsterdam Municipal Health Service, The Netherlands

AIDS in Eastern Europe
Sieghart Dittman
Director, Institute for Hygiene, Microbiology and Epidemiology, GDR

AIDS: Revolution, Paradigm, and Solidarity in Global Health
Jonathan Mann
Neon, Switzerland

(Each lecture in this plenary will last approximately 20 minutes.)

Science to Policy / Moscone, Room B
"Access to Health Care"

Chair: Constance Mitcham
Minister of Health and Women's Affairs
St. Kitts-Nevis, West Indies

Moderator: Mark Smith
Johns Hopkins University, USA

How Is the Developing World Doing?
H.M. Ntaba
Chief of Health Services, Ministry of Health, Malawi

How Is the Industrialized World Doing?
Jean McGuire
Executive Director, AIDS Action Council, Washington, DC, USA

Experience with Blocked Access to Care
Ishmail H. Bangura
National AIDS Control Program, Sierra Leone

Social and Political Impediments to Access: Homophobia
Robert Tielman
University of Utrecht, The Netherlands

The Ethics of Providing Health Care to HIV-Infected Individuals
Laurence McCullough
Center for Ethics, Medicine and Public Issues
Baylor College of Medicine, USA

Health Care for AIDS in the Soviet Union
Elena Pankova
Science Coordinator, *Ogonyok Magazine*, USSR

(Each lecture in this plenary will last approximately 12 minutes. The lectures will be followed by a moderated discussion.)

Videotapes of both sessions may be viewed from 10:30 am to 1:00 pm in the same rooms as the original presentations.

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SATURDAY, 23 JUNE / 1:00–3:00 PM
TRACK A: BASIC SCIENCE

A9 *Marriott, Buena Vista*

Abstract Session: HIV Entry and Replication

Chairs: Jonathan Weber (UK)
Susan Gartner (USA)

1:00 S.A.1
HIV-1 TROPISM FOR MONONUCLEAR PHAGOCYTES IS GENETICALLY DETERMINED BY EARLY EVENTS. O'Brien, William; Koyanagi, Y.; Zack, J.; Chen, I.S.Y.; University of California, Los Angeles, CA, USA.

1:15 S.A.2
MOLECULAR AND BIOLOGICAL STUDIES ON A NEUROLOGICAL HIV-1 ISOLATE. Wood, Charles*; Liu, Z.-Q.*; Levy, J.A.†; Cheng-Mayer, C.†; *University of Kansas, Lawrence, KA, †Cancer Research Institute, University of California, San Francisco, CA, USA.

1:30 S.A.3
MODIFICATION OF CELL TROPISM OF HIV-1 BY A SINGLE POINT MUTATION AT THE NEUTRALIZATION EPITOPE IN THE env GENE. Hoshino, Hiroo; Takeuchi, Y.; Akutsu, M.; Murayama, K.; Shimizu, N.; Department of Hygiene, Gunma University School of Medicine, Maebashi, Japan.

1:45 S.A.4
IDENTIFICATION OF A PUTATIVE CELLULAR RECEPTOR FOR HIV-1 gp41. Henderson, Lee A.*; Nasar M. Qureshi,*/† David H. Coy,† and Robert F. Garry†. *Departments of Pathology, †Microbiology and Immunology, and ‡Medicine, Tulane Medical School, New Orleans, LA, USA.

2:00 S.A.5
MECHANISM OF SIV-INDUCED VIRAL FUSION INVOLVES ACTIVATION OF THE VIRAL MEMBRANE VIA CD4. Allan, Jonathan*; Whitehead, E.*; Buck, D.†; *Southwest Foundation for Biomedical Research, San Antonio, TX, †Becton-Dickinson Monoclonal Antibody Center, Mountain View, CA, USA.

2:15 S.A.6
SERINE PROTEASE IN THE MEMBRANE OF HUMAN T4+ LYMPHOCYTES IS A NOVEL BINDING PROTEIN OF gp120 OF HIV-1 OTHER THAN CD4 RECEPTOR. Katunuma, Nobuhiko; Kido, H.; Fukutomi, A.; Institute for Enzyme Research, The University of Tokushima, Tokushima, Japan.

2:30 S.A.7
GENERATION OF REPLICATION-DEFECTIVE HIV BY GENETIC COMPLEMENTATION. Page, Kathleen; Littman, D.; University of California, San Francisco, CA, USA.

2:45 S.A.8
ROLE OF N-LINKED OLIGOSACCHARIDES OF HIV-1 ENVELOPE GLYCOPROTEIN IN VIRUS INFECTIVITY AND CELL TROPISM. Lee, Woan-Ruoh; Syu, W.J.; Matsuda, M.; Tan, S.C.; Du, B.; Wolf, A.; Essex, M.; Lee, T.H.; Harvard University School of Public Health, Boston, MA, USA.

A10 *Marriott, Sea Cliff*

Abstract Session: Animal Models for AIDS

Chairs: Opendra Narayan (USA)
Reinhard Kurth (FRG)

1:00 S.A.9
HOST RESPONSES ASSOCIATED WITH ONSET AND PREVENTION OF LENTIVIRAL DISEASE. Narayan, Opendra; Johns Hopkins University School of Medicine, Baltimore, MD. USA.

1:15 S.A.10
ACUTELY PATHOGENIC MOLECULARLY CLONED SIV/SMM-PBJ14: IN VIVO AND IN VITRO CORRELATES OF DISEASE. Fultz, Patricia N.*; Dewhurst, S.†; Anderson, D.C.*; Mullins, J.I.‡; *Emory University, Atlanta, GA, †Harvard University, Boston, MA, ‡Stanford University, Stanford, CA, USA.

1:30 S.A.11
PATHOGENESIS OF INTESTINAL DYSFUNCTION IN HUMAN AND SIMIAN AIDS. Dandekar, Satya*; Heise, C.*; Martfeld, D.*; Miller, C.†; Marx, P.†; Donovan, R.M.*; Halsted, C.H.*; *Department of Internal Medicine and †California Primate Research Center, University of California, Davis, CA, USA.

1:45 S.A.12
FELINE IMMUNODEFICIENCY VIRUS—GENETIC ORGANIZATION AND REGULATION. Sparger, Ellen Elizabeth*; Luciw, P.A.*; Pedersen, N.C.*; Elder, J.†; *University of California, Davis, CA, †Research Foundation of Scripps Clinic, La Jolla, CA, USA.

2:00 S.A.13
COINFECTION OF CATS WITH FELINE IMMUNODEFICIENCY VIRUS (FIV) AND FELINE LEUKEMIA VIRUS (FELV) AFFECTS TISSUE DISTRIBUTION OF FIV AND DISEASE PROGRESSION. Torten, Michael; Dandekar, S.; Sparger, E.E.; Rideout, B.A.; Luciw, P.A.; Pedersen, N.C.; University of California, Davis, CA, USA.

2:15 S.A.14
UV IRRADIATION INCREASES HIV LONG TERMINAL REPEAT (LTR) DRIVEN EXPRESSION OF CHLORAMPHENICOL (CAT) IN LTR/CAT TRANSGENIC MICE. Frucht, David M.*; Vicenzi, E.†; Leonard, J.†; Belcher, J.H.†; Martin, M.A.†; *Howard Hughes Medical Institute, LMM, NIAID, Bethesda, MD, †LMM, NIAID, Bethesda, MD, USA.

2:30 S.A.15
PERSISTENT DERMATOSES AND FETAL ABORTION IN HIV-1 nef TRANSGENIC MICE. Dickie, Peter*; Ahmed, N.†; Marinos, N.*; Notkins, A.L.*; Venkatessan, S.†; *Laboratory of Oral Medicine, National Institute of Dental Research, and †Laboratory of Molecular Microbiology, National Institute of Allergy and Infectious Diseases, Bethesda, MD, USA.

2:45 S.A.16
HIV INFECTION OF HUMAN LYMPH NODES IN THE SCID-hu MOUSE. Kaneshima, Hideto; Namikawa, R.; Shih, C.-C.; Rabin, L.; McCune, J.M.; SyStemix, Inc., Palo Alto, CA, USA.

SATURDAY, 23 JUNE / 1:00–3:00 PM
TRACK B: CLINICAL SCIENCE & TRIALS

B9 *Moscone, Room B*

Symposium: Management of Nonviral Opportunistic Infections

Chairs: Deborah Marriott (Australia)
Pierre Marie Girard (France)

1:00 S.B.17
TREATMENT OF PNEUMOCYSTIS CARINII PNEUMONIA. Sattler, Fred R.; Los Angeles County-University of Southern California Medical Center, Los Angeles, CA, USA.

1:20 S.B.18
PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA. Masur, Henry; Clinical Center, National Institutes of Health, Bethesda, MD, USA.

1:40 S.B.19
CRYPTOCOCCAL MENINGITIS. Powderly, William; Washington University School of Medicine, St. Louis, MO, USA.

2:00 S.B.20
TOXOPLASMOSIS. Remington, Jack S.; Stanford University, Stanford, CA, USA.

2:20 S.B.21
ENTERIC PARASITES. Soave, Rosemary; The New York Hospital/Cornell Medical Center, New York, NY, USA.

2:40 S.B.22
UNUSUAL BACTERIAL INFECTIONS. Hafner, Richard; National Institutes of Health, Bethesda, MD, USA.

B10 *Marriott, Presidio*

Abstract Session: Clinical Aspects of AIDS in Developing Countries

Chairs: Jack Wirima (Malawi)
Robert Colebunders (Belgium)

1:00 S.B.25
EPIRUBICIN IS ACTIVE AGAINST AFRICAN HIV-RELATED KAPOSI'S SARCOMA. Bayley, Anne C.; Luo, N.; University of Zambia, Lusaka, Zambia.

1:15 S.B.26
AFRICAN BURKITT'S LYMPHOMA AND HIV INFECTION. Banura, Cecily*; Katongole-Mbidde, E.*; Desmond-Hellmann, S.†; Kizito, A.*; Kazura, J.‡; Hellmann, N.S.‡; *Uganda Cancer Institute, Kampala, Uganda, †UCSF, CA, USA, ‡Case Western Reserve University, Cleveland, OH, USA.

1:30 S.B.27
SYPHILIS AMONG HIV+ AND HIV- PROSTITUTES IN KINSHASA: PREVALENCE AND SEROLOGIC RESPONSE TO TREATMENT. Manoka, Abib T.*; Laga, M.†/‡; Kivuvu, M.*; Tuliza, C.*; Nzila, N.*; Van Dyck, E.‡; Edidi, B.*; Mokwa, K.*; Piot, P.‡; Ryder, R.*/‡; *Projet SIDA, Kinshasa, Zaire, †CDC, Atlanta, GA, USA, ‡Inst. of Trop. Med. Antwerp, Belgium.

1:45 S.B.28
HTLV-I ASSOCIATED NEU[illegible]OGICAL DISORDERS IN WEST AFRICA. Dumas, Michel*; Verdier, M.*/†; Giordano, C.‡; Ndiaye, I.‖; Grunitzky, E.*; Kabore, J.*; Denis, F.*/†; *Inst. de Neurologie Tropicale, CHU Limoges, France, †Lab. de Virologie, CHU Limoges, France, ‡Serv. de Neurologie, CHU Abidjan, Cote d'Ivoire, ‖Serv. de Neurologie, CHU Dakar, Senegal, *Serv. de Neurologie, CHU Ouagadougou, Burkina Faso.

2:00 S.B.29
DIARRHEAL ILLNESS AMONG PEDIATRIC AIDS PATIENTS. Santa Lucia, M. M.†; Ito, H.†; Della Negra, de Paula M.*; Queiroz, W.*; Janini, M.*; Rodriguez, C.*; *Hospital Emilio Ribas, Sao Paulo, †Hospital Infantil Candido Fontoura, Sao Paulo, Brazil.

2:15 S.B.30
PEDIATRIC HIV DISEASE: A THREE YEAR PROSPECTIVE STUDY. Malek, Adel N.A.; Mukelabai, K.; Nyumbu, M.; Nyaywa, S.; Luo, N.; University Teaching Hospital, Lusaka, Zambia.

2:30 S.B.31
CUTANEOUS MANIFESTATIONS OF HIV INFECTION IN ZAIRIAN PATIENTS. Nelson, Ann Marie*/†; Perriens, J.*/‡; Kanda, B.*/‖; Ngoi, T.*; Kapita, B.*; Angritt, P.‡; *Projet SIDA, Kinshasa, Zaire, †Armed Forces Inst. of Path., Wash., DC, USA, ‡Inst. of Trop. Med., Antwerp, Belgium, ‖Univ. Clinics, Kinshasa, Zaire, *Mama Yemo Hosp., Kinshasa, Zaire.

2:45 S.B.32
PLEURAL EFFUSION AND HIV INFECTION IN KIGALI, RWANDA. Batungwanayo, Jean*; Taelman, H.*; Bogaerts, J.*; Allen, S.†; Kagame, A.*; Kabagabo, L.*; Nyirabareja, A.*; Rutaganira, Y.*; Abdel Aziz, M.*; Blanche, P.*; Van de Perre, P.‡; *Centre Hospitalier de Kigali (CHK), †San Francisco Project, Kigali, ‡AIDS Control Program, Kigali, Rwanda.

SATURDAY, 23 JUNE / 1:00–3:00 PM
TRACK C: EPIDEMIOLOGY & PREVENTION

C9 *Moscone, Room A*

Abstract Session: Issues in Sexually Transmitted HIV Infection

Chairs: Rafael Garcia-Alvarez (Dominican Republic)
Edward Katongole Mbidde (Uganda)

1:00 S.C.33
HIV PREVENTION INTERVENTIONS AMONG PROSTITUTES OF INDIA: DELHI EXPERIENCE. Singh, Yadu Nath; Malaviya, A.N.; Department of Medicine, All India Institute of Medical Sciences, New Delhi, India.

1:15 S.C.34
COMMUNITY-BASED AIDS PREVENTION CAMPAIGN IN AN URBAN SETTING IN TANZANIA. Laukamm-Josten, Ulrich[†]; Joinet, B.[*]; Kilonzo, G.[*]; [*]Muhimbili Medical Center, [†]African Med. and Res. Edtion. (AMREF), Dar es Salaam, Tanzania.

1:30 S.C.35
HIV SEROCONVERSION IN URBAN RWANDAN WOMEN BEFORE AND AFTER A PREVENTION PROGRAM. Allen, Susan[*]/[†]; Serufilira, A.[‡]; Van de Perre, P.[‡]; Lindan, C.[*]; Tice, J.[*]; Hulley, S.[*]; Black, D.[*]; [*]UCSF Center for AIDS Prevention Studies (CAPS), San Francisco, CA, USA, [†]Projet San Francisco, Kigali, Rwanda, [‡]National AIDS Prevention Program, Kigali, Rwanda.

1:45 S.C.36
NONOXYNOL 9: ITS ADVERSE EFFECTS. Barnett, J.; Rekart, M.L.; Manzon, Linda M.; Wittenberg, L.; NcNabb, A.; British Columbia Centre for Disease Control, Vancouver, BC, Canada.

2:00 S.C.37
ACCULTURATION DIFFERENCES IN HISPANIC CONDOM USE. Marin, Barbara V.[*]; Marin, G.[†]; [*]UCSF Center for AIDS Prevention Studies, San Francisco, CA, [†]University of San Francisco, San Francisco, CA, USA.

2:15 S.C.38
PSYCHOSOCIAL FACTORS AND RISK FOR HIV INFECTION AMONG SEXUALLY ACTIVE MEN: THE MULTICENTER AIDS COHORT STUDY (MACS). Penkower, Lili[*]; Dew, M.A.[*]; Kingsley, L.[*]; Becker, J.[*]; Satz, P.[‡]; Schaerf, F.[‡]; Sheridan, K.[‖]; [*]University of Pittsburgh, Pittsburgh, PA, [†]University of California, San Francisco, CA, [‡]Johns Hopkins Medical Institutions, Baltimore, MD, [‖]Northwestern University Medical School, Evanston, IL, USA.

2:30 S.C.39
THE EPIDEMIOLOGY OF RISK BEHAVIOR IN LOS ANGELES: POPULATION-BASED COMPARISON OF GAY/BISEXUAL MEN AND THE GENERAL POPULATION. Yano, Elizabeth M.; Gorman, E.M.; Kanouse, D.E.; Berry, S.H.; Abrahamse, A.; RAND Corporation, Santa Monica, CA, USA.

2:45 S.C.40
POPULATION-WIDE RISK BEHAVIOR REDUCTION THROUGH DIFFUSION OF INNOVATION FOLLOWING INTERVENTION WITH NATURAL OPINION LEADERS. Kelly, Jeffrey A.; St. Lawrence, J.S.; Stevenson, L.Y.; Diaz, Y.E.; Hauth, A.C.; Brasfield, T.L.; Smith, J.E.; Bradley, B.G.; Bahr, G.R.; University of Mississippi Medical Center, Jackson, MS, USA.

C10 *Moscone, Room G*

Abstract Session: Epidemiology and Prevention of HIV Infection in Adolescents

Chairs: Ann-Britt Bohlin (Sweden)
Dirceu B. Greco (Brazil)

1:00 S.C.41
HIV SEROPREVALENCE AMONG ADOLESCENTS AND YOUNG ADULTS IN SELECTED CLINICAL SETTINGS, UNITED STATES, 1988-90. Wendell, Deborah A.; Onorato, I.M.; Allen, D.M.; McCray, E.; Sweeney, P.A.; state and local hlth. depts.; Centers for Disease Control, Div. of HIV/AIDS, Atlanta, GA, USA.

1:15 S.C.42
RISK BEHAVIOR FOR HIV INFECTION AMONG STREET YOUTH IN BRAZIL. Antunes, Carlos[*]/[†]; Ude, W.[*]; Campos, R.[*]; Amado, M.[*]; Greco, D.[*]; Halsey, N.[†]; Ruff, A.[†]; Rolf, J.[†]; [*]Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, [†]The Johns Hopkins University, Baltimore, MD, USA.

1:30 S.C.43
PATTERNS OF AIDS-RELATED RISK AND PREVENTIVE BEHAVIORS AMONG TEENAGE MEN IN THE USA. Ku, Leighton[*]; Sonenstein, F.[†]; Pleck, J.[‡]; [*]SysteMetrics, Lexington, MA, [†]Urban Institute, Washington, DC, [‡]Wheaton College, Norton, MA, USA.

1:45 S.C.44
ADOLESCENTS AND CONDOM USE: THE DIFFERENCE BETWEEN CONTRACEPTION AND STD-AIDS PREVENTION. Otis, Joanne[*]; Godin, G.[†]; Lambert, J.[‡]; Pronovost, R.[*]; [*]DSC de l'Hopital Charles LeMoyne, Greenfield Park, Quebec, [†]Universite Laval, Sainte-Foy, Quebec, [‡]Universite de Montreal, Montreal, Quebec, Canada.

2:00 S.C.45
KNOWLEDGE OF AIDS AMONG SECONDARY SCHOOL PUPILS IN BAGAMOYO AND DAR ES SALAAM, TANZANIA. Kapiga, Saidi[*]; Nachtigal, G.[†]; Hunter, D.[‡]; [*]University of Dar es Salaam, Dar es Salaam, Tanzania, [†]GTZ-Family Health Project, Tanzania, [‡]Harvard School of Public Health, Boston, MA, USA.

2:15 S.C.46
AIDS AND ADOLESCENTS: KNOWLEDGE, ATTITUDES AND BEHAVIOR IN A MEDITERRANEAN STUDENT SAMPLE. Ordonana, Juan R.[*]; Gutierrez, J.J.[*]; Martinez, P.[*]; Perez-Riquelme, F.[*]; Perez-Flores, D.[†]; [*]Direccion General de Salud, Murcia, [†]Universidad de Murcia, Murcia, Spain.

2:30 S.C.47
AN EFFECTIVE PROGRAM FOR CHANGING SEXUAL RISK BEHAVIORS OF GAY MALE AND RUNAWAY ADOLESCENTS. Rotheram-Borus, Mary Jane; Koopman, C.; Haignere, C.; Hunter, J.; Ehrhardt, A.A.; HIV Center for Clinical and Behavioral Studies, NY State Psychiatric Institute, and Columbia University, New York, NY, USA.

2:45 S.C.48
EVALUATION OF A HIGH SCHOOL-BASED EDUCATION AND SKILLS TRAINING INTERVENTION FOR PREVENTION OF AIDS AND STDS. Boyer, Cherrie; Shafer, M.A.; School of Medicine, University of California, San Francisco, CA, USA.

SATURDAY, 23 JUNE / 1:00–3:00 PM
TRACK D: SOCIAL SCIENCE & POLICY

D9 *Moscone, Room F*

Symposium: Health Care Worker Issues

Chairs: Rodger Pettyjohn (USA)
Suphak Vanichseni (Thailand)

1:00 S.D.49
ETHICS IN THE TRENCHES: TRANSLATING ETHICAL PRINCIPLES INTO PRACTICE IN HEALTH CARE INSTITUTIONS. Anderson, Elizabeth S.; Group Health Cooperative of Puget Sound, Seattle, WA, USA.

1:20 S.D.50
WHICH PHYSICIANS WILL PROVIDE AIDS CARE?. Cooke, Molly*; Koenig, B.†; Beery, N.*; Folkman, S.*; *UCSF Center for AIDS Prevention Studies; †UCSF Medical Anthropology Program, SF, CA, USA.

1:40 S.D.51
KNOWLEDGE AND ATTITUDINAL PREDICTORS OF AIDS-NEGATIVITY IN MEDICAL STUDENTS. McCamish, Malcolm; Buckham, C.; Najman, J.; University of Queensland, Brisbane, Australia.

2:00 S.D.52
DIFFICULTIES IN THE NURSING CARE OF HIV POSITIVE PATIENTS IN INDIA. Bhargava, Alka; Singh, Y. N.; Kumar A.; Tripathy S.; Malaviya A. N.; All India Institute of Medical Sciences, New Delhi, India.

2:20 S.D.53
HOW TO THINK ABOUT THE EMPLOYMENT PROBLEMS OF AN HIV INFECTED HEALTH CARE WORKER IN LEGAL TERMS. Frankfurt, Jo Anne*; Coles, M. A.†; *Legal AID Society of San Francisco, San Francisco, CA, USA; †American Civil Liberties Union, San Francisco, CA, USA.

2:40 S.D.54
MANAGING GRIEF AND LOSS IN THE WORKPLACE. Macks, Judy A.; Bidgood, R.; Schoen, K.; JKR Associates, San Francisco, CA, USA.

D10 *Moscone, Room H*

Symposium: Culturally Specific Approaches to Care and Prevention

Chairs: Sandra Hernandez (USA)
E. Maxine Ankrah (Uganda)

1:00 S.D.57
THE IMPACT OF HIV-1 INFECTION ON CHILDREN IN DEVELOPING COUNTRIES: RESPONDING WITH CULTURALLY APPROPRIATE PROGRAMS. Valleroy, Linda A.*/†; Harris, J. R.*; Way, P. O.†; *USAID, Washington, DC, USA; †U.S. Bureau of the Census, Washington, DC, USA.

1:20 S.D.58
THE ROLE OF TRADITIONAL HEALERS IN COMBATTING AIDS IN SOUTHERN AFRICA. Zazayokwe, Musa; Christie, G.; AIDS Centre, South African Institute for Medical Research (SAIMR), Johannesburg, South Africa.

1:40 S.D.59
AN ALTERNATIVE HOSPITAL-BASED VOLUNTEER SUPPORT PROGRAM FOR PERSONS DIAGNOSED WITH AIDS. Klick, Kevin J.*; Poust, B.†; Black, L.†; Bonsu, J.‡; Belanger, D.‖; Sanchez, A.#; *Bronx Municipal Hospital Center, †Project BRAVO, ‡North Central Bronx/Montefiore Hospital, ‖Bronx Lebanon Hospital, #Saint Barnabus Hospital, Bronx, NY, USA.

2:00 S.D.60
EVALUATION OF THE EDUCATIONAL TRAINING PROGRAMME TO PROFESSIONALS THAT WORK WITH STREET KIDS IN SAO PAULO, BRAZIL. de Carvalho, Cecilia Ayres*; Fernandes, M.*; Camargo, I.†; Claro, C.†; Carvalho, A. L.‡; Barbetta, A.‡; *Reference and Training Center on AIDS, Sao Paulo, Brazil; †State Fndtn. for Welfare of Minors; ‡Street Kids Natl. Movement.

2:20 S.D.61
HIV INFECTION HAVE A PLACE AT CARNIVAL—SAO PAULO. Fernandes, Maria Eugenia, Matarazzo, M.H., Inglesi, E., Rangel, P., Lourenco, A.; State Health Department, The Reference and Training Center on AIDS, Sao Paulo, Brazil.

2:40 S.D.62
AN EXPLORATORY PEER EDUCATION AIDS PROGRAMME FOR THE YOUTH. Ramakhula, Sinnah; Mabuya, W.; Christie, G.; AIDS Centre, South African Institute for Medical Research (SAIMR), Johannesburg, South Africa.

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SATURDAY, 23 JUNE / 3:30–5:30 PM
TRACK A: BASIC SCIENCE

A11 *Marriott, Buena Vista*

Abstract Session: AIDS Pathogenesis

Chairs: Robert Gallo (USA)
David Cooper (Australia)

3:30 S.A.65
RECENT FINDINGS IN KAPOSI'S SARCOMA. Gallo, Robert C.; Laboratory of Tumor Cell Biology, National Cancer Institute, National Institutes of Health, Bethesda, Maryland, USA.

3:45 S.A.66
AIDS KAPOSI'S SARCOMA-DERIVED CELLS PRODUCE AND RESPOND TO INTERLEUKIN 6. Martinez-Maza, Otto[1]; Miles, S.[2]; Rezai, A.[3]; Logan, D.[3]; Salazar-Gonzalez J.E.[3]; Vander Meyden, M.[3]; Mitsuyasu, R.T.[2]; Taga, T.[4]; Hirano T.[5]; Kishimoto, T.[5]; [1]UCLA AIDS Center and [2]School of Medicine, Los Angeles, CA, USA; [3]Ontario Cancer Center, Ontario, Canada; [4]Osaka University, Osaka, Japan.

4:00 S.A.67
CULTURE AND PROPERTIES OF KAPOSI'S SARCOMA CELLS ISOLATED FROM AIDS PATIENTS. Corbeil, Jacques; Evans, L.A.; Cooper, D.A.; Vasak, E.; Penny, R.; Centre for Immunology, St. Vincent's Hospital, Sydney, NSW, Australia.

4:15 S.A.68
CHARACTERIZATION OF HIV-1 STRAINS RECOVERED FROM THE BOWEL. Barnett, Susan W.[1]; Barboza, A.J.[1]; Wilcox, C.M.[2]; Forsmark, C.E.[2]; Levy, J.A.[1]; [1]School of Medicine, University of California, San Francisco, CA; [2]San Francisco General Hospital, Gastrointestinal Division, UC San Francisco, CA, USA.

4:30 S.A.69
RESTRICTED EXPRESSION OF HIV-1 IN HUMAN NEURAL CELLS: INDUCTION OF LATENT VIRUS. Shahabuddin, Muhammad; Kim, H.; Volsky, B.; Volsky, D.J.; St. Luke's-Roosevelt Hospital Center, College of Physicians & Surgeons, Columbia University, New York, NY, USA.

4:45 S.A.70
REGULATION OF HIV-1 LTR IN HUMAN BRAIN CELLS IN THE PRESENCE OF AN ACTIVE HIV-1 TAT GENE AND POLYOMAVIRUS T PROTEINS. Amemiya, Kei; Nath, A.; Major, E.; National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD, USA.

5:00 S.A.71
DIRECT COMPARISON OF THE INFECTIVITY OF HIV ISOLATES IN VITRO AND IN VIVO IN THE SCID-hu MOUSE. Rabin, Linda; Kaneshima, H.; Shih, C.-C.; McCune, J.M.; SyStemix, Inc., Palo Alto, CA, USA.

5:15 S.A.72
A PANEL OF HOMOLOGOUS INFECTIOUS MOLECULAR CLONES WITH DIVERGENT BIOLOGICAL PHENOTYPES RECOVERED FROM AN INDIVIDUAL PROGRESSING TO AIDS. Tersmette, M.; Groenink, M.; Fouchier, R.; de Goede, R.E.Y.; Huisman, J.G.; Central Lab. Neth. Red Cross Blood Transf. Service and Lab. of Clin. and Exp. Immunol. of the University of Amsterdam, Amsterdam, The Netherlands.

A12 *Marriott, Sea Cliff*

Abstract Session: Approaches to an HIV Vaccine

Chairs: Alan M. Schultz (USA)
Fernando Plata (France)

3:30 S.A.73
EVALUATING VACCINE APPROACHES USING THE SCID MOUSE MODEL. Mosier, Donald E.; Medical Biology Institute, La Jolla, California.

3:45 S.A.74
INHIBITION OF SIV INFECTION IN MACAQUES PREIMMUNIZED WITH SEVERAL SIVenv PEPTIDES PRESENTED AS alpha GALACTOSIDASE FUSION PROTEINS. Shafferman, Avigdor[*]; Jahrling, P.[1]; Benveniste, R.[+]; Lewis, M.[1]; Phipps, T.[1]; McCutchan, F.[++]; [*]Dept. of Biochem., Israel Inst. Biological Res., Ness-Ziona, Israel; [1]U.S. Army Med. Res. Inst. Inf. Dis., Ft. Detrick, Frederick, MD; [+]Lab. of Viral Carcinogenesis, NCI, Frederick, MD; [++]Jackson Fdtn. Res. Lab., Rockville, MD.

4:00 S.A.75
VaxSyn HIV-1 Grp 160 VACCINE RECIPIENTS DEMONSTRATE FUNCTIONAL IMMUNE RESPONSES CLASSICALLY ASSOCIATED WITH PROTECTIVE IMMUNITY. Smith, Gale E.; Volvovitz, F.; MicroGeneSys, Inc., West Haven, CT, USA.

4:15 S.A.76
PROGRESS IN THE DEVELOPMENT OF A P17 BASED HIV VACCINE: IMMUNOGENICITY OF HGP-30 IN HUMANS. Goldstein, Allan L.[*]; Naylor, P.H.[*]; Sarin, P.S.[1]; Kirkley, J.E.[*]; Stambuk, D.[2]; Rios, A.[3]; [*]George Washington Univ. Med. Ctr., Washington, DC USA; [1]NIH, Bethesda, MD, USA; [2]Southwest Memorial Hosp., Houston, TX, USA; [3]St. Stephen's Hosp., London, UK.

4:30 S.A.77
NEUTRALIZING ANTIBODIES EFFECTIVE AGAINST MULTIPLE HIV-1 ISOLATES SPECIFIC FOR CONFORMATIONAL-DEPENDENT EPITOPES IN HIV-1 gp120. Steimer, Kathelyn S.; Skiles, P.; Scandella, C.; Doe, B.; Haigwood, N.; Chiron Corp., Emeryville, CA, USA.

4:45 S.A.78
PROTECTION AGAINST HIV-2 IN VACCINATED CYNOMOLGUS MONKEYS. Biberfeld, Gunnel[*]; Putkonen, P.[*]; Thorstensson, R.[*]; Albert, J.[*]; Akerblom, L.[1]; Morein, B.[1]; [*]National Bacteriological Laboratory, Stockholm, [1]Department of Vet. Virology, Uppsala University, Uppsala, Sweden.

5:00 S.A.79
A RECOMBINANT HIV-1 ENVELOPE PROTEIN VACCINE INDUCES CD4+ HUMAN CYTOLYTIC T LYMPHOCYTES (CTL) ACTIVE AGAINST HIV-1 INFECTED CELLS. Siliciano, Robert; Orentas, R.; Hildreth, J.; Obah, E.; Gebo, K.; Clements, M.L.; Ellerbeck, E.; Johns Hopkins Univ., Baltimore, USA.

5:15 S.A.80
VACCINATION WITH A LIVE RETROVIRUS: THE ROLE OF T-CELL SUBSETS. Ruprecht, Ruth M.[*,1]; Hom, R.C.[*,1]; Sharma, P.[*,1]; Finberg, R.W.[*,1]; Mullaney, S.[*]; Bernard, L.D.[*]; [*]Dana-Farber Cancer Institute and [1]Harvard Univ., Boston, USA.

SATURDAY, 23 JUNE / 3:30–5:30 PM
TRACK B: CLINICAL SCIENCE & TRIALS

B11 *Moscone, Room B*

Abstract Session: Resistance to Anti-Retrovirals

Chairs: Douglas D. Richman (USA)
Mark A. Wainberg (Canada)

3:30 S.B.81
QUANTITATION OF AZT-RESISTANT HIV-1 IN THE BLOOD OF TREATED AND UNTREATED PATIENTS. Mohri, Hiroshi; Ching, W.T.W.; Chang, H.E.; Alam, M.; Ho, D.D.; Cedars-Sinai Med. Ctr., UCLA Sch. of Med., LA, CA, USA.

3:45 S.B.82
ZIDOVUDINE SUSCEPTIBILITY AMONG ASYMPTOMATIC HIV+ PERSONS. St. Clair, Marty H.*; Waskin, H.†; King, D.M*; Bartlett, J.A.†; *Wellcome Res. Labs, Research Triangle Park, NC, †Duke U. Med. Ctr., Durham, NC, USA.

4:00 S.B.83
DRUG SENSITIVITY AND BIOLOGICAL PHENOTYPE OF SERIAL HIV ISOLATES FROM ZIDOVUDINE TREATED ASYMPTOMATIC INDIVIDUALS. Boucher, Charles A.B.*; Tersmette, M.†; Lange, J.M.A.‡; Kellam, P.||; De Goede, R.E.Y.‡; Darby, G.||; Goudsmit, J.*; Larder, B.A.||; *Human Retrovirus Lab. and ‡Academic Med. Ctr., Amsterdam, The Netherlands, †Central Lab Blood Transf. Svc., Amsterdam, The Netherlands, ||Wellcome Res. Labs, Beckenham, UK.

4:15 S.B.84
CLINICAL SIGNIFICANCE OF IN-VITRO HIV RESISTANCE TO AZT IN EARLY HIV-INFECTED INDIVIDUALS—RESULTS FROM THE MULTICENTRE CANADIAN AZIDOTHYMIDINE TRIALS (MCAT). Montaner, Julio S.G.; Ruedy, J.; Fanning, M.; Tsoukas, C.; Falutz, J.; Le, T.; Schechter, M.T.; O'Shaughnessy, M.; Wainberg, M.; St. Paul's Hospital, University of British Columbia, Vancouver, BC, Canada.

4:30 S.B.85
CHARACTERISATION OF SENSITIVE AND RESISTANT STRAINS OF HIV TO AZT IN A COHORT OF PATIENTS AT THE LONDON HOSPITAL. Broadhurst, Katrina; Levantis, P.; Ball, A.; Muckenthaler, M.; Gunkel, N.; Goh, B.T.; Forster, G.E.; Colvin, B.; Dourmashkin, R.; Oxford, J.S.; Jackson, G.G.; London Hosp. Med. Coll., London, UK.

4:45 S.B.86
AZT AND INTERFERON-ALPHA SUSCEPTIBILITIES CORRELATE WITH TREATMENT DURATION AND RESPONSE. Edlin, Brian R.*; Weinstein, R.A.†; Whaling, S.M.†; Connolly, P.J.†; Bitran, J.D.†; *CDC, Atlanta, GA, †Michael Reese Hosp., Chicago, IL, USA.

5:00 S.B.87
CHARACTERIZATION OF AZT-RESISTANT ISOLATES OF HIV-1: SUSCEPTIBILITY TO DEOXYTHIACYTIDINE AND OTHER NUCLEOSIDES. Wainberg, Mark A.; Rooke, R.; Tremblay, M.; Yao, X.-J.; Gao, Q.; Stern, M.; Belleau, B.; Jewish Gen. Hosp., McGill U., IAF Biochem, Montreal, Canada.

5:15 S.B.88
PRIMARY HIV-1 ISOLATES ARE RELATIVELY RESISTANT TO NEUTRALIZATION BY RECOMBINANT SOLUBLE CD4. Daar, Eric S.; Li, X.L.; Moudgil, T.; Ho, D.D.; Cedars-Sinai Med. Ctr., UCLA Sch. of Med., LA, CA, USA.

B12 *Marriott, Presidio*

Symposium: Oral and Gastrointestinal Mucosal Disease

Chairs: Deborah Greenspan (USA)
Giuseppe Ficarra (Italy)

3:30 S.B.89
DIAGNOSTIC AND PROGNOSTIC SIGNIFICANCE OF ORAL LESIONS. Schiodt, Morten; University of Copenhagen, Copenhagen, Denmark.

3:50 S.B.90
ROLE OF EPSTEIN-BARR VIRUS IN HAIRY LEUKOPLAKIA. Greenspan, John; University of California, San Francisco, CA, USA.

4:10 S.B.91
UNUSUAL ORAL ULCERATION. Langford, Angelika; Department of Oral Surgery, Free University of Berlin, Berlin, FRG.

4:30 S.B.92
ETIOLOGY AND MANAGEMENT OF GASTROINTESTINAL ULCERATION. Kotler, Donald; St. Luke's-Roosevelt Medical Center, New York, NY, USA.

4:50 S.B.93
CHALLENGES PRESENTED BY PERIODONTAL DISEASE. Grassi, Markus; University of Bern, Switzerland.

5:10 S.B.94
ORAL AND GASTROINTESTINAL CANDIDIASIS. Powderly, William; Washington University School of Medicine, St. Louis, MO, USA.

SATURDAY, 23 JUNE / 3:30–5:30 PM
TRACK C: EPIDEMIOLOGY & PREVENTION

C11 *Moscone, Room A*

Abstract Session: HIV Testing: Counseling and Partner Notification

Chairs: Vadim Pokrovsky (USSR)
Michael Rekart (Canada)

3:30 S.C.97
HIV ANTIBODY TESTING IN FRANCE, RESULTS OF A NATIONAL SURVEY. Quenum, Brigitte; Valleron, A. J.; Wells, J.; Centre Cooperateur de Donnees sur l'Epidemiology del'Immunodeficience Humaine, Inserm SC4 et U263, Paris, France Center for Health Affair, Project Hope, Chevy Chase, Maryland, USA.

3:45 S.C.98
TRENDS IN PEDIATRIC HIV-1 SEROPOSITIVITY AND THE RISK OF BLOOD TRANSFUSIONS, KINSHASA, ZAIRE. Shaffer, Nathan*; Hedberg, K.*; Davachi, F.†; Bilenge, M.‡; Breman, J.*; Masisa, O.†; et al.; *Centers for Disease Control, Atlanta, GA, USA, †Mama Yemo Hospital, Kinshasa, Zaire, ‡Ministry of Health, Kinshasa, Zaire, Projet SIDA, Kinshasa, Zaire.

4:00 S.C.99
AN ANALYTIC DECISION MODEL OF HIV SCREENING AND INTERVENTION, WITH AN EXAMPLE APPLICATION: ANALYSIS OF SCREENING POLICIES TO REDUCE HIV TRANSMISSION TO NEWBORNS. Brandeau, Margaret L.*; Lee, H.L.*; Owens, D.K.*; Sox, C.H.*; Wachter, R.M.†; *Stanford University, Stanford, CA, †University of California, San Francisco, CA, USA.

4:15 S.C.100
PREVENTION OF HIV INFECTION IN GREEK REGISTERED PROSTITUTES: A FIVE YEAR STUDY. Roumeliotou, Anastasia; Papoutsakis, G.; Kallinikos, G.; Nestoridou, K.; Papaevangelou, G.; AIDS Reference Centre, Athens School of Hygiene, Athens, Greece.

4:30 S.C.101
TO BE OR NOT TO BE TESTED? RACIAL, ETHNIC AND SEXUAL ORIENTATION DIFFERENCES IN OBTAINING HIV ANTIBODY TESTING AND RECEIVING TEST RESULTS. Peterson, John L.; Coates, T.J.; Catania, J.; Kegeles, S.; Drues, J.; Fullilove, M.; Hulley, S.; UCSF Center for AIDS Prevention Studies (CAPS), San Francisco, CA, USA.

4:45 S.C.102
DISCLOSURE OF HIV-ANTIBODY TEST RESULTS, REACTIONS, AND REASONS FO & NON-DISCLOSURE. Stempel, Robert; Moulton, J.; Moss, A.R.; UC San Francisco, CA, USA.

5:00 S.C.103
PATIENT REFERRAL OR PROVIDER REFERRAL PARTNER NOTIFICATION: WHICH DO PATIENTS PREFER? Pengelly, B.; Rekart, M.L.; Knowles, Linda; Spencer, D.; British Columbia Centre for Disease Control, Vancouver, BC, Canada.

5:15 S.C.104
THE IMPACT OF PARTNER NOTIFICATION ON SEXUAL BEHAVIOR AMONG A HETEROSEXUAL POPULATION. Ramirez, Guadalupe; Avila, C.; Herrera, E.; Hernandez, M.; Sepulveda, J.; Directorate of Epidemiology, Secretariat of Health, Mexico.

C12 *Moscone, Room G*

Panel Discussion: Sexual Transmission of HIV Infection

Chair: Maria E. L. Fernandes (Brazil)
Moderator: Nancy Padian (USA)

3:35 S.C.105
THE ASSOCIATION BETWEEN STD'S AND HIV: MARKER OR CO-FACTOR. Laga, Marie; CDC, Atlanta, GA, USA.

3:45 S.C.106
HIV INFECTION AS AN STD: SCIENTIFIC AND POLICY IMPLICATIONS. Holmes, King K.; World Health Organization, Geneva Switzerland.

3:55 S.C.107
EPIDEMIOLOGY OF HIV IN TYPE I AND TYPE II COUNTRIES. Nzila, Nzilambi; Projet SIDA, Kinshasa, Zaire.

4:05 S.C.108
TRANSMISSION DYNAMICS OF HIV. Stanley, Ann; Los Alamos National Laboratory, Los Alamos, NM USA.

4:15 S.C.109
CURRENT TRENDS IN THE EPIDEMIOLOGY OF HIV AMONG HOMOSEXUAL MEN. Winkelstein, Warren; University of California, Berkeley, CA, USA.

4:25 S.C.110
THE BRITISH SURVEY OF SEXUAL ATTITUDES AND LIFESTYLES—METHODOLOGY AND PROGRESS IN A STUDY OF 20,000 ADULTS. Field E. J.*; Johnson, Anne M.†; Wadsworth, J.‡; Wellings, K.‡; Bradshaw, S. A.‡; et al.; *SCPR, †University College and Middlesex Schl. of Med., ‡St. Mary's Med. Schl., Imperial College, London, UK.

4:35
DISCUSSION.

SATURDAY, 23 JUNE / 3:30–5:30 PM
TRACK D: SOCIAL SCIENCE & POLICY

D11 *Moscone, Room F*

Panel Discussion: Parallel Track

Chair: Michele Brill-Edwards (Canada)
Moderator: Neil Schram (USA)

3:35 S.D.113
HISTORY AND OBJECTIVES OF THE PARALLEL TRACK. Allen, James R.; U.S. Department of Health and Human Services, Washington, DC, USA.

3:45 S.D.114
REGULATORY ISSUES. Cooper, Ellen; US Food and Drug Administration, Rockville, MD, USA.

3:55 S.D.115
INDUSTRY CONCERNS AND INITIAL EXPERIENCE. Carter, Stephen; Bristol Myers–Squibb Company, Wallingford, CT, USA.

4:05 S.D.116
ETHICAL ISSUES. Novick, Alvin; Department of Biology, Yale University, New Haven CT, USA.

4:15 S.D.117
ISSUES OF ACCESS AND AVAILABILITY FOR WOMEN AND PEOPLE OF COLOR. St. Cyr-Delphe, Marie; Executive Director, Women and AIDS Resource Network, Brooklyn, NY, USA.

4:25 S.D.118
PERSONAL PERSPECTIVE OF A PERSON WITH AIDS. Lipner, Jay; New York, NY, USA.

4:35
DISCUSSION.

D12 *Moscone, Room H*

Abstract Session: Drug Use—Public Policy Issues

Chairs: Lawrence S. Brown (USA)
Enrico Tempesta (Italy)

3:30 S.D.121
RACIAL AND GEOGRAPHIC DIFFERENCES IN RISK BEHAVIORS OF INTRAVENOUS DRUG USERS. Young, Paul*; Snyder, F.*; Friedman, S.†;Myers, M.*; *NOVA Research Company, Bethesda, MD, †Narcotic & Drug Research, Inc., New York, NY, USA.

3:45 S.D.122
LITTLE CHANGE IN SEXUAL BEHAVIOR IN DRUG USERS IN AMSTERDAM. Coutinho, R.A.; van den Hoek, Anneke; Van Haastrecht, H.J.A.; Municipal Health Service, Amsterdam, The Netherlands.

4:00 S.D.123
DRUG USE AND SEXUAL BEHAVIORS IN A PROBABILITY SAMPLE OF SINGLE ADULTS LIVING IN "HIGH RISK" NEIGHBORHOODS OF SAN FRANCISCO, CA: THE AMEN STUDY. Fullilove, Robert; Fullilove, M.; Golden, E.; Bowser, B.; Hulley, S.; University of California, San Francisco, Center for AIDS Prevention Studies (CAPS) and/or Multicultural Inquiry and Research on AIDS, Bayview Hunter's Point Foundation, San Francisco, CA, USA.

4:15 S.D.124
THE RELATIONSHIP BETWEEN CRACK COCAINE USE AND OTHER RISK FACTORS AMONG WOMEN IN A NATIONAL AIDS PREVENTION PROGRAM—US, PUERTO RICO, AND MEXICO. Weissman, Gloria*; Sowder, B.†; Young, P.†; *National Institute on Drug Abuse, Rockville, MD, †NOVA Research Company, Bethesda, MD, USA.

4:30 S.D.125
METHADONE MAINTENANCE PROGRAMMES AND AIDS IN NORTH ITALY. Serraino, Diego, Franceschi, S.; Epidemiology Unit, Aviano Cancer Centre, Aviano (PN), Italy.

4:45 S.D.126
CORRELATES OF HIV RISK REDUCTION AMONG IVDUs. Calsyn, Donald A.; Saxon, A.; Freeman Jr., G.; VA Medical Center and Dept. of Psychiatry and Behavioral Sciences, University of Washington, Seattle, WA, USA.

5:00 S.D.127
ALMOST BANNING BLEACH: AN EMPIRICAL STUDY OF AIDS POLICY DEVELOPMENT IN THE US. Des Jarlais, Don C.*; Bailey, W.†; *Beth Israel Medical Center, New York, NY, †American Psychological Association, Washington, DC, USA.

5:15 S.D.128
SESSION SUMMARY. Brettle, Raymond; City Hospital, Edinburgh, Scotland.

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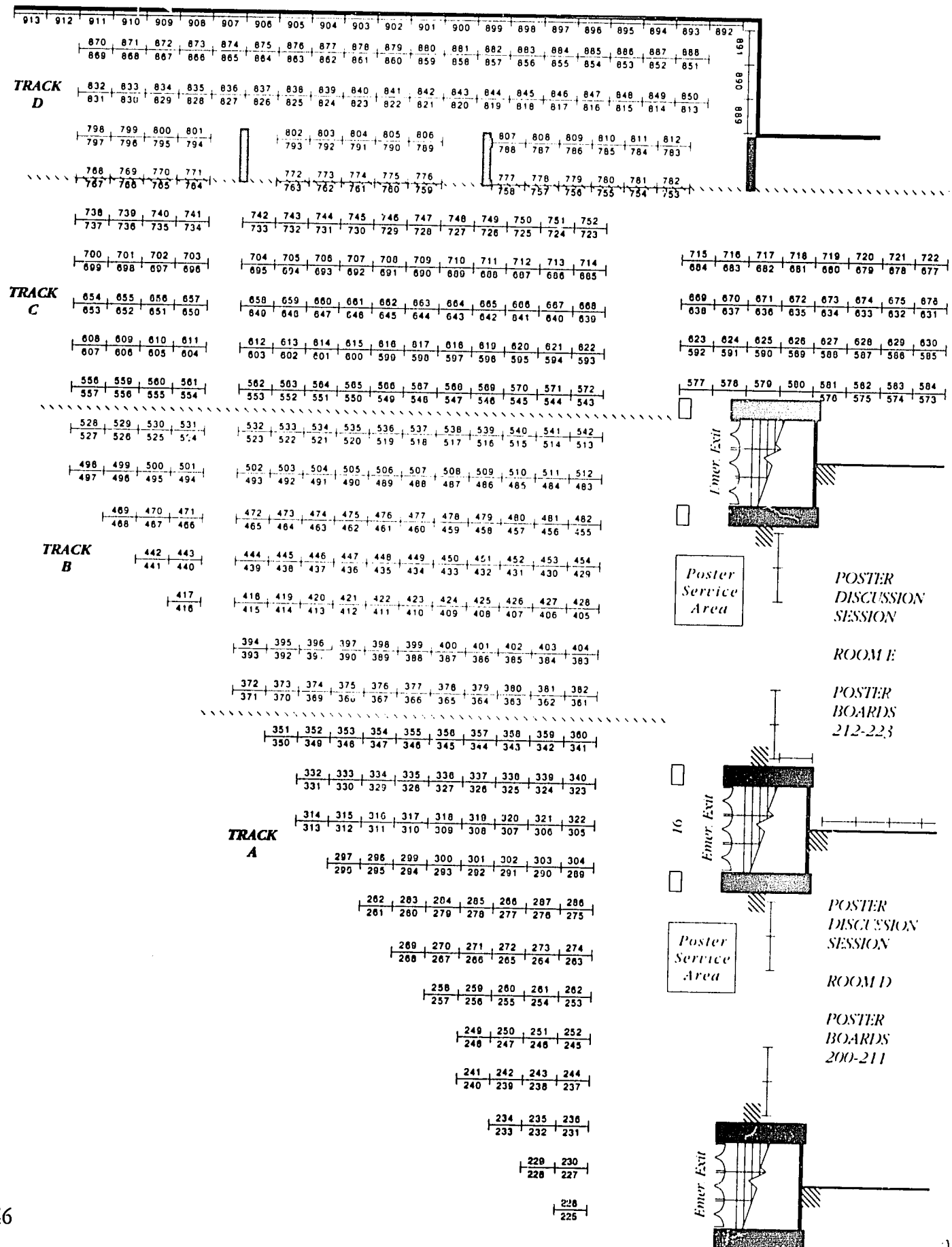
POSTER AREA
MOSCONE/LOWER AREA



POSTER PRESENTATIONS
SATURDAY, JUNE 23

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Determinants of Risk Behavior: Drug Users (cont. from Friday)	543–561
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HIV Testing: HIV-1 Testing Strategies	586–594
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Models for Behavior Change: Sexual Transmission	677–689
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Pediatric HIV Infection—Neurodevelopment and Laboratory Diagnosis	200–211
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SATURDAY, 23 JUNE / 11:30 AM–12:30 PM
TRACK B: CLINICAL SCIENCE & TRIALS
MOSCONE, ROOM D

Poster Discussion: Pediatric HIV Infection—Neurodevelopment and Lab Diagnosis
Chairs: Anita Belman (USA), John F. Modlin (USA)

S.B.200
NEURODEVELOPMENTAL OUTCOME OF PERINATALLY ACQUIRED HIV INFECTION ON THE FIRST 15 MONTHS OF LIFE. Hittelman, Joan*, Willoughby, A.†, Mendez, H.*, Nelson, N.*, Gong, J.*, Holman, S.*, Goedert, J.*, Landesman, S.*; *SUNY, Health Science Center at Brooklyn, N.Y., †National Institutes of Health, Bethesda, MD, USA.

S.B.201
DEVELOPMENTAL PATTERNS OF INFANTS WITH PERINATALLY ACQUIRED HIV INFECTION (PI). Kabagabo, Uwa*; Braden, K†; Binyingo, M‖; Manzila, T*; Zola, B*; Ryder, R.*/†.; *Projet SIDA, Kinshasa; †New England Medical Center, Boston, Mass.; USA; ‡CDC, Atlanta, GA. ‖Clinique Ngaliema, Kinshasa.

S.B.202
THE USE OF VIDEOTAPED BEHAVIOR SAMPLES OF PEDIATRIC AIDS PATIENTS TO EVALUATE PSYCHOSOCIAL CHANGES ASSOCIATED WITH ENCEPHALOPATHY BEFORE AND AFTER TREATMENT. Moss, Howard; Wolters, P.; El-Amin, D.; Butler, K.; Brouwers, P.; Pizzo, P.; National Cancer Institute, Pediatric Branch, Bethesda, Maryland, USA.

S.B.203
DEVELOPMENTAL ABNORMALITIES IN UNINFECTED INFANTS BORN TO HIV INFECTED MOTHERS. Koch, Thomas*; Jeremy, R.*; Lewis, E.*; Kletter, R.†; Rumsey, C.*; Esker, S.*; Weintrub, P.*; Cowan, M.*; *University of California, San Francisco, California, USA. †FACET, San Francisco, California, USA.

S.B.204
CEREBROSPINAL FLUID INVESTIGATIONS IN HIV-1-INFECTED CHILDREN. Laverda, Anna Maria*; Gallo, P.+; De Rossi, A.*; Rampazzo, M.*; Chieco Bianchi, L.*; Tavolato, B.+; *Dept. of Pediatrics; +Institute of Neurology (Clinica Neurologica II); and *Institute of Oncology, University of Padua-School of Medicine, Pavoda, Italy.

S.B.205
THE EFFECT OF 2'3' DIDEOXYINOSINE (DDI) ON THE COGNITIVE FUNCTIONING OF INFANTS AND CHILDREN WITH SYMPTOMATIC HIV INFECTION. Wolters, Pamela; Brouwers, P.; Moss, H.; El-Amin, D.; Eddy, J.; Butler, K.; Husson, R.; Pizzo, P.; National Cancer Institute, Pediatric Branch, Bethesda, Maryland, USA.

S.B.206
DETECTION OF IGA HIV ANTIBODIES FOR DIAGNOSIS OF HIV-INFECTED INFANTS. Weiblen, Barbara*; McIntosh, K.†; Pelton, S.‡; Landesman, S.‖; Nahmias, A.#; Hoff, R.*.; *Massachusetts State Laboratory/TSRI, †Children's Hospital, ‡Boston City Hospital, Boston, MA, USA; ‖Kings County Hospital, New York, NY, USA; #Emory University School of Medicine, Atlanta, GA, USA.

S.B.207
VIROLOGICAL FOLLOW UP OF CHILDREN BORN TO HIV1 INFECTED MOTHERS: VIRUS ISOLATION, ANTIGENAEMIA AND PCR. Fleury H.J.A.*, Douard D.*, Chapel A.†, Perel Y.*, Micheau M.*, Contraires B.‡; *Centre Hospitalier Regional et Universite de Bordeaux II, Bordeaux, France. †Centre a l'Energie Atomique, Fontenay aux Roses, France. ‡Centre Hospitalier de la Cote Basque, Bayonne, France.

S.B.208
DIAGNOSIS OF PERINATALLY ACQUIRED HIV INFECTION. Kesson, Alison; Miles, S.; Diagne, A.; Chen, I.; Stiehm, E.R.; Frenkl, L.; Bryson, Y.; UCLA School of Medicine, Los Angeles, CA, USA.

S.B.209
T-CELL SUBSETS IN CORD BLOOD OF INFANTS BORN TO HIV INFECTED MOTHERS (SPM) AND INFANTS BORN TO HIV SERONEGATIVE MOTHERS (SNM): RELATIONSHIP TO MATERNAL T CELL SUBSETS AND HIV CLINICAL STATUS. A PROSPECTIVE STUDY. Brown, Christopher* †; Lubaki, N.†; Devachi, F.‡; Ryder, R.†; Quinn, T.* ‖; Fauci, A.S.*; *NIAID, NIH, Bethesda, MD; † Projet SIDA, Kinshasa, Zaire, ‡Mama Yemo Hospital, Kinshasa, Zaire, ‖Johns Hopkins Hospital, Baltimore, MD, USA.

S.B.210
T-CELL PARAMETERS BY AGE IN NORMAL AND HIV-INFECTED CHILDREN. O'Rourke, Sheryl A., Plaeger-Marshall S., Gillespie, S., Frenkel, L., Deveikis, A., Berkowitz, C.; Los Angeles Pediatric AIDS Consortium, UCLA, Dept. of Pediatrics, Los Angeles, CA, USA.

S.B.211
VIROLOGIC CHARACTERIZATION OF HIV INFECTION IN CHILDREN: A COMPARISON OF P24 ANTIGEN TO HIV CULTURES AND PCR. Robb, Merlin L.*; Dillworth, S.†; Fowler, A.‡; Bash, M.*; Ascher, D.‖; Redfield, R.†; Burke, D.†; Pettett, G.‖; Fischer, G.‖; *Walter Reed Army Medical Center, †Walter Reed Army Institute of Research, Washington, DC, USA; ‡SRA Laboratories, Rockville, MD, USA; ‖USUHS, Bethesda, MD, USA.

The posters listed above will be up for viewing all day. Please review the posters before the session begins to take maximum advantage of the discussion.

SATURDAY, 23 JUNE / 11:30 AM–12:30 PM
TRACK C: EPIDEMIOLOGY & PREVENTION
MOSCONE, ROOM E

Poster Discussion: HIV Testing—Test Performance
Chairs: Jose Esparza (WHO), Oscar Fay (Argentina)

S.C.212
RAPID AND SPECIFIC DIAGNOSIS OF HIV-1 AND HIV-2 INFECTIONS IN ABIDJAN, COTE D'IVOIRE. Maran Mathieu*, Kouadio J*, Porter A*, Lafontaine M-F*, Damet G†, Bretton G†, Odehouri K†, George R‡, De Cock KM.* ‡; †Comite National de Lutte Contre le SIDA; ‡Centers for Disease Control, Atlanta.

S.C.213
OPERATIONAL CHARACTERISTICS OF COMMERCIALLY AVAILABLE ASSAYS TO DETERMINE ANTIBODIES TO HIV-1 AND/OR HIV-2 IN HUMAN SERA. Guido van der Groen*, Van Kerckhoven I*., Vercauteren G*., Piot P*., Esparza J†., Tamashiro H‡; *Institute of Tropical Medicine, Antwerp; †Global Programme on AIDS (GPA), World Health Organization (WHO), Geneva.

S.C.214
EVALUATION OF SCREENING U.S. BLOOD DONATIONS FOR HIV-ANTIGEN. Ward, John*, Alter, H.†, Epstein, J.‡, Van Raden, M.†, Swenson, S.‖, Chernoff, A.‖; *Centers for Disease Control, Atlanta, GA; †National Institutes of Health, Bethesda, MD; ‡Food & Drug Administration, Bethesda, MD; ‖American Association of Blood Banks, American Red Cross and Council of Community Blood Centers, USA.

S.C.215
WIDE DIVERGENCE OF DIFFERENT HIV WESTERN BLOT INTERPRETATION STANDARDS IN LOW-POSITIVE SERA. Schupbach, Jorg, Tomasik, Z., Boni, J.; Swiss National Center for Retroviruses (SNCR), University of Zurich, Zurich, Switzerland.

S.C.216
FULL-LENGTH RECOMBINANT ENV AND GAG PROTEINS SEEM TO BE SAFER THAN PEPTIDES FOR HIV TESTING. Gadelle Stephane, Quesneau, Y.; Crabbe, C.; Monteiro, F.; Lesieur, C.; Delagneau, J.F.; Diagnostics Pasteur, 94230 Marnes la Coquette, France.

S.C.217
LACK OF SHORT-TERM VARIATION HIV-1 PROVIRAL LOAD AND OTHER SEROLOGIC AND IMMUNOLOGIC MARKERS DURING ASYMPTOMATIC INFECTION. Reis, Myrian*; Lee, T-H*; Sunzeri, F*; El Amad, Z*; Crutcher, G*; Nason, M*; Shepard, H†; Vyas, G‡; and Busch, M*, ‡; *Irwin Memorial Blood Centers, and ‡University of California, San Francisco, California USA; †Viral and Rickettsial Disease Laboratory, Berkeley California USA.

S.C.218
SENSITIVITY AND SPECIFICITY OF GENE AMPLIFICATION (PCR) FOR HIV-1 DNA:: A MULTI-CENTER STUDY. Madej, Roberta*, Chimera, J.†, Stanley, M.†, Eble, B.†, Sheppard, H.W.†, Winkelstein, W.†; *Roche Diagnostic, Alameda, CA; Roche Biomedical, Research Triangle Park,NC;†The Universities of California at San Francisco and Berkeley, CA; and the California Department of Health Services, Berkeley, CA; USA.

S.C.219
DETECTION OF HIV ANTIBODIES USING DRIED BLOOD SPOTS COLLECTED ON FILTER PAPER FROM NEONATES IS ACCURATE UNDER TROPICAL CONDITIONS IN ZAIRE. Kashamuka, Mwandagalirwa*; Pappaioanou, M.†; Behets, F.*/‡; Ilunga, M.*; Heyward, W.†; Ryder, R.*/†; *Project SIDA, Kinshasa, Zaire; †CDC, Atlanta, GA; ‡ Institute of Tropical Medicine, Antwerp, Belgium.

S.C.220
HIV-1 AND OTHER ETIOLOGIES OF INDETERMINATE HIV-1 WESTERN BLOTS. Celum, Connie*; Coombs, R.W.*; Lafferty, W.E.†; Fisher, L.D.*; Inue, T.S.*; Holmes, K.K.*; *University of Washington, †DSHS AIDS Office, Seattle, WA, USA.

S.C.221
ANALYTIC SENSITIVITY AND SPECIFICITY OF ENZYME IMMUNOASSAY RESULTS IN TESTING FOR HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1) ANTIBODY. Cross, George D., Schalla, W.O., Hearn, T.L., Blumer, S.O., Taylor, R.N., Valdiserri, R.O.; Centers for Disease Control (CDC), Atlanta, GA, USA.

S.C.222
DETECTION OF ANTIBODIES TO HIV-1 AND HIV-2 BY A SINGLE, RAPID PEPTIDE-BASED IMMUNOASSAY. Montana, J.P.; Gosting, L.; Cole, C.A.; Monji, N.; Su, P.; Coleman, Patrick F.; Genetic Systems Corporation, Seattle, Washington, USA.

S.C.223
FIELD EVALUATION OF TWO SIMPLE/RAPID TEST KITS FOR THE DETECTION OF HIV-I ANTIBODIES. Zewdie D.*, Fassil Ketema*, Tadesse M.* & Tamash iro H.†; *National Research Institute of Health, Addis Ababa, Ethiopia; † Global Programme on AIDS, WHO.

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Co-Factor Studies, in vitro,

S.A.225
CYTOMEGALOVIRUS (CMV) INDUCES HIV TRANSCRIPTIONAL ACTIVITY IN HUMAN FIBROBLASTS. McCormack, Myra H., Azad, R.F., Rosen, J.I.; R.W. Johnson Pharmaceutical Research Institute, La Jolla, CA, USA.

S.A.226
ACTIVATION OF HUMAN IMMUNODEFICIENCY VIRUS IN HUMAN MYELOID CELLS BY COCAINE. Lai, Patrick, Takayama, H., Tamura, Y., Nonoyama, M.; Laboratory of Virology, Tampa Bay Research Institute, St. Petersburg, FL, USA.

S.A.227
HETEROLOGICAL LEUKOCYTE-INDUCED REACTIVATION OF HIV-1: IMPLICATIONS FOR TRANSFUSION SUPPORT OF INFECTED PERSONS. Busch, Michael*,†, Endow, R.*, Lee, T. -H.*, Sunzeri, F.*, Louie, L.†, Adams, M.*, Perkins, H.*,†, Vyas, G.†; *Irwin Memorial Blood Centers, †University of California, San Francisco, †University of California, Berkeley, CA, USA.

S.A.228
HEPATITIS B VIRUS DNA IN MONONUCLEAR CELLS-A POTENTIAL CO-FACTOR OF HIV INFECTION. Farr, R. Wesley*; Siddiqui, A.*; Judson, F.†; Penley, K.†; University of Colorado*; Denver Disease Control Service†; Denver, Co, USA.

S.A.229
THE ROLE OF DNA BINDING MOTIFS IN TRANSACTIVATION OF THE HIV LONG TERMINAL REPEAT (LTR) BY HERPES SIMPLEX VIRUS TYPE 1 (HSV-1). Margolis, David M.*, Parrott, C.†, Leonard, J.†, Rabson, A.†, Ostrove, J.*; *Laboratories of Clinical Investigation and †Molecular Microbiology, NIAID, National Institutes of Health, Bethesda, MD, USA.

S.A.230
THE EPSTEIN BARR VIRUS (EBV) BZLF1 GENE PRODUCT ACTIVATES THE HIV-1 5' LTR. Borkowski, Joseph A.; Albin, Randi; Schwartz, Jerome; Mallon, Robert.; Schering Research, Bloomfield, New Jersey, USA.

S.A.231
DETECTION OF EPSTEIN-BARR VIRAL SEQUENCES IN BENIGN LYMPH NODE BIOPSIES FROM HIV INFECTED PATIENTS AND THE ASSOCIATION WITH LYMPHOMA. Shibata, Darryl; Nathwani, B; Brynes, R.: Levine A.; *University of Southern California, Los Angeles, California, USA.

S.A.232
INHIBITION OF PROTEIN KINASE C AND CD3-MEDIATED INTRACELLULAR CALCIUM INFLUX OF T LYMPHOCYTES BY A SYNTHETIC PEPTIDE WITH SEQUENCE IDENTITY TO HIV-1 TRANSMEMBRANE PROTEIN GP41. Ruegg, Curtis L. and Strand, M.; Dept. of Pharmacology and Molecular Sciences, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA.

Cellular Immunity: Host Abnormalities

S.A.233
PREFERENTIAL INFECTION OF CD4+ MEMORY T CELLS BY HIV-1 AND ITS ROLE IN SELECTIVE T CELL FUNCTIONAL DEFECTS. Schnittman, Steven M*, Lane HC*, Greenhouse JJ* Justement*, Baseler M†, and Fauci AS*;: *LIR, NIAID, Bethesda, MD USA, †PRI, Frederick, MD, USA.

S.A.234
CD4+2H4+ AND CD4+4B4+ LYMPHOCYTES IN DIFFERENT STAGES OF HIV INFECTION. Poggio, Marina; Galli, M.+; Gallo, L.; Riva, A.+; Guarnieri, P.; Albarello, V.+; Ridolfo, A.L.+; Rus coni, S.+.; Transfusion Unit, +Infectious Diseases Clinic, L. Sacco Hospital, Milan, Italy.

S.A.235
PHENOTYPIC AND FUNCTIONAL ANALYSIS OF AN ELEVATED SUBPOPULATION OF GAMMA DELTA T CELLS IN THE PERIPHERAL BLOOD OF AIDS PATIENTS. Baseler, Michael W.*, Budzyn, C.*, Adelsberger, J.*, Lane, H.†; *Program Resources, Inc. (PRI), Frederick, MD; †LIR, NIAID, National Institutes of Health, Bethesda, MD; USA.

S.A.236
THE ONTOGENY OF UCHL1 EXPRESSION ON T-CELLS IN PAEDIATRIC HIV INFECTION. Karin Froebel, Kathleen Docherty, J Mok*, R Hague* and G Bird; HIV Immunology Unit, University Dept of Medicine and *Infectious Diseases Unit, City Hospital, Edinburgh, U.K.

S.A.237
DISCORDANT EXPRESSION OF T CELL ACTIVATION MARKERS (HLA-DR, CD38, CD25, CD69) AS INDICATORS OF CELLULAR IMMUNE RESPONSE TO HIV INFECTION. Grenier, Kathy*; Bach, B.A.*; Campbell, D.*; Ullery, S.*; Borowitz, M.J.†; *Becton Dickinson Immunocytometry Systems, San Jose, CA; †Duke Univ. Med. Center, Durham, NC.

S.A.238
FLOW CYTOMETRIC EVALUATION OF CD8+ CELL SUBSETS IN HIV-INFECTED INDIVIDUALS. Landay, Alan, Mackewicz, C.E.*, Levy, J.A.*; Rush Medical Center, School of Medicine, Chicago, IL, USA, *University of California, School of Medicine, San Francisco, CA, USA.

S.A.239
TAC INHIBITORY FACTOR (P29) PRODUCED BY HIV-INFECTED PATIENTS' ADHERENT CELLS: EFFECT ON T CELL PROLIFERATION. Ammar, A.; Bertoli, A.M.; Sahroui, Y.; Cibert, C.; Jasmin, C. Georgoulias, V.; Inserm U268, Hopital Paul Brousse, 94804 Villejuif, France.

S.A.240
FUNCTION AND STRUCTURE OF IL2-R EXPRESSED ON HIV PATIENTS T CELLS. Sahraoui Yasmine; Villejuif, France.

S.A.241
HIV-1 INFECTION OF HUMAN FETAL THYMOCYTES MAY ALTER EXPRESSION OF DIFFERENTIATION MARKERS. Hatch, William C.; Tanaka, K.E.; Calvelli, T.; Rashbaum, W.K.; Kress, Y.; Lyman, W.D.; Albert Einstein College of Medicine, Bronx, NY, USA.

S.A.242
BINDING OF GP120 DOES NOT INHIBIT CD3 MEDIATED T CELL STIMULATION. Bettens Florence, Pichler C.E., de Week A.L. and Pichler W.J.; Institute for Clinical Immunology, Inselspital, Bern, Switzerland.

S.A.243
CYTOLYTIC T CELLS TO PNEUMOCYSTIS CARINII INFECTED MACROPHAGES. Forte, Miguel*,†; Pithie, A.*,†; Rahelu, M.†; Stubberfield, C.†; Kumararatne, D.†; Geddes, A.*; *East Birmingham Hospital, Birmingham, England; †Medical School, Univ. of Birmingham, Birmingham, England; ‡Wellcome Research Labs., Beckenham, England.

S.A.244
TNF AND IL-1 RELEASE BY ALVEOLAR MACROPHAGES IS NORMAL IN HIV INFECTED PATIENTS. Israel-Biet, Dominique; Jeffrey, A.A; Gillet-Juvin, K; Danel, C; Andrieu, J.M; Even, P.; HIV Study Group, Laennec Hospital, Paris, FRANCE.

S.A.245
HIV GP41 AND GP120 SYNTHETIC PEPTIDES INFLUENCES NORMAL PRODUCTION OF CYTOKINES. Cauda R., Tumbarello M., Ortona L., Kennedy R.C.*, Chanh T.C.*, Tyring S.K.+, Kanda P.*; Clinica Malattie Infettive-Universita Cattolica-Roma-Italy, Dept. Virology and Immunology, *Southwest Foundation San Antonio TX, +Dept. of Microbiology UTMB, Galveston TX.

S.A.246
ALTERED PRODUCTION OF TNF-α AND IFN-γ BY HIV INFECTED PATIENTS. Matear Patricia*; Meager, A†; Beverly, P.C.*; Weller, I.V.*; Kelly, G.*; Gill, S.*; Wahren, B‡; Vyakarnam, A.*; *UC & Middlesex School of Medicine; †National Bacteriological Laboratory, Stockholm, Sweden; ‡NIBSC, Potters Bar, UK.

S.A.247
INCREASED SPONTANEOUS ENZYME DEGRANULATION OF NEUTROPHILS IN HIV-1 INFECTED PATIENTS. Petri, Uta, Hoffken, G., Dzwillo, G., Lode, H.; Medical Clinic of Klinikum Steglitz, Freie University, Berlin, FRG.

S.A.248
HIV-1 BLOCKS MONOCYTE-MEDIATED LYSIS OF HIV-INFECTED CELLS: ROLE OF THE HIV ENVELOPE PROTEIN. Debs, R., Krowka, J., Brunette, E., Stites, D., Philip, R., Duzgunes, Nejat; Cancer Research Institute and Departments of Laboratory Medicine and Pharmaceutical Chemistry, University of California, San Francisco, CA, USA.

S.A.249
HIV INFECTED MONOCYTE MACROPHAGES (M0) PHAGOCYTOSE CANDIDA ALBICANS LESS EFFECTIVELY THAN UNINFECTED M0. Colvin, Anne*, Crowe, S.*, Marshall, J.*, Neate, E.*, Silburn, K.*, Sonza, S.*, Vardaxix, N.†; *Macfarlane Burnet Center for Medical Research, Fairfield Hospital, Melbourne, Australia; †Phillip Institute of Technology, Melbourne, Australia.

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S.A.250
CYTOTOXIC IMMUNE RESPONSES IN RHESUS MONKEYS AFTER HIV-1 INFECTION. Wells, Martha; Daniel, S.; Carrow, E.; Wittek, A.; Quinnan, G.; FDA/CBER/DV, Bethesda, MD, USA.

S.A.251
CHARACTERIZATION OF SIV-SPECIFIC T CELL PROLIFERATIVE RESPONSE OF INFECTED RHESUS MACAQUES. McGraw, Thomas P.*, Vowels, B.*, Gershwin, M.†, Gardner, M.*; *Department of Medical Pathology; †Department of Internal Medicine; School of Medicine and California Primate Research Center, University of California, Davis, CA, USA.

S.A.252
SIV-SPECIFIC CYTOTOXIC T LYMPHOCYTE RESPONSE OF INFECTED RHESUS MACAQUES. Vowels, Benjamin R.*, Gershwin, E.†, Gardner, M.*, McGraw, T.*; *Department of Medical Pathology; †Department of Internal Medicine; School of Medicine and California Primate Research Center, University of California, Davis, CA, USA.

S.A.253
CHARACTERIZATION OF THE HIV-SPECIFIC CYTOTOXIC T LYMPHOCYTE RESPONSE IN HUMANS. Langlade-Demoyen, P.*; Dadaglio, G*; Ngo, N.*; Michel, F*; Autran, B.†; Oksenhendler, E.†; Sansonetti, P.*; Hoffenbach, A.*; Plata, Fernando*; *Institut Pasteur, Paris; Hopital Pitie-Salpetriere, Paris†; Hopital Saint-Louis, Paris‡, France.

S.A.254
CTL RESPONSE TO P24(GAG) IN LONG-TERM ASYMPTOMATIC SEROPOSITIVE INDIVIDUALS INFECTED WITH HIV-1. Mawle, Alison C., Ridgeway, M.R., Kieny, M-P. and Lilson, A.R.; Immunology Branch, Centers for Disease Control, Atlanta, Georgia, USA, Transgene, Strasbourg, France, and Department of Public Health, San Francisco, California, USA.

S.A.255
SELECTIVE LOSS OF HIV-SPECIFIC CYTOLYTIC ACTIVITY IN PATIENTS WITH AIDS DESPITE A NORMAL BROAD CYTOLYTIC FUNCTION. HIV-SPECIFIC CTL BELONG TO THE CD8+DR+ SUBSET WITH DECREASED CLONOGENIC POTENTIAL. Pantaleo, Giuseppe*, DeMaria, A.*, Koenig, S.*, Butini, L.*, Baseler, M.†, Lane, H.C.*, Fauci, A.S.*; *NIAID, National Institutes of Health, Bethesda, MD, USA; †PRI, Frederick, MD, USA.

S.A.256
ANALYSIS OF HIV-SPECIFIC CYTOTOXIC T CELL RESPONSES IN LUNGS AND LYMPHOID ORGANS. Hadida F.*, Autran B.*, Parrot A.*, Guillon JM*, Mayaud C.†, Debre P.*; *Lab. Immunol. Cell., Chu Pitie Salpetriere, Paris France †Dept. Pneumo., Hop. Tenon, Paris France.

S.A.257
DEFINITION OF THE IMMUNOMODULATORY POTENTIAL OF REGIONS OF THE HUMAN IMMUNODEFICIENCY VIRUS SURFACE GLYCOPROTEINS. Benson, Elizabeth*#, Brodtmann, M.E.*, McAteer, D.*, Barry, J.*; *Dept. Of Pathology and Immunology, and #Dept. Of Medicine, Monash University, Melbourne, Victoria, Australia.

S.A.258
IDENTIFICATION OF CONSERVED HIV ENVELOPE SEQUENCES RECOGNIZED BY HUMAN CYTOTOXIC T LYMPHOCYTES. Dadaglio, Gilles*; Langlade-Demoyen, P.*; Leroux, A.*; Bahraoui, E.M.*; Traincard, F.*; Fisher, R.†; Plata, F.*; *Institut Pasteur, Paris, France; †Biogen Research Corp., Cambridge, MA.

S.A.259
INTRA AND EXTRACELLULAR LOCATION OF VACCINIA RECOMBINANT HIV-1 GAG PROTEINS EXPRESSED IN HUMAN B CELLS. O'Toole, Carol; Lowdell, M.; Dept. of Medical Microbiology, The London Hospital Medical College, Turner Street, London, E1 2AD, U.K.

S.A.260
HIV NEF, GAG AND ENV PEPTIDE EPITOPES IMPLIED IN PROLIFERATIVE AND CYTOLYTIC T CELL RESPONSES IN MICE. Michel, F.*, Hoffenbach, A.*, Langlade-Demoyen, P.*, Kaczorek, M.†, Kieny, M.P.‡,Plata,F.*; *Institut Pasteur, Paris; †Pasteur Vaccins, Marnes-la-Coquette; ‡Transgene S.A., Strasbourg, France.

S.A.261
PROPAGATION AND ANALYSIS OF HIV-1 GAG-SPECIFIC CYTOTOXIC T CELL CLONES. Johnson, R. Paul*; Trocha, A.*; Mazzara, G.†; Panicali, D.†; Walker, B.D.*; Infectious Disease Unit, Mass. General Hospital, Boston, MA.

S.A.262
RESISTANCE TO HIV REPLICATION IN LYMPHOCYTES OF ASYMPTOMATIC HIV CARRIERS. Kannagi, Mari; Masuda, T.; Harada, S.; Kumamoto University Medical School, Kumamoto, Japan.

S.A.263
RELATIONSHIP BETWEEN CD8+ CELL ANTIVIRAL ACTIVITY AND CLINICAL STATUS. Mackewicz, Carl, Ortega, H., Levy, J.A.; University of California, School of Medicine, San Francisco, CA, USA.

S.A.264
LACK OF CLEARANCE OF A CTL EPITOPE IN VIVO. Meyerhans, Andreas; Dadaglio, G.; Vartanian, J-P.; Langlade-Demoyen, P.; Plata, F.; Wain-Hobson, S.; Laboratorie BIMR, Paris, France.

S.A.265
CYTOTOXIC T LYMPHOCYTE-MEDIATED LYSIS OF RM-CSF-TREATED MACROPHAGES EXPRESSING HIV ANTIGENS. Torpey, III, David J.; Rinaldo, Jr., C.R.; Univ. of Pittsburgh, Pittsburgh, PA, USA.

S.A.266
HIV SPECIFIC LYMPHOCYTE PROLIFERATION TO AUTOLOGOUS CELL LINES INFECTED WITH RECOMBINANT VACCINIA VIRUSES (RVAC) EXPRESSING HIV PROTEINS. Scillian, James*; Svedersky, L.; Roey, S.*; Baenziger, J.†; Vandevert, C.*; Stites, D.*; *Depts. of *Laboratory Medicine and †Microbiology and Immunology and the †Howard Hughes Medical Institue, UCSF, San Francisco, CA, USA.

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S.A.267
HUMAN MONOCLONAL ANTIBODIES TO HIV GLYCOPROTEINS 120 AND 41. McClure, Jan; Dickinson, E.; Oncogen Corporation Seattle, Washington, U.S.A.

S.A.268
PRODUCTION OF MN NEUTRALIZING MONOCLONAL ANTIBODIES. White-Scharf, Mary E.; Silver, S.; Profy, A.T.; Potts, B.; Rusche, J.R.; Scott, C.F., Jr.; Repligen Corp., Cambridge, MA, USA.

S.A.269
A HUMAN MONOCLONAL ANTIBODY WHICH RECOGNIZES THE V3 REGION OF HIV GP120 AND WHICH NEUTRALIZES HTLV-III MN. Scott, Charles F., Jr.*; Silver, S.*; Profy, A.T.*; Robinson, J.E.†; *Repligen Corp., Cambridge, MA, USA; †Loouisiana State Univ., New Orleans, LA, USA.

S.A.270
OPTIMIZING PRODUCTION OF HUMAN MONOCLONAL ANTIBODIES TO HIV-1. Gorny, MIroslaw K.; Gianakakos, V.; Zolla-Pazzner, S.; NY Univ. Med. Ctr. & NY Vets. Admin. Med. Ctr., NY, NY, USA.

S.A.271
EPITOPE MAPPING OF NINE HUMAN MONOCLONAL ANTIBODIES TO GP41. Xu, Jian-Yin*; Gorney, M.K.*; Palker, T.‡; Zolla-Pazner, S.*,†; *NY Univ. Medical Center; †Veterans Admin. Medical Center; ‡NY and Duke Univ. Medical Center, Durham, NC, USA.

S.A.272
GENERATION OF TWO ANTI-HIV P24-KDA HUMAN IGG MONOCLONAL ANTIBODIES (HUMABS). Lake, Doug*; Masuho, Y.†; Matsumoto, T.†; and Hersh, E.M.*; *University of Arizona, Tucson, AZ, USA; † Teijin Ltd., Tokyo, Japan.

S.A.273
VARIABLE REGION GENE UTILIZATION AND MUTATION IN A GROUP OF NEUTRALIZING MURINE MONOCLONAL ANTI-HIV ANTIBODIES. Pirofski, Liise-anne*; Thomas, E.†; Scharff, M.*; *Albert Einstein Coll. of Med., Bronx, NY, USA; †Oncogen, Seattle, WA, USA.

S.A.274
CHARACTERIZATION OF ANTI-HIV-2 CORE PROTEIN MONOCLONAL ANTIBODIES WHICH ARE CROSS-REACTIVE WITH HIV-1. Yoshihara, Paul; Benelli, M.; Epitope, Inc., Beaverton, OR, USA.

S.A.275
IDIOTYPIC EVIDENCE OF GP-41-GP-41 BINDING SITES WITH NEUTRALIZATION POTENTIALS. Pelagi, Micaela, Lopalco, L., Gasparri, A., Ciccomascolo, F., Andronico, F., Siccardi, A.G.; Dipartimento di Biologia e Genetica per le Scienze mediche, Universita di Milano, Milano, Italy.

S.A.276
NEUTRALIZATION EPITOPES ON HIV-1 APPARENTLY INCLUDE SPECIFICITIES OUTSIDE VARIABLE REGION 3. Quinnan, Gerald V.; Vujcic, L.K.; Carrow E.W.; Seamon, K.; Hendry, R.M.; CBER, FDA, Bethesda, Maryland, USA.

S.A.277
PERIODIC CHANGES IN NEUTRALIZATION EPITOPES OF HIV-1 INVOLVE VARIABLE REGION 3. Vujcic, Luba K.; Carrow, E.W.; Seamon, K.; Quinnan, G.V.; CBER, FDA, Bethesda, Maryland, USA.

S.A.278
CHANGES IN A NEUTRALIZATION DOMAIN OF SEQUENTIAL ISOLATES IN EXPERIMENTAL AND NATURAL HIV INFECTION. Kuiken, Carla L.*; de Jong, J.-J.*; Tersmette, M.†; Smit, L.*; Nara, P.L.‡; Goudsmit, J.*; *Human Retrovirus Lab., Academic Med. Ctr., Amsterdam, The Netherlands; †Central Lab. for Blook Transfusion, Amsterdam, The Netherlands; ‡Natl. Cancer Institute, Frederick Cancer Research Facility, Frederick, MD, USA.

S.A.279
INDIVIDUAL SELECTION FOR GENETIC VARIANTS OF THE V3 MAJOR NEUTRALIZING DOMAIN. Wolfs, Tom F.W.*; Goudsmit, J.*; De Jong, J.J.*; Kuiken, C.L.*; Van den Berg, H.†; Krone, W.J.A.*; *Human Retrovirus Lab., Academic Med. Ctr., Amsterdam, The Netherlands; †Dept. of Pediatrics, Univ. Hosp., Leiden, The Netherlands.

S.A.280
BIOLOGICALLY FUNCTIONAL HIGH AFFINITY/AVIDITY ANTIBODIES TO THE HIV GP120 PRINCIPAL NEUTRALIZING DOMAIN (PND). Devash, Yair*; Goudsmit, J.†; Nara, P.‡; Dunlop, N.‡; Durda, P.*; Wood, D.G.*; Ellmaker, C.*; Reagan, K.J.*; *E. I. du Pont de Nemours, Med. Products Dept., Glasgow, DE, USA; †Virology Dept., Univ. of Amsterdam, The Netherlands; ‡Frederick Cancer Research Facility, USA.

S.A.281
GEOGRAPHICALLY DIVERSE ANTIBODY RESPONSES TO THE VARIABLE REGION 3 (V3) NEUTRALIZING EPITOPE OF THE HIV-1 ENVELOPE. Carrow, Emily*; Vujcic, L.*; Hendry, R.M.* Galvao, F.†; Halsey, N.‡; Boulos, R.‖; and Quinnan, G.*; *CBER, FDA, Bethesda, MD, USA, †FIOCRUZ, Brotas-Salvador-Ba, Brazil, ‡John Hopkins School of Hygeine and Public Health, Baltimore, MD, USA, ‖Ctr. for Dev. in Health, Port-au-Prince, Haiti.

S.A.282
ANTIGENIC DRIFT OF HIV-1. Goudsmit, Jaap*; Back, N.K.T.*; Sun, W.*; Krone, W.J.A.*; McLeon, R.H.†; Nara, P.L.‡; *Human Retrovirus Lab., Academic Med. Ctr., Amsterdam, The Netherlands; †Central Veterinary Institute, Lelystad, The Netherlands; ‡Natl. Cancer Institute, Frederick Cancer Research Facility, Frederick, MD, USA.

S.A.283
CHARACTERIZATION OF NEUTRALIZING ANTI-GP41 ANTIBODIES IN HIV-POSITIVE SERA. Viale, Giovanna, Lopalco, L., Lari, P., Ciccomascolo, F. Andronico, F., Sabbatani, S.*;: Dipartimento di Biologia e Genetica Scienze Mediche, Universita di Milano, Milano, Italy; *Istituto di malattie Invettive, Ospedale Sant'Orsola, Bologna, Italy.

S.A.284
TO DETERMINE THE SPECIFICITY OF OLOGOCLONAL ANTIBODIES IN CEREBROSPINAL FLUIDS AND SERUM SAMPLES OF PATIENTS INFECTED WITH HIV. Goswami, Kamal; Kaye, S; Harrison, M; McAllister, R; Tedder, R.; University College and Middlesex School of Medicine, London, UK.

S.A.285
QUANTITATIVE HUMORAL RESPONSE TO HIV ANTIGENS IN UGANDAN SUBJECTS INFECTED BY HIV-1. Kaleebu, Pontiano*,†; Cheingsong-Popov*; Katabira, E.‡; Birlyahwaho, B.†; Downing, R.†; Sempala, S.†; Weber, J.*; *Dept. of Infectious Diseases, RPMS, Lundon, UK; †Uganda Virus Research Institute, Entebbe, Uganda; ‡Dept. of Medicine, Mulago Hospital, Kampala, Uganda.

S.A.286
QUANTITATIVE HUMORAL RESPONSES TO GAG AND ENV PROTEINS AT SEROCONVERSION DEFINE OUTCOME OF HIV INFECTION. Weber, Jonathan*; Cheingsong-Popov, R.*; Panagiotidi, C.*; Shaunak, S.*; Beddows, S.*; Bowcock, S.†; Aromstam, A.‡; *Dept. of Infectious Diseases; †Dept. of Haematology, RPMS, London, UK; ‡Treolar Haemophilia Centre, Alton, Hants UK.

S.A.287
SIGNIFICANCE OF ANTIBODIES TO MULTIPLE VIRAL COMPONENTS IN THE PREDICTION OF HIV DISEASE PROGRESSION. Ascher, Michael S.; Sheppard, H.W.; Bouvier, P.B.; California Department of Health Services (VRDL), Berkeley, CA, USA.

S.A.288
PREVALENCE OF ANTIBODIES TO P17, AND ITS CORRELATION WITH OTHER SEROLOGICAL MARKERS DURING HIV-1 INFECTION. Mehta, Smriti U.*, Rupprecht, K.R.*, Hunt, J.C.*, Kramer, D.E.*, McRae, B.J.‡, Allen, R.G.†, Dawson, G.J.*, and Devare, S.G.*; *Human Retroviruses, and †Hepatitis/AIDS Research Departments, Abbott Laboratories, Abbott Park, IL, U.S.A.

S.A.289
IDENTIFICATION OF HIV2 TRANSMEMBRANE GLYCOPROTEIN HOMODIMER IN WESTERN BLOTTIN: RELATIVE VALUE OF THIS TARGET ANTIGEN IN HIV2 ANTIBODY DETECTION. SanJuan, Amparo; Alves de Oliveira, V.; Gadelle, S.; Quesneau, Y.; Delagneau, J.F.; Diagnostics Pasteur, 92430 Marnes La Coquette, France.

S.A.290
EXPRESSION AND IMMUNOLOGICAL CHARACTERIZATION OF THE ENDONUCLEASE OF HIV-1 AND HIV-2. Vinga-Martins C.; Werno A.; Mueller-Lantzsch N.; Univeristaet des Saarlandes, Homburg, FRG.

S.A 291
LOSS OF GP120 IMMUNOREACTIVITY UNDER REDUCING CONDITIONS. Kawamura, T.*; Masuho, Y.*; Matsumoto, y.*; Lake, D.†; Wolff, P.H; and Hersch, E.M.†; *Teijin, Ltd., Tokyo, Japan; †University of Arizona, Tucson, AZ, USA.

S.A.292
ANTIBODIES TO A CARBOXY TERMINAL FUSIONPROTEIN (CTF) OF HIV GP41: RELATION TO CLINICAL AND IMMUNOLOGICAL FINDINGS. Lindhardt, Bjarne Orskov, Bugge, T, Holmback, K, Hulgaard, E, Kusk, P.; Laboratory of Tumor Virology, The Fibiger Institute, Copenh., Denmark.

S.A.293
EXPRESSION AND IMMUNOLOGICAL CHARACTERIZATION OF THE NEF PROTEIN OF HIV-1. Kienzle, N.; Enders, M.; Mueller-Lantsch N.; Univeristaet des Saarlandes, Homburg, FRG.

S.A.294
ANTIGENIC DETERMINANTS SYNTHESIZES IN LIBRARY OF RANDOMLY CLONED FRAGMENTS OF HIV-1 GENOME. Mikhailov, M.; Vasilyev, A.; Nikolayeva, I.; Arsenyan, S.; Sverdlov, E.; All-Union Scientific Research Institute of Biotechnology, USSR Ministry of Medical Industry, Moscow, USSR.

S.A.295
VIRION-ASSOCIATED PROTEINS OF HIV-1. Yuan, Xin, Matsuda, Z., Matsuda, M., Mayer, K.*, Essex, M., Lee, T.H.; Department of Cancer Biology, Harvard University School of Public Health, Boston, MA, USA, *Infectious Disease Division, Memorial Hospital, Brown University, Pawtucket, RI, USA.

S.A.296
PERIPHERAL BLOOD MONONUCLEAR CELLS INFECTED IN VITRO WITH HIV ACTIVATE COMPLEMENT BY AN ANTIBODY DEPENDENT PATHWAY. Paul, David B.; Sullivan, B.L.; Landay, A.L.; Spear, G.T.; Rush Presbyterian-St. Luke's Medical Center, Chicago, IL, USA.

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S.A.297
DETECTION OF ANTI-CORE PRODUCING B CELLS IN HIV-1 INFECTED INDIVIDUALS WITH A HIGH OR LOW ANTI-CORE SERUM TITER. Teeuwsen, V.z; Keet, R.xx; Lange, J.xxx; Mulder, J.xx; Efftinck Schattenkerk, J.xxx; UytdeHaag, F.x; Goudsmit, J.xxx; Osterhaus, A.x. x; National Institute of Public Health & Environmental Protection, Bilthoven, xxMunicipal Health Service, Amsterdam, xxxUniversity of Amsterdam, Amsterdam, The Netherlands.

S.A.298
PRE B CELLS IN HIV INFECTION. Blime, Vincent; Bene, M.C ; Amiel, C.*; Canton, P.*; Faure, G.; Lab. Immunol. and *Dept. Infec. Diseass, Chu Nancy, France.

S.A.299
FAILURE OF ADCC TO PREDICT HIV ASSOCIATED DISEASE PROGRESSION OR OUTCOME IN A HAEMOPHILIAC COHORT. Dalgleish A G. Habeshaw J A Sinclair A; Retrovirus Research Group Mrc Clinical Research Centre Harrow HA1 3UJ England Beatson D Steel J Mrc Human Genetics Unit Western General Hospital Edinburgh Ludlam C Department of Haematology Royal Infirmary Edinburgh, England.

S.A.300
THE PERCENTAGE (%) OF C3D-COATED LYMPHOCYTES IS MARKEDLY INCREASED IN HIV-SEROPOSITIVE (SP) HAEMOPHILIACS (H). Fust, George*; Ujhelyi, E.*; Mihalik, R.*; Krall, G.*; Banhegyi, D.†; Hidvegi, T.*; Toth, E.*; Kirschfink, M.‡; Paloczi, K.*; Hollan, S.R.*; *Natl. Inst. Haematol., †Laszlo Hosp., Budapest, Hungary, ‡Ruprecht-Karls Univ. Heidelb.FRG.

S.A.301
IMMUNE COMPLEXES (IC) CONTAINING A HIV GP120 PEPTIDE AND HUMAN POLYCLONAL ANTI-HIV IGG ACTIVATE THE ALTERNATIVE PATHWAY (AP) OF COMPLEMENT (C). Hidvegi, Tunde*; Nagy, K.†; Gyapay, G.*; Kirschfink, M.‡; Ujhelyi, E.*; Kokai, M.*; Hollan, S.R.*; Fust G.*; *Natl. Inst. Haematol. Blood Transf., †Inst. of Isotopes, Budapest, Hungary, ‡Ruprecht-Karls Univ., Heidelberg, FRG.

S.A.302
INCREASED LEVELS OF SERUM IL-6 CORRELATE SERUM IL-2R LEVELS IN HIV INDUCED DISEASES. Honda, Mitsuo*; Kitamura, K*; Ohkura, T.*; Ohnishi, J*; Nakajima, T.*; Chermann, J-C†; Tokunaga,T.*; *National Institute of Health, Tokyo, Japan, †Unite Inserum, Marseille, France.

S.A.303
SOLUBLE INTERLEUKIN-2 RECEPTOR (SIL-2R) LEVELS IN INFANTS BORNT TO HIV (+) MOTHERS. Prieto, Cecilia, Hanson, C.G., Orson, F., Shearer, W.T.; Baylor College of Medicine, Houston, Texas, USA.

S.A.304
COMPLEMENT-MEDIATED NEUTRALIZATION OF HIV REQUIRES ACTIVATION OF C5B-9 COMPLEX. Spear, Gregory T.; Sullivan, B.L.; Lint, T.F.; Landay, A.L.; Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois, USA.

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S.A.305
ACTIVE CYTOTOXIC T CELLS IN HIV INFECTION BEFORE AIDS ONSET. Vanham, Guido; Kestens, L.; Gigase, P.; Colebunders, B.; Vandenbruaene, M.; Brijs, L.; Ceuppens, J.L.; Institute of Tropical Medicine, Antwerpen, Belgium.

S.A.306
THE STUDY OF CELLULAR IMMUNITY OF HIV-INFECTED PEOPLE. Saidov, M.Z.; Pinegin, B.V.; Borisova, A.M.; Andreev, S.M.; Institute of Immunology, USSR Ministry of Public Health.

S.A.307
INHIBITION OF CD4(+) T CELL ACTIVATION AND ADHESION BY PEPTIDES OF THE HIV ENVELOPE GP160 TO CD4. Le Deist F, Corado J, Mazerolles F, Kaczorek M, Fischer A.; INSERM U 132, Hopital Necker-Enfants Malades, 149. rue de Sevres, 75015 Paris, France.

S.A.308
MECHANISMS ON THE DECLINE OF MACROPHAGE CYTOTOXICITY DURING THE COURSE OF HIV-1 INFECTION. a)Gianni Guiseppe, a)Voth R., b)Gallati H., c)Falke D., d)Mueller WEG, a)Meyer Zum Buescheinfelde K.H., Hess G.; a)I. Med. Klinik und Poliklinik, c)Institut fuer Virologie, d)Institut fuer Phys. Chemie, Joh.-Gutenberg Univ., Mainz, FRG, b)Zentrale Forschungseinheit, Hoffmann La Roche, Basel, Schweiz.

S.A.309
HIV ENVELOPE PROTEIN (GP120) DECREASES THE ANTI-CRYPTOCOCCAL EFFECT OF HUMAN BRONCHOALVEOLAR MACROPHAGES. Wagner, Randall P., Levitz, S., Bernardo, J., Farrell, T., Kornfeld, H.; Boston University School of Medicine, Boston Massachusetts.

S.A.310
THE HIV ENVELOPE INHIBITS ANTIGEN SPECIFIC T CELL RESPONSES BY INTERACTION WITH THE MEMORY T CELL. Dalgleish, Angus G., Manca, F.*, Habeshaw, J.A.; Retrovirus Research Group MRC, Clinical Research Centre, Harrow, England; *Department of Immunology, San Martino Hospital, Genoa, Italy.

S.A.311
INTRACELLULAR GLUTATHIONE LEVEL CONTROLS DNA-BINDING ACTIVITY OF NF B-LIKE PROTEIN (S). Mihm, Sabine and Droge, Wulf; Institute of Immunology and Genetics, German Cancer Research Center, D-6900 Heidelberg, Fed. Rep. Germany.

S.A.312
HIV INHIBITS THE EARLY STEPS OF LYMPHOCYTE ACTIVATION, INCLUDING INITIATION OF INOSITOL PHOSPHOLIPID METABOLISM. Hofman BO; Nishanian, P.; Baldwin, R.L., Insixiengmay, P.; Nel, A.; Fahey, J.L.; UCLA, School of Medicine, Los Angeles, California, USA.

S.A.313
ACTIVATED B-LYMPHOCYTES INDUCE HIV EXPRESSION IN CHRONICALLY INFECTED CELL LINES. Rieckmann, Peter; Poli, G.; Pantaleo, G.; Kehrl, J.H.; Fauci, A.S.; LIR, NIAID, NIH, Bethesda, Maryland, USA.

S.A.314
ANTI-CD4 ANTIBODIES IN VOLUNTEERS IMMUNIZED WITH RGP160 ASSOCIATED WITH RAPID DECLINE IN ANTI-RGP160. Keay, Susan*; Murphy, J.†; Tacket, C.O.†; *Division of Infectious Disease, †Center for Vaccine Development, University of Maryland School of Medicine, Baltimore, MD, USA.

S.A.315
HIV GP41 SYNTHETIC PEPTIDES EFFECT THE NATURAL IMMUNE RESPONSE. Mertins, Susan*, Cauda, R.†, Tumbarello, M.†, Ortona, L.†, Kennedy, R.‡, Rubin, M.*, Pizzo, P.*, Chahn, R.‡, Kanda, P.‡; *Pediatric Branch, NIH/NCI, Bethesda, MD, USA; †Clinica Malattie Infettive, Universita' Cattolica, Rome, Italy; ‡Dept. of Virology and Immunology, Southwest Foundation for Biomedical Research, San Antonio, TX, USA.

S.A.316
PHENOTYPIC MARKERS OF IMMUNE ACTIVATION IN RHESUS MONKEYS INFECTED WITH SIV. Popow, Joanna, Fahey, J., Shum, A., Hofmann, B., Lasarov, R., Vowels, B.; UCLA School of Medicine, Los Angeles, CA and Primate Research Center, UC Davis, Davis, CA, USA.

S.A.317
INHIBITION OF HIV-1 REPLICATION IN CD4+ T CELL SUBSETS WITH ANTI-TNF NEUTRALISING ANTIBODIES. Vyakarnam, A.*; Matear, P.*; Meager, A.†; Shultz, T.‡; Loveday, C.*; Beverley, P.C.*; *UC & Middlesex School of Medicine, †NIBSC, Potters Bar, UK; ‡Institute of Cancer Research, London, England.

S.A.318
INTERLEUKIN-6 (IL-6) INDUCES HIV EXPRESSION AND SYNERGIZES WITH OTHER CYTOKINES AT TRANSCRIPTONAL AND POST-TRANSCRIPTIONAL LEVELS. Poli, Guido; Kinter, A.; Bressler, P.; Justement, J.S.; Timmer, W.C.; Fauci, A.S.; NIAID, NIH, Bethesda, Maryland, USA.

S.A.319
OPPOSITE EFFECTS OF TRANSFORMING GROWTH FACTOR-B (TGF-B) ON HIV EXPRESSION IN CHRONICALLY VERSUS ACUTELY INFECTED MONOCYTE CELLS. Kinter, Audrey; Poli, G.; Justement, J.S.; Kehrl, J.H.; Fauci, A.S.; NIAID, NIH, Bethesda, MD, USA.

S.A.320
TUMOR NECROSIS FACTOR-ALPHA PRODUCTION IN HIV-1 INFECTION. Rossol Siegbert, Voth R., Meyer zum Bueschenfelde K.-H., and Hess G.; I. Med. Klinik und Poliklinik, Johannes-Gutenberg Universitaet, Mainz, FRG.

S.A.321
DIFFERENTIAL GENE EXPRESSION OF IFN-ALPHA AND TUMOR NECROSIS FACTOR ALPHA IN MONONUCLEAR CELLS FROM PATIENTS WITH HIV-1 INFECTION. a)Voth, Rita, a)Rossol S., a)Klein K., a)Hess G., b)Schuett K., c)Schroeder H.C.; a)Meyer zum Bueschenfelde K.-H., c)Mueller W.E.G. a)1. Med. Klinik und Poliklinik, b)Transfusionzentrale, c)Institut fuer Phys. Chemie, Johannes-Gutenberg Universitaet, Mainz, FRG.

S.A.322
GLUCOCORTICOIDS ACTI SYNERGISTICALLY WITH RECOMBINANT CYTOKINES TO INDUCE HIV EXPRESSION IN CHRONICALLY INFECTED PROMONOCYTE CELLS. Justement, Jesse, S.; Poli, G.; Fauci, A.S.; NIAID, NIH, Bethesda, MD, USA.

S.A.323
IN VITRO PRODUCTION AND SPECIFIC CELLULAR SOURCES OF NEOPTERIN AND BETA2-MICROGLOBULIN (B2M). Uittenbogaart, Christel H.; Hofmann, B.; Nishanian, P.; Rezai, A.; Fahey, J.L.; UCLA, School of Medicine, Los Angeles, California, USA.

S.A.324
CD4 AUTOANTIBODIES WITH DIFFERENT SPECIFICITIES IN HIV-INFECTED HEMOPHILIA PATIENTS. Daniel, Volker; Zettlmeissl, G.*; Langner, K.*; Schimpf, K.†; Zimmerman, R.†; and Opelz, G.; Department of Transplantation-Immunology, Institute of Immunology, University of Heidelberg, Heidelberg, *Behring Werke AG, Marburg, †Rehabilitation Hospital and Hemophilia Center Heidelberg, Heidelberg, FR Germany.

S.A.325
ANTI-IGG AUTOANTIBODIES IN HIV-INFECTED HEMOPHILIA PATIENTS. Susal, Caner*; Stanworth, D.R.† Terness, P.*; Daniel, C.*; Salomao, I*; Zimmerman, R.‡; Schimpf, K.‡; Opelz, G.*; *Institute of Immunology, University Heidelberg, †Rehabilitation Hospital and Hemophilia Center Heidelberg, FR Germany, ‡Rheumatology and Allergy Research Unit, University of Birmingham, Birmingham, England.

S.A.326
ANALYSIS OF HLA ALLOANTIGEN FREQUENCIES IN PATIENTS WITH HIV-1 RELATED KAPOSI'S SARCOMA. Mann, Dean; O'Donnell, M.; Blatter, W.; Goedert, J.; Immunogenetics and Viral Epidemiology Sections, National Cancer Institute, Frederick and Bethesda, MD, USA.

S.A.327
FUNCTIONAL ANALYSIS OF CR1 ON ERYTHROCYTES FROM AIDS AND ARC. Miyamoto, Koji; Ikegami, H., Watanabe, K., Senderowicz, A., Lange, M., Inada, Y.; St. Luke's-Roosevelt Hospital Center, Columbia University, New York, N.Y. USA.

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S.A.328
IN VITRO INTEGRATION OF HIV-1 DNA. Farnet, C.M. and Haseltine, W.A.; Division of Human Retrovirology, Dana-Farber Cancer Institute, Boston, Ma 02115 USA.

S.A.329
A SELECTIVE DNA CLEAVING REACTION CATALYZED BY PURIFIED HIV INTEGRATION PROTEIN EXPRESSED IN E. COLI. Sherman, Paula A.; Fyfe, James A.; Wellcome Research Labs, Research Triangle Park, NC, 27709, USA.

S.A.330
STUDY OF THE NON-ESSENTIAL GENES OF HIV-1: VPR AND VPU. Cohen, E.A., Bergeron L., Terwilliger, E., Sodroski, J., Haseltine, W.A.; Division of Human Retrovirology, Dana-Farber Cancer Institute, Boston, MA 02115 USA.

S.A.331
COMPETITIVE INHIBITION OF HIV-1 EXPRESSION BY TRANSACTIVATION DEFECTIVE TAT GENES. Cheynier, Remi; Meyerhans, A.; Huet, T.; Wain-Hobson, S.; Laboratoire BIMR, Paris, France.

S.A.332
TAT PROTEIN OF HUMAN IMMUNODEFICIENCY, VIRUS TYPE 1 IS ABLE TO BLOCK TAR-MEDIATED ACTIVATION OF (2'-5') OLIGOADENYLATE SYNTHETASE. Schroder, Heinz C., Ugarkovic, D., Wenger, R., Okamoto, T. and Muller, W.E.G.; Institut fur Physiologische Chemie, Mainz, FRG.

S.A.333
FUNCTIONAL ANALYSES OF HTLV-1 TRANSCRIPTION IN YEAST. Wu, Ling-Chuan C., Shahied, S.I., Switek, G., Shahied, L.S.; New Jersey Department of Health, Trenton, NJ, USA.

S.A.334
STRUCTURAL REQUIREMENTS WITHIN THE TAR REGION FOR TAT BINDING IN VITRO. Roy, Sophie*; Delling, U.*; Rosen, C.†; Sonenberg, N.*; *McGill University, Montreal, Quebec, Canada, †Roche Institute of Molecular Biology, Nutley, New Jersey, USA.

S.A.335
POPULATION CHANGES OF HIV-1 REV GENE DURING DISEASE PROGRESSION. Pedroza Martins, Livia; Meyerhans, A.; Sninsky, J.; Asto, B.; Wain-Hobson, S.; Laboratoire BIMR, Paris, France.

S.A.336
MOLECULAR MECHANISM OF REV MEDIATED TRANSACTIVATION OF HIV GENE EXPRESSION: INTERACTION BETWEEN RNA AND REV PROTEIN. Rusche, J.R.*; Cook, Kathleen*; Fisk, G.*; Rennert, P.*; Cullen, B.†; Bohnlein, E.‡; Daly, T.*; Repligen Corp., Cambridge, MA, USA.

S.A.337
SPECIFIC INTERATION OF THE HIV REV PROTEIN WITH A STRUCTURED REGION IN ENV MRNA: SECONDARY STRUCTURE IS THE MAJOR DETERMINANT FOR INTERACTION. Perkins-Barrow, Ann, Olsen, H., Cochrane, A., Nelbock, P., Chen, C-H, Rosen, C.A.; Department of Molecular Oncology & Virology, Roche Institute of Molecular Biology, Nutley, NJ 07110.

S.A.338
MECHANISM OF FUNCTION OF THE HIV-1 REV PROTEIN. Barbara K. Felber, L. Solomin, B. Mermer, D. Derse* and G.N. Pavlakis; National Cancer Institute-FRRF, BRI-Basic Research Program, *Laboratory of Viral Carcinogenesis, Frederick, MD: 21701, USA.

S.A.339
HIV-1 REV BINDING AND ACTIVITY REQUIRE A SPECIFIC RNA SEQUENCE WITHIN A UNIQUE SECONDARY STRUCTURE OF THE RRE. Steven M. Holland*; Maitra, R.K.*; Ahmad, N.*; Wingfield, P.†; Venkatesan, S.*; *Laboratory of Molecular Microbiology, National Institute of Allergy and Infectious Diseases and †Office of the Director, National Institutes of Health, Bethesda, MD, USA.

S.A.340
FUNCTIONAL ANALYSIS OF CAR, THE TARGET SEQUENCE FOR THE REV PROTEIN OF HIV-1. Dayton, Andrew I., Powell, D.M., Dayton, E.T.; NIAID, National Institutes of Health, Bethesda, MD, USA.

S.A.341
IN VITRO FUNCTIONAL ASSAY OF RECOMBINANT HIV—TAT PRODUCED IN EUKARYOTIC AND BACTERIAL CELLS. Noguchi, Constance Tom*; Yuan, J.G.*; Shieh, T.C.*; Hartmanis, M.†; Schechter, A.N.*; *NIDDK, National Institutes of Health, Bethesda, MD, USA and †Kabigen, Stockholm, Sweden.

S.A.342
AUTOANTIBODIES TO CD43 (LEUKOSIALIN) IN HIV-1-INFECTED INDIVIDUALS. Ardman, Blair*; Sikorski, A.*; Settles, M.*; Mayer, K.†; Staunton, D.‡; *New England Medical Center Hospital, Boston, MA; †Fenway Community Health Center, Boston, MA; Center for Blood Research, Boston, MA, USA.

S.A.343
CHARACTERISATION OF CELLULAR PROTEINS WHICH INTERACT WITH THE NEGATIVE REGULATORY ELEMENT (NRE) OF THE HUMAN IMMUNODEFICIENCY VIRUS (HIV) LONG TERMINAL REPEAT (LTR). Emery, Vincent*; Orchard, K.*; Perkins, N.†; Chapman, C.†; Harris, J.†; Goodwin, G.†; Latchman, D.‡; Collins, M.†; *Department of Virology Royal Free Hospital, London, UK †Institute of Cancer Research, London, UK ‡University and Middlesex Hospitals, Medical Molecular Biology Unit, London, UK.

S.A.344
HUMAN IMMUNODEFICIENCY VIRUS-2 (HIV-2): TWO ENHANCERS AND THEIR RESPONSE TO T CELL ACTIVATION. Arya, Suresh K.; Laboratory of Tumor Cell Biology, National Cancer Institute, Bethesda, Maryland 20892 USA.

S.A.345
HIV-1 VIF AND VPU GENE PRODUCTS: STRUCTURAL AND FUNCTIONAL ANALYSIS. Strebel, Klaus; Maldarelli, F.; Klimkait, T.; Martin, M.A.; Laboratory of Molecular Microbiology, NIAID, NIH, Bethesda, MD, USA.

S.A.346
STRUCTURE/FUNCTION ANALYSIS OF THE HIV-1 QUASISPECIES FROM THE NEF/LTR REGION OVER A FOUR YEAR PERIOD IN VIVO. Delassus, Sylvie; Cheynier, R.; Wain-Hobson, S.; Laboratorie BIMR, Paris, France.

S.A.347
ANALYSIS OF HIV CDNA IN HUMAN MACROPHAGES. Elbeik, Tarek*, Crowe, S*, Vennari, J*, Mills, J*.; *University of California, San Francisco, California, USA.

S.A.348
INDUCTION OF HIV ENHANCER-BINDING PROTEINS BY STIMULATION THROUGH THE T CELL RECEPTOR OF HUMAN T CELL CLONES. Arenzana-Seisdedos, Fernando; Unite'd Immunologie Virale, Institut Pasteur, Paris, France.

S.A.349
DEVELOPMENT OF A RETROVIRAL VECTOR SYSTEM BASED ON HIV. Lever, Andrew*; Richardson, J.*; Gottlinger, H.†; Haseltine, W.A.†; Sodroski, J.†; *St. George's Hospital Medical School, London, UK; †Dana Farber Cancer Institute, Boston, MA, USA.

S.A.350
DELETION MUTANTS OF SIV/HIV AND POSSIBLE USE IN FUTURE VACCINES. Prakash, Kesh; Plotkin, S.A.; The Children's Hospital of Philadelphia, 34th Street & Civic Center Blvd., Philadelphia, PA 19104, USA.

S.A.351
HIV-2 ENVELOPE GLYCOPROTEIN FORMS OLIGOMERS AND MEDIATES FUSION OF CD-4BEARING NON-PRIMATE CELLS. Chakrabarti, Sekhar, Ashorn P. and Moss B.; Laboratory of Viral Diseases, NIAID, NIH, Bethesda, MD, USA.

S.A.352
PROPERTIES OF HIV-1 VARIANT GLYCOPROTEINS MADE IN LECTIN-RESISTANT CHINESE HAMSTER OVARY CELL LINES. Vasudevachari, M.B.; Dewar, R.L.; Salzman, N.P.; Georgetown Univ., Washington, D.C.

S.A.353
EXPRESSION OF FULL-LENGTH RECOMBINANT GP41 FROM HIV-1 IN MAMMALIAN CELLS: EVIDENCE FOR CELL SURFACE EXPRESSION AND OLIGOMERIZATION. Mann, Kimberly A., Barker, C., Misher, L., Steimer, K., Scandella, C., Haigwood, N.; Virology Department, Chiron Corporation, Emeryville, CA, USA.

S.A.354

MATURATION OF HIV-1 PARTICLES ASSEMBLED FROM THE GAG PRECURSOR REQUIRES IN SITU PROCESSING BY GAG-POL PROTEASE. Elizabeth Ross; Fuerst, T.R.†; Orenstein, J.M.‡; O'Neill, T.†; Martin, M.A.*; Venkatesan, S.*; *Laboratory of Molecular Microbiology, National Institute of Allergy and Infectious Diseases, Bethesda, MD USA; †Molecular Vaccines Inc., Gaithersburg, MD, and ‡G.W. University, Washington, DC.

S.A.355

IDENTIFICATION OF THE GENOME RNA IN THE HUMAN IMMUNODEFICIENCY VIRUS AND A MODEL OF ITS MORPHOLOGY. Bauer, Pierre Georges*; Barth, O.M.*; Morais de Sa, C.†; *Dept. Virology, FIOCRUX; †Hospital Gaffree e Guinle, UNI-RIO, Rio de Janeiro, Brazil.

S.A.356

REGULATION OF PROTEIN EXPRESSION IN HIV-1 INFECTED T-CELLS USING ANTI-SENSE OLIGONUCLEOTIDES (AO) TO VIRAL REGULATORY GENES. Willard-Gallo, Karen*, Furtado, M.*, Van de Keere, F.*, Farooqui, F.†, Letsinger, R.†, Wolinsky, S.†; †Northwestern University, Chicago, IL, USA, *International Institute of Cellular and Molecular Pathology, Brussels, Belgium.

S.A.357

STRUCTURAL ANALYSIS OF CD4-BINDING REGION OF HIV-1 GP120 MOLECULE. Olshevsky, U.*; Helseth, E.*; Ho, D.†; Haseltine, W.*; Sodroski, Joseph*; *Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115; †Department of Medicine, University of California, Los Angeles, CA 90048.

S.A.358

ISOLATION OF HUMAN ANTIBODY DOMAINS TO HIV USING THE POLYMERASE CHAIN REACTION. Marks, James D*; Winter, G*; Karpas, A.†.; *Laboratory of Molecular Biology, Cambridge, UK; †Department of Hematology, University of Cambridge, Cambridge, UK.

S.A.359

MOLECULAR ANALYSIS OF AIDS-ASSOCIATED LYMPHOMA (AAL). Shiramizu, Bruce*; Meeker, T.†; Kaplan, L.*; Khayam-Bashi, F.*; Herndier, B.*; McGrath, M.*; *San Francisco General Hospital; †Veterans Administration Medical Center; University of California, San Francisco, California, USA.

S.A.360

EXPRESSION OF CELLULAR GENES IN CD4 POSITIVE LYMPHOID CELLS INFECTED BY THE HUMAN IMMUNODEFICIENCY VIRUS, HIV-1: EVIDENCE FOR A HOST SHUT-OFF INDUCED BY CELLULAR MRNA DEGRADATION. Agy, Michael B.; Wambach, M.; Morton, W.; Foy, K.; Katze, M.G.; Dept. of Microbiology, Regional Primate Research Center, University of Washington, Seattle, WA, USA.

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S.B.361
PSYCHIATRIC MORBIDITY IN HIV INFECTION. Chuang, Henry T.; Jason, G.W.; Parjurkova, E.M.; Gill, M.J.; University of Calgary, Calgary, Alberta, Canada.

S.B.362
PSYCHIATRIC PREDISPOSITION AND CURRENT PSYCHIATRIC FINDINGS IN HIV-INFECTED PERSONS. Rundell James*; Brown G†; McManis S†; Pace J†. Ursano R*; *Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA †Wilford Hall U.S. Air Force Medical Center, San Antonio, Texax, USA.

S.B.363
PSYCHIATRIC STATUS OF HIV+ AND HIV- PARENTERAL DRUG USERS. Remien, Robert H.; Williams, J.B.W.; Rabkin, J.G.; Bradbury, M.J.; Todak, G.G.; Gorman, J.M.; HIV Center for Clinical & Behavioral Studies, NYS Psychiatric Inst. and Columbia Univ., NY, NY, USA.

S.B.364
THE PREVALENCE OF PERSONALITY DISORDERS IN HIV+ AND HIV- GAY MEN. Williams, Janet B.W., Rabkin, J.G., Remien, R.H., Gorman, J.M.; HIV Center for Clinical & ehavioral Studies, NY State Psychiatric Institute and Columbia University, New York, NY, USA.

S.B.365
STRESS AND COPING IN PEOPLE WITH HIV-INFECTION. Storusum, Jitschak†; Van den Boom, Frans*; Van Bevzekom, Martie*; Sno, Herman†; *Netherlands Institute of Mental Health, Utrecht (U): Netherlands. †Academical Medical Centre A'dam, Amsterdam (N-H), Netherlands.

S.B.366
AXIS V OF DSM-III-R AND BIOPSYCHOSOCIAL ASSESSMENT OF HIV-INFECTED PATIENTS. Gala, Costanzo*; Pergami, A.*; Russo, R.*; Zerboni, R.† & Cazzullo, C.L.*; *Dept. of Psychiatry, University of Milan Medical School, Milan, Italy †Dept. of Dermatology, University of Milan Medical School, Milan, Italy.

S.B.367
PSYCHONEUROIMMUNOLOGIC ASPECTS OF HIV-1 SEROSTATUS NOTIFICATION. Fletcher, Mary A.; Antoni, M; Klimas, N; LaPerriere, A; Schneiderman, N.; Center for the Biopsychosocial Study of AIDS, University of Miami, Miami, FL, USA.

S.B.368
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S.B.369
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S.B.370
PSYCHOSOCIAL STATUS OF HIV INFECTED MEN WITH HAEMOPHILIA: CONTROLLED INVESTIGATION. Catalan, J.*; Klimes, I.†; Bond, A.‡; Garrod, A.‡; Day, A.‡; Hodges, S.‡; Rizza, C.‖; *Charing Cross/Westminster Medical School, London; *Dept. Clinical Psychology, Warneford Hospital; ‡Oxford University, Dept. Psych.; ‖Haemophilia Centre, Oxon.

S.B.371
POSITIVE AND NEGATIVE CHANGES IN RESPONSE TO THE THREAT OF AIDS: PSYCHOLOGICAL ADAPTATION AS A FUNCTION OF SEVERITY OF THREAT AND LIFE DOMAIN. Hart, Christian B., Taylor, S.E., Kemeny, M.E., Dudley, J.; University of California, Los Angeles, California, USA.

S.B.372
PSYCHOSOCIAL FACTORS ASSOCIATES WITH PROGNOSIS IN AIDS. Reillo, Michelle; National Study Center, University of Maryland, Baltimore, MD, USA.

S.B.373
COPING ABILITIES OF HEMOPHILIACS WITH HIV-INFECTION. Schneider, Manfred M.*/†; Ermann, M.*; Seidl O.*; Rommel, F.†; Schramm, W.†; *Dept. Psychother./Psychosom., Psychiatric Hospital, and †Dept. of Internal Medicine of University Of Munich, FRG.

S.B.374
PSYCHOLOGICAL ASPECTS AND PARTICULAR PROBLEMS IN HIV INFECTED WOMEN. Tovar, Patricia, Uribe Z.P., Garcia C.P., Hernandez C.P., Valencia C., Chavez P.F., Sepulveda A.J.; AIDS Information Center. CONASIDA. Mexico City.

S.B.375
PSYCHOSOCIAL PROFILE IN A POPULATION ATTENDING AN HIV TESTING AND COUNSELING CENTER IN MEXICO CITY. Mendez, G.; Avila, C.; Lopez, A.; De Caso, I.E.; Hernandez, M.; Uribe, P.; Gortmaker, S.; Sepulveda, J.; Directorate of Epidemiology, Secretariat of Health, Mexico and Harvard School of Public Health, Boston, Mass.

S.B.376
IS QUALITY OF LIFE ASSOCIATED WITH A SPECIFIC RISK BEHAVIOUR IN HIV-POSITIVE INDIVIDUALS?. Eich, Dominique; Dobler-Mikola, A.; Luthy, R.; University of Zurich, Zurich, Switzerland.

S.B.377
CHANGES IN QUALITY OF LIFE IN PATIENTS WITH HIV INFECTIONS. Geels, R.M.A.*; Bonsel, G.†; Vrehen, Henk*; Kijkgraaf, M.G.W.*; Jager, J.C.‡; Borleffs, J.C.C.*; *University Hospital Utrecht, the Netherlands; †Institute of Public Health and Social Medicine, Rotterdam, the Netherlands; ‡Nat'l Institue of Public Health & Environmental Protection, Bilthoven, the Netherlands.

S.B.378
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TYPES OF SOCIAL SUPPORT AND THEIR RELATIONSHIPS TO DEPRESSIVE SYMPTOMS IN HIV POSITIVE MEN. Grace, William C.; Rundell, James R.; Oster, Charles N.; Walter Reed Army Medical Center and the Armed Forces Retroviral Research Group, Washington, DC, USA.

S.B.380
DETERMINANTS OF SOCIAL SUPPORT AMONG GAY MEN. Turner, Heather, A.; Hays, R.B.; Coates, T.J.; Center for AIDS Prevention Studies (CAPS). University of California, San Francisco, CA, USA.

S.B.381
SOCIAL, EMOTIONAL, AND NEUROPSYCHOLOGICAL COMPONENTS OF FUNCTIONAL STATUS IN MINORITY PWAS. Schmidt, Mary; McKirnan, D.J.; Tramner, P.; The Univ. of Illinois at Chicago, Chicago IL and Midwest AIDS Biobehavioral Research Center, Ann Arbor, MI, USA.

S.B.382
COPING STRATEGIES AND RESPONSE STYLES IN HOMOSEXUAL SYMPTOMATIC SERPOSITIVE MEN. Pivar, Ilona*; Temoshok, L.†; *University of California School of Medicine, San Francisco, CA; †Henry M. Jackson Foundation/ Walter Reed Army Medical Center, Washington, DC, USA.

S.B.383
PROGRESSION OF HIV DISEASE AND MENTAL HEALTH: LACK OF ASSOCIATION. Carter, Rosalind; Foster, C.; Joseph, J.; Ostrow,D; Wortman, C.; *Phair, J.; *Chmiel, J.; Kessler,: R.; University of Michigan, Ann Arbor, MI, USA *Northwestern University, Chicago, IL, USA.

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SUICIDE IDEATION AND ATTEMPTS IN HIV ILLNESS. Atkinson, Hampton; Gutierrez, R.; Cottler, L.; Grant, I.; Pace, P.; Brown, S.; Weinrich, J.; McCutchan, J.; Univ. of California San Diego & VA Medical Center, San Diego, CA, USA.

S.B.385
DEPRESSIVE SYMPTOMS AMONG HOMO-BISEXUAL MALES ATTENDING AN HIV TESTING CENTER IN MEXICO CITY. Mauricio, Hernandez; Avila, C.*; De Caso, L.E.*; Gortmanker, S.†; Sepulveda, J.*; *Directorate of Epidemiology, Ministry of Health, Mexico City and †Harvard School of Public Health, Boston, Mass.

S.B.386
COPING AND NEUROPSYCHOLOGICAL CORRELATES OF SUICIDALITY IN HIV. Gutierrez, Rosben; Atkinson, H.; Velin, R.; Patterson, T.; Heaton, R.; Grant, I.; Smith, K.; Pace, P.; Weinrich, J.; Univ. of California, San Diego and VA Medical Center, San Diego, CA, USA.

S.B.387
ATTEMPTED SUICIDE AND HIV INFECTION: EPIDEMIOLOGICAL ASPECTS IN A PSYCHIATRIC WARD. Zamperetti Marco*, Goldwurm G.F.*, Abbate E.*, Gris T.*, Muratori S.‡, Vigo B.†; *Reparto Origgi I e †Reparto Infettivi Adulti—Ospedale Ca Granda Niguarda—‡Clinica Dermosifilopatica—Universita degli Studi—Milano—Italy.

S.B.388
SUICIDAL THOUGHTS, SUICIDAL BEHAVIORS, AND SUICIDE RISK FACTORS IN HIV-SERO-POSITIVES AND ALCOHOLIC CONTROLS. Drexler, Karen*; Rundell J†; Brown G*; Erikson J†. Holloway H†; *Wilford Hall U.S. Air Force Medical Center, San Antonio, Texas, USA †Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA.

S.B.389
DEPRESSION IN THE CONTEXT OF HUMAN IMMUNODEFICIENCY VIRUS INFECTION: IMPLICATIONS FOR TREATMENT. Peterkin, Joanna*; Hintz, S.*; Kuck, J.*; Zisook, S.*; *University of California, San Diego, California, USA.

S.B.390
THE BEHAVIOR OF BECK AND ZUNG SCALES ON AIDS PATIENTS: A PROSPECTIVE STUDY. Sosa, Ana-Luisa*; Cortes, J*; Tapia-Conyer, R†; Revuelta, M†; Rodriguez, S†; *Mexican Institute of Psychiatry, Mexico D.F. Mexico †Conasida Mexico D.F. Mexico ‡FHI-AIDSTECH Durham, NC.USA.

S.B.391
CORRELATES OF DEPRESSIVE SYMPTOMATOLOGY AMONG PEOPLE WITH AIDS. Fleishman, John*; Piette, J.*; Mor, V.*; *Brown University, Providence, Rhode Island, USA.

S.B.392
HIV-RELATED MAJOR DEPRESSION: RESPONSE TO ZIDOVUDINE. Perkins, Diana O.*; Evans, D.L.*; *Univ. of NC, Chapel Hill, NC, USA.

S.B.393
DSMIII R AND RATING SCALES FOR DETECTION OF PSYCHOPATHOLOGICAL DISORDERS AMONG HIV INFECTED SUBJECTS. Cazzullo, Carlo Lorenzo+; Gala, C.+; Durbano, F.+; Pellegrini, E.+; Rossini, M.+; Tavola, T.+; Bini, T.++.; Dept. of Psychiatry, University of Milan+; Dept. of Infections Diseases, Hospital Sacco, Milan++. Italy.

S.B.394
THE BECK DEPRESSION INVENTORY, AND AN ANALOG SCALE AS SCREENING DEVICES FOR HOSPITALIZED AIDS PATIENTS. Winiarski, Mark*, Hoffman, Xena†; *Spellman Center for HIV-Related Disease, St. Clare's Hospital, New York, USA, †Albert Einstein College of Medicine/Yeshiva University, Bronx, USA.

S.B.395
TREATMENT OF ANXIETY IN HIV POSITIVE ASYMPTOMATIC MEN WITH BUSPIRONE. Hirsch, Dan Alan; Fishman, J; Jacobsen, P; Breitbart, W; Emery, M; Schwimmer, J.; Psychiatry Service, Memorial Sloan Kettering Cancer Center. New York, NY. USA.

Psychiatry: Treatment of Psychiatric Disease

S.B.396
TREATMENT OF PSYCHOLOGICAL DISTURBS IN H.I.V. INFECTED PEOPLE. Garcia Huete, Enrique.; Univ. Complutense/Centro Luria. Madrid—Spain.

S.B.397
PSYCHIATRIC EMERGENCIES IN HIV DISEASE AND AIDS. Tostes, Mauricio A.; AIDS Programme—Federal University of Rio de Janeiro, Rio de Janeiro, Brazil.

S.B.398
PSYCHIATRIC MANAGEMENT OF AIDS AND SEROPOSITIVE PATIENTS AT YALGADO HOSPITAL OF OUAGADOUGOU. Ouango, Jean Gabriel, Kabore, J., Soudre, R.; Yalgado National Hospital, Ouagadougou, Burkina Faso.

S.B.399
CHANGES IN THE PSYCHOTHERAPEUTICAL APPROACHES APPLIED TO HOSPITALIZED AIDS PATIENTS. Camara, Gisela; Zornitta, Marlene; Tostes, Mauricio.; AIDS Program, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil.

S.B.400
OUTCOME EVALUATION OF EIGHT-WEEK EDUCATIONAL SUPPORT GROUPS: VALIDATING THE MODEL USING CONTROL GROUP COMPARISONS. Moulton, Jeffrey M.; Gurbuz, G.; Sweet, D.; Martin, R.; Dilley, J.; University of California San Francisco (UCSF), San Francisco, California, USA.

S.B.401
THE PROVIDER-PATIENT RELATIONSHIP AS SEEN BY PEOPLE WITH HIV DISEASE. Gerbert, B.; Maguire, B.; Sumser, J.; McMaster, J.; Greenblatt, R.; UCSF Center for AIDS Prevention Studies, San Francisco, California, USA.

S.B.402
LONG-TERM PSYCHOTHERAPY OF HIV PATIENTS—INDICATIONS AND EXPERIENCES. Weinel, Elke; Dept. of Psychotherapy/Psychosomatics; Center of Psychiatry J.W. Goethe-University of Frankfurt A.M., rankfurt A.M. F.R.G.

S.B.403
PSYCHOSOCIAL COUNSELING ACCOMPLISHED BY MALE COUNSELORS FOR HIV-INFECTED WOMEN IN RIO DE JANEIRO, BRAZIL. Carvalho-Neto, Lahire Dutra*; Longo, PHP*; Rachid-de-Lacerda, MC*; Quinhoes, EP*; Moura, EM*; Morais-de-Sa, CA*; Hanan, JC*.; *Gaffree & Guinle University Hospital, University of Rio de Janeiro (UNI-RIO)—Brazil.

S.B.404
ISSUES OF IDENTIFICATION FOR GAY PSYCHOTHERAPISTS TREATING GAY CLIENTS WITH HIV SPECTRUM DISORDER: SPECIAL VULNERABILITY AND ITS MANAGEMENT. Cadwell, Steven; Smith College School of Social Work; MA, USA.

S.B.405
BEHAVIORAL EFFECTS OF COMBINATION AZT+ALPHA INTERFERON TREATMENT IN HIV DISEASE. Ollo C*, Bridge TP*, Govoni Laura , Kenagy G*, Lane HC; *LCS NIMH: Building 10: Room 4c-418,: CC NIMH,: +LIR NIAID,: 9000 Rockville Pike, Bethesda, MD, USA: 20892.

S.B.406
PSYCHOLOGICAL TESTING TO DESIGN OR MODIFY TEACHING AND PSYCHOTHERAPEUTIC INTERVENTION WITH PATIENTS ON A CLINICAL TRIAL OF FOSCARNET FOR THE TREATMENT OF CMV RETINITIS. Williams, Judith; Wiggs, E.; Baird, B.; Miller, S.; Polis, M.; W.G. Magnuson Clinical Center, National Institutes of Health, Bethesda, MD, USA.

S.B.407
PSYCHOLOGICAL RESPONSE TO PARTICIPATION AND NON-PARTICIPATION IN A PLACEBO-CONTROL DRUG TRAIL FOR TREATMENT OF HIV INFECTION. Melroe, N. Holly*; Robiner, W.N.†; Campbell, S.‡; Rhame, F.*; *Univ. of Minnesota ACTU; †U. of M. Health Psychology Clinic; ‡St. Paul-Ramsey Medical Center, St. Paul, MN, USA.

S.B.408
TEACHING AND SUPPORTING PEOPLE WITH AIDS PARTICIPATING IN CLINICAL TRIALS. Bennett, Jo Anne; Holzemer, S.P.; Scherer, P.B.; Rudnicki, V.; New York University Division of Nursing, New York, NY, USA.

Pulmonary

S.B.409
LYMPHOCYTE SUBSETS IN BRONCHOALVEOLAR LAVAGE FLUID OF PATIENTS WITH ADVANCED HIV INFECTION AND DIFFUSE PULMONARY INFILTRATES. Rust, Michael G., Bergmann, L., Brodt, R., Helm, E.B., Meier-Sydow, J.; Div. of Pneumology, Div. of Hematology and Infectious Dis., Dept. Internal Medicine, Hospital of the J.W. Goethe-University Frankfurt/M FRG.

S.B.410
THE PATHOLOGICAL ASPECTS OF PLEURAL BIOPSIES IN THE PLEURO-PULMONARY MANIFESTATION OF AIDS. Soudre, Robert*; Batieno M.†; Ouedraogo K.†; Sanon H.*; Caulet T.‡; Sawadogo A.†.;: *Laboratory, Yalgado National Hospital, Ouagadougou, Burkina Faso, †Pneumophysiology Service, Yalgadoational Hospital, Ouagadougou, Burkina Faso, ‡Anatomical Pathology Laboratory, CHU Reins, France.

S.B.411
PNEUMOCYSTIS CARINII PNEUMONIA (PCP)-ASSOCIATED PNEUMOTHORAX. Lowy, Joseph; Garay, S., Kamelhar, D.; New York University Medical Center, NY, NY, USA.

S.B.412
NON INVASIVE MANAGEMENT IN THE OUT PATIENT DEPARTMENT OF FEVER AND BREATHLESSNESS IN HIV POSITIVE PATIENTS. Davidson, Craig; Leach, R.; O'Doherty, M.; Tang, A.; Nayagam, M.; Bateman, N.; UMDS, St. Thomas' Hospital, London, England.

S.B.413
ARE THE PULMONARY COMPLICATIONS OF AIDS CHANGING?. Garay, Stuart; Denuto, J.; Kamelhar, D.; Lowy, J.; New York University Medical Center, NY, NY, USA.

S.B.414
MODIFICATIONS OF PULMONARY FUNCTION TESTS AT DIFFERENT STAGES OF HIV INFECTION. Camus, Francoise; De Picciotto, C. ; Matheron, S. ; Perronne, C.; De Truchis,P.; Gerbe, J.; Girard, P.M.*; Bichat-Claude Bernard—Hospital, * Inserm U13, Paris, France.

S.B.415
PNEUMOTHORAX IN HOSPITALIZED AIDS PATIENTS. Gjesdal, Jo Leslie; Smith, MD; Chaisson, RE.; Johns Hopkins University, Baltimore, Maryland, USA.

S.B.416
ROUTINE SCREENING OF INDUCED SPUTUM FOR PCP AND AFB IN HIV INFECTED INDIVIDUALS WITHOUT AIDS. Kvale, Paul*; Rosen, M.†; Markowitz, N.*; Saravolatz, L.*, Hopewell, P.‡; *Henry Ford Hospital, Detroit, MI, USA, †Mt. Sinai Hospital, New York, NY, USA, ‡University of California, San Francisco, CA, USA.

S.B.417
THE SENSITIVITY OF EXERCISE OXIMETRY IN DETECTING DIFFERENT CAUSES OF RESPIRATORY INFECTION IN AIDS PATIENTS. Hawkins David; Smith, D; Gazzard, B.; Westminster Hospital, London, England.

S.B.418
THE PROGNOSIS IN HIV-INFECTED PATIENTS REFERRED TO BRONCHOSCOPY. RELATION TO BROCHOSCOPIC FINDINGS. Jensen, Birgitte Nybo; Gerstoft, J; Skinhoj, P.; Dept. of Infect. Dis, University Hospital, Copenhagen, Denmark.

90'

Antiretrovirals: Zidovudine (AZT)

S.B.419
OCCURRENCE AND TIMING OF ZIDOVUDINE TOXICITY IN ASYMPTOMATIC HIV INFECTED INDIVIDUALS WITH Koch, *Matthew A.*; Volberding, P.†; Pettinelli, C.‡; Booth, D.*; *Research Triangle Inst., Research Triangle Park, NC, †Univ. of Calif., San Francisco CA, ‡Nat. Inst. of Allergy and Infect. Dis., Bethesda, MD, USA.*

S.B.420
A PHASE I/II TRIAL OF ZIDOVUDINE, INTERFERON-ALPHA, AND GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR IN TREATMENT OF HIV-1 INFECTION. Davey Jr., Richard T.*; Davey V.*; Zurlo, J.*; Metcalf, J.*; Falloon, J.*; Polis, M.*; Kovacs, J.*; Zunich, K.*; Masur, H.*; Fauci, A.*; Lane, H.C.*; *NIAID Clinical Center, National Institutes of Health, Bethesda, Maryland, USA.

S.B.421
ZIDOVUDINE AND INTERLEUKIN-2 IN WR2 HIV INFECTED PATIENTS: EVIDENCE FOR STIMULATED IMMUNOLOGIC REACTIVITY AGAINST HIV. Bartlett, John A.; Blankenship K; Waskin H; Sebastian M; Shipp K; Weinhold K.; Duke University ACTU, Durham NC, USA.

S.B.422
EFFICACY AND TOXICITY OF ZIDOVUDINE (Z) IN EARLY AIDS-RELATED COMPLEX (ARC). Cohn, David*; Harrison, S.†; Miller, L.*; Andron, L.†; Gourley, P.*; Hannon, R.‡; Bakker, P.‡; Gates, R.‡; McManus, M.‡; Andrews, J.‡; *Denver Disease Control; ‡Fitzsimons Army Medical Center, Denver, CO, and ‡Burroughs-Wellcome Co., Research Triangle Park, NC, USA.

S.B.423
ZIDOVUDINE TREATMENT IN EARLY HIV INFECTION: LABORATORY STUDIES. Andron, Leo*; Andrews, J‡; Cohn, D.‡; Stewart, R.*; White, J.*; Harrison, S.*; McManus, M.‡; Gourley, P.‡; Hannon, R.*; Fitzsimons, Aurora, Colorado, ‡Burroughs Wellcome,Research Triangle Park, North Caroline, ‡Denver General Hospital, Denver, Colorado.

S.B.424
ACCUMULATION OF HIV-1 CIRCULAR VIRAL DNA TEMPORARILY HALTED BY ZIDOVUDINE. Lange, Joep; Jurriaans, S.; Keulen, W.; Portegies, P.; Goudsmit, J.; Human Retrovirus Laboratory, Academic Medical Center, University of Amsterdam, The Netherlands.

S.B.425
ACTG 050: ALTERNATING (ALT) AND INTERMITTENT (INT) DDC AND AZT IN THE TREATMENT OF PERSONS WITH ADVANCED HIV INFECTION AND HEMATOLOGIC INTOLERANCE TO AZT. Bozzette, Samuel*; Skowron, G.‡; Arrezo, J.‡; Spector, S.*; Pettinelli, C.‖; Richman, D.D.*, and the ddC Study Group* of the ACTG.; *U of Cal-San Diego, †Stanford, ‡Albert Einstein, ‖NIAID, *Northwestern U, George Washington U, Robert Wood Johnson, U Southern Cal, U Miami, Tulane U, U Minnesota, St. Lukes, Washington.

S.B.426
ACTG 106: PHASE I/II DOSE FINDING STUDY OF CONCURRENTLY ADMINISTERED DIDEOXYCYTIDINE (DDC) AND ZIDOVUDINE (ZDV,AZT). Meng, Tze-Chiang*; Boota, A.†; Fischl, M.A.‡; Spector, S.A.*; Richman, D.D.*; The NIAID-AIDS Clinical Trials Groups of *University of California San Diego, California and †University of Miami, Florida, USA.

S.B.427
DETERMINANTS OF SAFETY AND THERAPEUTIC RESPONSE IN PATIENTS TREATED WITH ZIDOVUDINE. Moore, Richard*; Creagh-Kirk, T.†; Keruly, J.*; Link, G.*; Tilson, H.‡; Chaisson, R.* and The ZVD Epidemiologic Study Group; *Johns Hopkins University School of Medicine, Baltimore, MD, USA; ‡Burroughs-Wellcome Company.

S.B.428
ZIDOVUDINE (ZDV) PHARMACOKINETICS IN AIDS PATIENTS RECEIVING GRANULOCYTE-MONOCYTE COLONY STIMULATING FACTOR (GMCSF). Morse, Gene D.*, Hewitt, R.*, Lawrence, W.*, Maliszewski, M.*, Bonnem, E.†, Poeisz, B.‡; University of Rochester AIDS Clinical Trials Unit, SUNY at Buffalo* and Syracuse‡ Satellites, Schering-Plough Research Group†, USA.

S.B.429
INTERACTIVE PHARMACOKINETICS OF ZIDOVUDINE AND PROPHYLACTIC OR THERAPEUTIC DOSAGES OF TRIMETHOPRIM-SULFAMETHOXAZOLE. Pazin, George J.; Ptacheinski, R.J.; Schillinger, B.; McMahon, D.K.; Armstrong, J.A.; Ho, M.; University of Pittsburgh, Pittsburgh, Pennsylvania, USA.

S.B.430
EFFECT OF IL-1, IL-6, GM-CSF, ERYTHROPOIETIN, AND LITHIUM ON IN VITRO TOXICITY INDUCED BY 3'-AZIDO-3'DEOXYTHYMIDINE ON HUMAN BONE MARROW PROGENITOR STEM CELLS: CFU-GM AND BFU-E. Gallicchio, Vincent Salvatore; Hulette, B.C.; Hughes, N.K.; Gass, C.; Doukas, M.A.; Lucille P. Markey Cancer Center, University of Kentucky Medical Center, Lexington, KY, USA.

S.B.431
ZIDOVUDINE THERAPY (AZT RX) DELAYS PROGRESSION TO AIDS IN INTRAVENOUS DRUG USERS (IVDUS) WITH ORAL THRUSH (OT). Friedland, Gerald H., Budner, N., Selwyn, P.A., Hartel, D., SchoeNbaum, E.E., Shaw, J.F.; Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY, USA.

S.B.432
ALTERED PHARMACOKINETICS OF ZIDOVUDINE IN FORMER IV DRUG-USING PATIENTS RECEIVING METHADONE. Schwartz, Edward L.; Brechbuhl, Anna-Barbara; Kahl, Patricia; Miller, Michael H.; Seiwyn, Peter A.; Friedland, Gerald H.; Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY, USA.

S.B.433
EVALUATION OF EFFICACY AND TOLERANCE OF 2 ZIDOVUDINE (AZT) DOSES (900 MG VS 1200 MG/D). A PROSPECTIVE RANDOMIZED STUDY. Carles Michel, Pradier, C., Durant J., Mondain V., Roger P.M., Bernard E., Dellamonica P.; University Hospital, Nice, France.

S.B.434
ERYTHROPOETIN SERUM-LEVELS IN HIV INFECTED PATIENTS WITH ANEMIA AND WITH/WITHOUT AZT TREATMENT. Scherer, Wolfgang; Ruf, B.; Pohle, H.D.; II. Department of Internal Medicine, Rudolf Virchow University Hospital (Wedding), FRG.

S.B.435
CONCURRENT ADMINISTRATION OF GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR AND ZIDOVUDINE IN PATIENTS WITH AIDS/ARC. Hewitt, Ross*; Lawrence, W.*; Maliszewski, M.*; Bonnem, E.†; Poiesz, B.‖; University of Rochester AIDS Clinical Trials Unit, SUNY at Buffalo* and Syracuse‡ Satellites, New York; and Schering-Plough Corporation† (in cooperation with Sandoz), Kenilworth, New Jersey, USA.

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S.B.436
GRANULOCYTE COLONY-STIMULATING FACTOR INCREASES NEUTROPHILS AND MONOCYTES IN ZIDOVUDINE-ASSOCIATED LEUCOPENIA. Van der Wouw, Poll; Van Leeuwen, R.; Lange, J.M.A.; Danner, S.A.; Dept. of Medicine (AIDS-unit), Academic Medical Center, University of Amsterdam, The Netherlands.

S.B.437
THE EFFECT OF R-HU ERYTHROPOETIN ON HIV P24 ANTIGEN EXPRESSION IN ANEMIC ZIDOVUDINE TREATED AIDS PATIENTS. Carey, John*; Jackson, B.*; Wallace, M.*; Lederman, M.*; Abels, R.†; *Case Western Reserve University, Cleveland, Ohio, (USA) †Ortho Biotech, Inc., Raritan, New Jersey, (USA).

S.B.438
ZIDOVUDINE PHARMACOKINETICS IN CHILDREN FOLLOWING I.V. AND/OR ORAL ROUTE. Diquet Bertrand*, Garraffo R.†, Blanche S.*, Deville A.†, Etienne S.D.*, Bidault R.‡.; *Pharmacologie Clinique, CHU Pitie-Salpetriere; Immunologie Pediatrique, CHU Necker †Pharmacologie et Pediatrie, CHRU Nice France Paris France ‡Laboratoires Wellcome France.

S.B.439
THREE YEAR PROSPECTIVE EVALUATION OF T CELL SUBSETS IN ASYMPTOMATIC HIV INFECTED INDIVIDUALS TREATED WITH ZIDOVUDINE. Tsoukas, Chris; Friedman, J; Fanning, M; Montaner, J; Wells, G; Falutz, J; Tostowaryk, W; Ruedy, J.; Multicentre AZT Toxicity Study. Canada. Montreal General Hospital.

S.B.440
ASSESSMENT OF ZIDOVUDINE THERAPY AND CONCURRENT OPIATE USE. MacCallum L. R.; Flegg, P.J.; Willocks, L. J.; Jones, M.E.; Coiwan, F. M.; Brettle, R.P.; Infectious Diseases Unit, City Hospital, Edinburgh,Scotland, U.K.

S.B.441
MOTOR PERFORMANCE OF HIV-POSITIVE PATIENTS UNDER AZT-THERAPY. Arendt, Gabriele R.*, Hefter, H.*, Elsing, C.†, Wendtland, B.*; *Department of Neurology and †Internal Medicine, Univ. of Duesseldorf, Duesseldorf, FRG.

S.B.442
COMPARATIVE ORAL DISPOSITION OF ZIDOVUDINE IN NEUTROPENIC AIDS PATIENTS AND ASYMPTOMATIC HEMOPHILIACS. Portmore, Amy; Morse G, Hewitt R, Reichman R.; University of Rochester AIDS Clinical Trials Unit, University of Rochester and the State University of New York at Buffalo, New York, USA.

S.B.443
EVALUATION OF SALIVARY CONCENTRATIONS OF ZIDOVUDINE FOR MONITORING DRUG THERAPY. Wintergerst Uwe*, Rolinski B*, Matuschke A#, Fuessl H#, Goebel FD, Roscher A, Belohradsky BH; *Children's Hospital and #Poliklinik of the L.-Maximilian University Munich, FRG.

S.B.444
SAFETY AND EFFECTS OF INTERLEUKIN-2 PLUS ZIDOVUDINE IN ASYMPTOMATIC INDIVIDUALS INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS. Schwartz, David H., Skowron, G., Merigan, T.C.; Division of Infectious Diseases, Stanford University Medical Center, AIDS Clinical Trials Unit, Stanford, CA, USA.

S.B.445
COMPLIANCE AND TOXICITIES OF LONG-TERM TREATMENT WITH ZIDOVUDINE (AZT) IN PATIENTS WITH SYMPTOMATIC HIV INFECTION. Simberkoff, M.; Hamilton, J.; Hartigan, P.; Day, P; Diamond, G.; Dickinson, G.; Drusano, G.; Finegold. S.; George, L.; Gordon, F.; Hawkes, C.; Jensen, P; Klimas, N.; Lahart, C.; Oster, C.; Smith, M.; Weinhold, K.; Wray, N.; Ziegler, J.; Zolla-Pazner S.; VA Cooperative Study Group on AIDS Treatment, NY, USA.

S.B.446
INABILITY TO DISTINGUISH BETWEEN 800MG ZDV/DAY AND PLACEBO BY WALTER REED/DOD CLASSIFICATION SCHEME OF PROGRESSION IN A DOUBLE BLIND STUDY OF DOD 2-5 WITH Harrison, Shannon*; Hannon, R.*; Cohn, D.‡; Andron, L.*; Gates, R.*; Andrews, J.†; Bakker, P.*; Gourley, P.‡; McManus, M.†; Miller, L.‡; *Fitz-simons, Aurora, CO; †Burroughs Wellcome, Research Triangle Park, North Carolina; ‡Denver General Hospital, Denver, Colorado.

S.B.447
LONG TERM EFFICACY OF ZIDOVUDINE IN ARC AND AIDS PATIENTS. Dournon Eric* Matheron S† Michon C‡ Leport C‡Rozenbaum W‖ and Claude Bernard ZDV Study Group; *Hopital R. Poincare, Garches, France †Hopital Claude Bernard, Paris ‡Hopital Louis Mourier, Colombes, ‖Hopital Rothschild, Paris, France.

S.B.448
ZIDOVUDINE (ZDV)—ASSOCIATED MYOPATHY IN A LARGE CLINIC POPULATION. Strauss, Debra K.; Simberkoff, M.S.; Leaf, H.L.; New York VA Medical Center (NYVAMC) and New York University Medical Center, New York, New York, USA.

S.B.449
LONG TERM TREATMENT WITH ZIDOVUDINE (!ACYCLOVIR) OF ASYMPTOMATIC HIV-I INFECTED SUBJECTS. Mulder, Jan*; De Wolf, F.†; Coutinho, R.A.*; Goudsmit, J.†; Lange, J.M.A.†; *Municipal Health Service, Amsterdam, The Netherlands, †Academic Medical Centre, University of Amsterdam, Amsterdam, The Netherlands.

S.B.450
ZIDOVUDINE TREATMENT IN HIV-INFECTED INTRAVENOUS DRUG-USERS—COMPLIANCE WITH LONG-TERM TREATMENT AND EFFICACY. Del Bono, Valerio, Marello, G., Anselmo, M., Canessa, A., Terragna, A.; Department of Infectious Diseases, University of Genoa, Genoa, Italy.

S.B.451
DOUBLE-BLIND DOSE-RESPONSE STUDY OF ZIDOVUDINE IN SERIOUS HIV INFECTION AND AIDS. NORDIC MEDICAL RESEARCH COUNCIL'S HIV THERAPY STUDY GROUP. Gotzsche, Peter C.; Coordination office: Department of Infectious Diseases M 7431, Rigshospitalet, Copenhagen, Denmark.

S.B.452
CANADIAN OPEN TRIAL OF ZIDOVUDINE (ZDV) IN PROGRESSIVE GENERALIZED LYMPHADENOPATHY (PGL) PATIENTS. Lebel, Francois; Houle, Linda; Fletcher, Malcolm; and the Canadian ZDV Collaborative Group.; Burroughs Wellcome, Inc., Kirkland, Quebec, Canada.

S.B.453
PHARMACOKINETIC ASPECTS OF A THERAPEUTIC DRUG MONITORING OF AZIDOTHYMIDINE IN AIDS PATIENTS. Mayerhofer Silvia*, Kupferschmidt R.,†Stingl G.*, Schmid R.†; *Dept.Dermatoly I, †Dept. of Psychiatry, University of Vienna Medical School, Vienna, Austria.

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S.B.454
PHARMACOKINETICS OF ZIDOVUDINE IN PATIENTS WITH LIVER CIRRHOSIS. Taburet, Anne-Marie*; Naveau, S.†; Zorza, G.*; Colin, J.N.*; Chaput, J.C.†; Singlas, E.*; *Clinical Pharmacy, Bicetre Hospital; †Gastroenterology, Beclere Hospital, Paris, France.

Other Antiretrovirals

S.B.455
PHARMACOKINETICS OF D4T (BMY-27857), A NEW ANTI HIV AGENT, IN PATIENTS WITH AIDS OR ARC ON A QID REGIMEN. Kaul, Sanjeev, Dandekar, K.A., Pittman, K.A., Murray, H., Weiss, W.; Bristol-Myers Squibb Company, Syracuse, NY, USA.

S.B.456
PHASE I STUDY OF 2',3'—DIDEHYDRO—2',3'—DIDEOXYTHYMIDINE (D4T) IN PATIENTS (PTS.) WITH AIDS OR ARC. Browne, Marcia J.; Roger Williams General Hospital, Brown University AIDS Program, Clinical Trials Group, Brown University, Providence, RI, USA.

S.B.457
OPEN STUDY OF TACRINE HYDROCHLORIDE IN HIV P24 ANTIGEN POSITIVE PATIENTS. Youle, Mike*; Cullen, V*; Jhumann, H†; Smith-Birchnall, C‡; Dalgleish, A‡; Gazzard, B*.; *Kobler Centre, London, England, †SHire Pharmaceuticals, Andover, England, ‡Northwick Park Hospital, London, England.

S.B.458
SEVEN MONTH FOLLOW UP OF TACRINE (THA) VERSUS ZIDOVUDINE (AZT) IN 103 COURSES OF TREATMENT IN 70 HIV INFECTED PATIENTS. Fredj, Gilles*, Jasmin, C.*, Barbier, M.†, Misset, J-L.*, Meyer, P.*, Kalifa, D.*; *Hopital P. Brousse Villejuif, Villejuif, France; †Hopital Universitaire, Paris, France.

S.B.459
PHASE I STUDY OF INTRANASAL PEPTIDE T: CLINICAL AND LAB RESULTS. Mayer, Kenneth*, Bridge, P.†, Moon, M.*, Linde, R.*, Roffman, M.‡; *Fenway Community Health Center, Boston, MA; †NIMH, NIH, Bethesda, MD; ‡International Drug Development Corp., Parsippany, NJ.

S.B.460
DOSE PROPORTIONALITY OF SUBCUTANEOUS AND INTRAVENOUS PHARMACOKINETICS OF RECOMBINANT SOLUBLE CD4 (ST4) IN HIV INFECTED PATIENTS. Fong, Kei-Lai; Webb, D.D.; Crysler, C.S.; Donnelly, M.; Looney, D.; Bartlett, J.; Department of Drug Metabolism, SmithKline Beecham Pharmaceuticals, King of Prussia, PA 19406, USA.

S.B.461
RENAL HANDLING OF SOLUBLE CD4 (ST4): A GAMMA SCINTIGRAPHIC AND AUTO-RADIOGRAPHIC EVALUATION. J. Perri, K.L. Fong, P.J. Bugelski, R. Kirsh; Departments of Drug Delivery, Experimental Pathology & Drug Metabolism SmitkKline and French Laboratores, King of Prussia, PA. 19406.

S.B.462
CHANGES IN ANTIBODY STATUS AMONG HIV SEROPOSITIVE PATIENTS UNDERGOING INTERFERON THERAPY. Dewar, Robin J.; Sarmineto, M.D.; Kennedy, P.E.; Lane, H.C.; Salzman, N.P.; Georgetown Univ., Washington, D.C., Natl. Institutes of Health, Bethesda, MD.

S.B.463
A MULTICENTER OPEN-LABEL STUDY OF SUBCUTANEOUSLY ADMINISTERED RECOMBINANT INTERFERON BETA (RIFN-BETA) IN PATIENTS AT RISK FOR PROGRESSION TO AIDS. Borucki, MJ*, Von Roenn, JH†, Williams, RN‡, and Richard B. Pollard*; *Division of Infectious Diseases, University of Texas Medical Branch, Galveston, Texas and †Section of Hematology-Onocology, ‡Dept. of Med., Northwestern University Medical School.

S.B.464
PHARMACOKINETIC DISPOSITION OF GLQ223 IN PATIENTS WITH AIDS AND ARC FOLLOWING INTRAVENOUS ADMINISTRATION. Gatti, Giorgio*; Kahn, J.†; Volberding, P.†; Turin, L.‡; Gambertoglio, J.*; *Division of Clinical Pharmacy, University of California, San Francisco, †Division of AIDS Activities, Dept. of Medicine, San Francisco General Hospital, San Francisco, ‡Genelabs, Foster City, California, USA.

S.B.465
THE SAFETY AND PHARMACOKINETICS OF GLQ 223 IN SUBJECTS WITH AIDS AND ARC: A PHASE I STUDY. Kahn, James*; Kaplan, L*; Gambertoglio J†; Arri, C*; Williams R‡; Lifson J‡; Volberding, P*.; *Division of AIDS Activities, Dept of Med., San Francisco Gen. Hosp and †Div of Clinical Pharmacy, Univ of CA, San Francisco, ‡Genelabs Inc.

S.B.466
TRICHOSANTHIN TREATMENT OF HIV DISEASE. Waites, Larry A.*; Levin, A.S.*; Starrett, B.A., Mayer, R.A.; Clegg, J.A.†; Price, M.R.†; Robins, R.A.†; Delaney, M.‡; Byers, V.S.†; Baldwin, R.W.†; Immunology Inc.* and Project Inform‡, San Francisco USA, and U. Nottingham†, Nottingham, England.

S.B.467
COMPARISON OF RIBAVIRIN VERSUS PLACEBO FOR PREVENTING THE PROGRESSION OF HIV INFECTED SUBJECTS FROM CDC STAGE III TO STAGE IV. Carne, Xavier and the Spanish Ribavirin Study Group; Spanish Ribavirin Study Group, Barcelona, Bilbao and Madrid, Spain.

S.B.468
A PHASE ONE INCREASING DOSE TRIAL OF ORAL RIBAVIRIN (RBV) IN PATIENTS WITH AIDS AND ARC. Crumpacker, Clyde S.*, Pearlstein G.*, Van Der Horst, C.†, Valentine, F.‡, Spector, S.‖, Mills, J.#; *Beth Israel Hospital, Boston, MA; †University of North Carolina, Chapel Hill, NC; ‡New York University, New York, NY; ‖University of California, San Diego, CA; #San Francisco Gen.Hospital & AIDS Clinical Group, NIAFD, San Francisco, CA, USA.

S.B.469
A PHASE II STUDY OF CARRISYN (C) (ACEMANNAN) ALONE AND WITH AZT AMONG SYMPTOMATIC AND ASYMPOTOMATIC HIV PATIENTS (P). Weerts, Danielle; De Wit, S.; Gerard, M.; Rahir, E.; Jonckheere, J.; Clumeck, N.; Div. of Infectious Diseases, St Pierre University Hospital, Brussels, Belgium.

S.B.470
EFFECT OF DIFFERENT ORAL PREPARATIONS AND PRESENCE OF OTHER MEDICATIONS ON THE PHARMACOKINETICS OF 2', 3'-DIDEOXYINOSINE. Hartman, Neil R; Yarchoan, R; Thomas, RV; Pluda, JM; Marczyk, KS; Broder, S; Johns, DG.; National Cancer Institute, Bethesda, MD, USA.

S.B.471
TREATMENT OF HIV INFECTION WITH 2', 3'-DIDEOXYINOSINE (DDI): LONG-TERM ACTIVITY PROFILE AND EFFECT ON HIV-INDUCED DEMENTIA. Yarchoan, Robert; Pluda, J.M.; Thomas, R.V.; Mitsuya, H.; Marczyk, K.; Brouwers, P.; Hartman, N.R.; Johns, D.G.; Broder, S.; National Cancer Institute, Bethesda, MD.

S.B.472
PHARMACOKINETICS OF VIDEX! (2',3'-DIDEOXYINOSINE, DDI) AFTER TWICE DAILY IV OR PO ADMINISTRATION TO PATIENTS WITH AIDS OR ARC. Knupp, C.A.*, Shyu, W. C.*,, Morgenthien, E.A.*, McClaren, C.†, Martin, R.R.†, Barbhaiya, R.H.*; *Bristol-Myers Squibb Company, Syracuse, NY and †Wallingford, CT, USA.

S.B.473
A PHASE I STUDY OF 2'-3'-DIDEOXYINOSINE (DDI) ADMINISTERED ORALLY TWICE DAILY TO PATIENTS WITH AIDS OR ARC AND HEMATOLOGIC INTEROLANCE TO AZIDOTHYMIDINE (AZT). Connolly, Kevin J.*, Allan, J.D.*, Fitch, H.*, Jackson-Pope, L.*, McLaren, C.†, Groopman, J.E.*; *New England Deaconess Hospital, Boston, MA; †Bristol-Myers Co., Wallingford, CT, USA.

S.B.474
TREATMENT WITH 2',3'-DIDEOXYINOSINE (DDI) GIVEN TWICE DAILY TO PATIENTS WITH CYTOMEGALOVIRUS (CMV) RETINITIS RECEIVING MAINTENANCE DHPG (GANCICLOVIR). Liebman, Howard A.*; Kunches, L.M.*; Saunders, C.A.*; Kelley, S.L.†; McCaffrey, R.P.*; Cooley, T.P*.; *Boston University School of Medicine, Boston, MA, USA, †Bristol-Myers/Squibb Company, Wallingford, CT, USA.

S.B.475
HIV PROVIRAL DNA IN PERIPHERAL BLOOD MONONUCLEAR CELLS (PBM) IN PATIENTS ON LONG TERM THERAPY WITH DIDEOXYINOSINE (DDI), AS ASSESSED BY QUANTITATIVE POLYMERASE CHAIN REACTION (PCR). Aoki, Shizuko; Yarchoan, R; Pluda, JM; Thomas, RV; Marczyk, K; Broder, S; Mitsuya, H.; Clinical Onocology Program, National Cancer Institute Bethesda, MD. USA.

S.B.476
THERAPY OF AIDS AND ARC WITH 2', 3' DIDEOXYINOSINE (DDI) GIVEN ONCE DAILY. RESULTS OF LONGTERM FOLLOW-UP. Cooley, Timothy*; Kunches, L.M.*; Saunders, C.A.*; Kelley, S.L.†; McCaffrey, R.P.*; Liebman, H.A.*; *Boston University School of Medicine, Boston, MA, USA; †Bristol-Myers/Squibb Company, Wallingford, CT, USA.

S.B.477
SENSITIVE RADIOIMMUNOASSAY FOR DIDEOXYINOSINE (DDI). Krogstad, Donald J.*; Stenglein, K.J.†; Murray, D.M.†; Eveland, M.R.*; and Gluzman, I.Y.*; *Washington University School of Medicine; †Sigma Chemical Company, St. Louis, MO, USA.

S.B.478
PHASE I STUDY OF THE SAFETY AND PHARMACOKINETICS OF RECOMBINANT HUMAN CD4 IMMUNOGLOBULIN (RCD4-IGP) ADMINISTERED BY INSTRAMUSCULAR (IM) INJECTION IN PATIENTS WITH AIDS AND ARC. Hodges, Teri L.*, Kahn, J.†, Kaplan, L.†, Groopman, J.*, Volberding, P.†, Bouvier, L.*, Mordenti, J.‡, Ammann, A.‡, Allan, J.D.*; *New England Deaconess Hospital, Boston, MA; †San Francisco General Hospital, San Francisco, CA; ‡Genentech, Inc., San Francisco, CA, USA.

S.B.479
PHASE I STUDY OF RCD4-IGG ADMINISTERED BY CONTINUOUS INTRAVENOUS (IV) INFUSION TO PATIENTS WITH ADIS OR ARC. Yarchoan, Robert*; Pluda, James M.*; Adamo, D.*; Thomas, R.V.*; Mordenti, J.†; Goldspiel, B.R.!; Ammann, A.J.†; Broder, S.*; *National Cancer Institute and !Clinical Center, Bethesda, MD, USA and †Genentech Inc. S. San Francisco, CA, USA.

S.B.480
SAFETY AND PHARMACOKINETICS OF INTRAVENOUS RECOMBINANT CD4 IMMUNOADHESIN (RCD4-IGG) (AIDS CLINICAL TRILS GROUP PROTOCOL 121). Collier Ann*, Katzenstein D†, Coombs R*, Holodniy M†, Mordenti J‡, Arditti D*, Ammann A‡, Merigan T†, Corey L*.; *University of Washington, Seattle, WA, †Stanford University, Palo Alto, CA, ‡Genentech, San Francisco, CA.

S.B.481
A PHASE I TRIAL OF RECOMBINANT HUMAN CD4-IMMUNOGLOBULIN (RCD4-IGG) IN HIV-1 INFECTION. Davey Jr., R.*; Davey, V.*; Polis, M.*; Falloon, J.*; Kovacs, J.*; Zunich, K.*; Ammann, A.†; Metcalf, J.*; Amantea, M.*; Masur, H.*; Fauci, A.*; Lane, H. Clifford*; *NIAID Clinical Center, NIH, Bethesda, MD; †Genentech, Inc., San Francisco, CA, USA.

S.B.482
PHASE I TRIAL OF 3'-AZIDO-2'3'-DIDEOXYURIDE (AZDU) IN PATIENTS WITH SYMPTOMATIC HIV INFECTION. Mitsuyasu, Ronald T*, Miles SA*, Wallenberg Joy*, Williams G† and Marcus Steve†; *UCLA AIDS Center, Los Angeles, CA and †Triton Biosciences, Alameda, CA.

S.B.483
A DOSE ESCALATION STUDY TO EVALUATE THE SAFETY, ANTI-VIRAL AND IMMUNOLOGICAL EFFECTS OF 3'-AZIDO-2',3'-DIDEOXYURIDINE (AZDU) IN PATIENTS WITH HIV-1 INFECTION. Polis, Michael*; Davey, R.*; Lee, D.*; Falloon, J.*; Kovacs, J.*; Metcalf, J.*; Amantea, M.*; Zurlo, J.*; Zunich, K.*; Rosenthal, Y.*; Wallenberg, J.†; Desai, A.†; Lane, H.*; Masur, H.*; *National Institutes of Health, Bethesda, MD; †Triton Biosciences, Inc., Alameda, CA, USA.

Immunomodulators and Cytokines

S.B.484
EFFECTS OF THYMOPENTIN ON DISEASE PROGRESSION AND SURROGATE MARKERS IN HIV INFECTION—A 1 YEAR STUDY. Thompson, Sumner E.*; Calabrese, L.†; Hirsch, R.L.‡; Longworth, D.†; Rehm, S.†; Kremer, A.B.†; Meyerson, L.A.‡; Goldstein, G.‡; *Emory University; †Cleveland Clinic and ‡Immunobiology Research Institute, Annandale, NJ.

S.B.485
TWENTY-FOUR WEEK DOUBLE BLIND EVALUATION OF THYMOPENTIN TREATMENT ON DISEASE PROGRESSION IN HIV INFECTED PATIENTS. Conant, Marcus*, Goldstein, G.†, Hirsch, R.L.†, Meyerson, L.A.†, Kremer, A.B.†, and the Thymopentin Multicenter Study Group; *University of San Francisco, San Francisco, CA, USA, †Immunobiology Research Institute, Annandale, NJ, USA.

S.B.486
INTENTION TO TREAT ANALYSIS DEMONSTRATES IMREG-1 DELAYS THE PROGRESSION TO AIDS IN ARC PATIENTS IN A 6-MONTH TRIAL. Zackin, Robert A.; Gottlieb, M.S.; Hillman, K.S.; Gottlieb, A.A.; Imreg, Inc., New Orleans, Louisiana and Cambridge, Massachusetts, USA.

S.B.487
RESULTS OF A PHASE I/II PLACEBO-CONTROLLED DOSE FINDING PILOT STUDY OF LENTINAN IN PATIENTS WITH HIV INFECTION. Abrams, Donald*; Greco, M.*; Wong, R.*; Goosby, E.*; Gorter, R.*; Gordon, M.†; Guralink, M.*; Kaneko, Y.†; *University of California San Francisco, California †Lenti-Chemico Pharmaceutical Laboratory, Inc., Teaneck, New Jersey, USA.

S.B.488
PHASE I STUDY OF DEHYDROEPIANDROSTERONE (E1-10) THERAPY IN SYMPTOMATIC HIV DISEASE. Dyner, Toby S.*, Lang, W.*, Geaga, J.V.*, Stites, D.†, Jacobson, M.A.‡; *Childrens Hospital of San Francisco; †University of California, San Francisco; ‡SCSF and San Francisco General Hospital; San Francisco, CA, USA.

S.B.489
A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF DIETHYLDITHIOCARBAMATE (DITIOCARB, IMUTHIOL) IN PATIENTS WITH ARC AND AIDS. Hersh, Evan M., Brewton, G.W., Abrams, D., Bartlett, J., Gottlieb, M., Landesman, S., Levine, A., Whiteside, M., Petersen, E., Zahradnik, J., Negron, C., Dupuy, J., Salmi, R., Caraux, J.; University of Arizona Cancer Center, Tucson, AZ, USA.

S.B.490
IMPROVEMENT IN T4 LEVEL AND DECREASE IN OPPORTUNISTIC INFECTIONS AND LYMPHOMAS (OI/L) IN ARC/PRE-ARC PATIENTS (T4=60-300) RECEIVING AMPLIGEN COMPARED TO PLACEBO. Strayer, David R.*; Brodsky, I.*; Pequignot, E.*; Miller, S.M.†; Schulof, R.S.‡; Simon, G.L.‡; Suhadolnik, R.‖; Reichenbach, N.‖; Strauss, K.*; Gillespie, D.H.*; and Carter, W.A.*; *Hahnemann Univ., Phila., Pa; †Baylor Col. Med., Houston, TX; ‡George Wash. Univ., Wash., DC.; ‖Temple Univ., Phila., Pa. USA.

S.B.491
A PHASE I STUDY OF AUTOLOGOUS, ACTIVATED CD8(+) LYMPHOCYTES EXPANDED IN VITRO INFUSED INTO PATIENTS WITH ADVANCED ARC OR AIDS (ACTG 080). Armstrong, John A.; Ho, M.; Herberman, R.; Elder, E.; Ferbas, J.; McMahon, D.; Gupta, P.; Rinaldo, C.; and Whiteside, T.; University of Pittsburgh, Pittsburgh, PA, USA.

S.B.492
THERAPY OF HIV INFECTION WITH AS-101 AND ZIDOVUDINE. Masur, H.*; Falloon, J.*; Ogata-Arakaki, D.*; Baseler, M.†; Davey, R.*; Polis, M.*; Kovacs, J.*; Lane, H.C.*; *Clinical Center/NIAID, National Institutes of Health, Bethesda, Maryland; †Program Resources Inc., Frederick, Maryland, USA.

S.B.493
HIV-1-INFECTED PATIENTS RESPOND FAVORABLY TO ORAL ACEMANNAN (ACE-M). McDaniel, H. Reg*; Carpenter, R.†; Kemp, M.‡; Kahlon, J.‖; McAnalley, B.†; *Dallas-Fort Worth Medical Center, Grand Prairie, Texas, U.S.A., †Carrington Labs., Irving, Texas, U.S.A., ‡Texas A&M University, College Station, Texas, U.S.A., ‖Southern Research Institute, Birmingham, Alabama, U.S.A.

S.B.494
RESTORED ANTI-P24 ANTIBODY AND CD4 LYMPHOCYTES BY THE CHINESE HERBAL, ANGINLYC, IN HIV SEROPOSTIVE MEN. Sankary, Timothy M.*, Zhang, B.†, Xu, G.†; *AIDS Prevention Center, San Francisco, CA, USA; †National Institute of Pharmacology and Toxicology, Beijing, China.

Other Treatments for HIV

S.B.495
ACTIVE IMMUNIZATION OF RECOMBINANT PRODUCED GP160 IN PATIENTS WITH EARLY HIV INFECTION: PHASE I TRIAL IMMUNOGENICITY AND TOXICITY. Redfield, Robert R.*, Davis, C.†, Birx, D.*, Polonis, V.*, Smith, G‡, Burke, D.*; *Division of Retrovirology, WRAIR; †Infectious Diseases, WRAMC; ‡MicroGenesys, Inc.; Walter Reed Army Institute of Research, Rockville, MD, USA.

S.B.496
THE EFFECT OF HIV+ SERA ON SOLUBLE CD4 BASE THERAPIES. Callahan, Larry N.*; Bagnato, M.*; Phelan, M.†; Norcross, M.*; *Food and Drug Administration, CBER, Division of Cytokine Biology; †Food and Drug Administration, CBER, Division of Virology.

S.B.497
THE USE OF MEDICINAL HERBS AMONG AIDS CLINIC PATIENTS. Kassler, William J.; Blanc, P; Greenblatt, R.; Robert Wood Johnson Clinical Scholars Program and Department of Medicine, University of California, San Francisco, USA.

S.B.498
EVALUATION BY PCR OF HIV-1 STATUS OF AIDS PATIENTS RECEIVING PASSIVE IMMUNOTHERAPY. Hewlett, Indira K.*; Epstein, J.S.*; Lee, S.F.*; Karpas, A.†; *DBBP, FDA, Bethesda, MD; †MRC Center, Cambridge, England.

S.B.499
LONG-TERM FOLLOW-UP ON THE EFFECTS OF PASSIVE IMMUNIZATION IN PATIENTS WITH ARC AND AIDS. Karpas, Abraham*, Hill F*, Youle M†, Gray J†, Gazzard B†; *Department of Haematology, University of Cambridge, Cambridge and †Westminster Hospital, London, UK.

S.B.500
PHASE I TRIAL OF HIV IMMUNE GLOBULIN (HIVIG) IN PERSONS WITH AIDS. Rhame, Frank S.*; Goodroad, B.*; Cummins, L.M.†; Fletcher, C.V.*; Henry, K.*; Shah, N.*; Condie, R.M.*; Balfour, H.H.*; Allain, J.P.†; *University of Minnesota, Minneapolis, MN; †Abbott Laboratories, Abbott Park, IL, USA.

S.B.501
PEPTIDE T PHASE I STUDY: IMMUNO/VIROLOGIC RESULTS. Heseltine, Peter*; Martin, J.*; Leedom, J.*; Bridge, P.†; *University of Southern California, Los Angeles, CA†National Institute of Mental Health, Bethesda, MD USA.

S.B.502
END-USER EVALUATION OF A NOVEL EXPERIMENTAL AIDS TREATMENT INFORMATION SERVICE. *Speer, Mitchell, *Kaplan, M. *Huff, R, *Beirn, T.; *American Foundation for AIDS Research (AmFAR), New York, NY, USA.

S.B.503
THE INFLUENCE OF PROPHYLACTIC SUBSTITUTION WITH INTRAVENOUSLY APPLICABLE IMMUNOGLOBULINS (IVIG) IN HIV INFECTED PATIENTS STAGE WR5-6 (CDC IV C). Brunkhorst, Ulrike, Beermann, M., Scheffel, D., Tschechne, B., Deicher, H. Schedel, I.; Medical School of Hannover, Hannover, FRG.

S.B.504
VIROXAN—A NEW THERAPEUTIC AGENT FOR THE CLINICAL MANAGEMENT OF ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS). Herman, Stephen, D.*; Herman, James, A.*; Reinhardt, Jeffrey Harriman†.; *Stephens Pharmaceuticals Group, Inc., Brea, California, USA †Marin Clinic of Preventive Medicine, San Rafael, California, USA.

A06

S.B.505
PEPTIDE T STUDIES: NEUROPSYCHIATRIC RESULTS. McGrail, Michael*; Heseltine, P.*; Eaton, E.*; Parker, E.*; Ingraham, L.†; Ruff, M.†; Pert, C.†; Bridge, P.†; and Goodwin, F.†; *University of Southern California, Los Angeles, CA; †National Institute of Mental Health, NIH, Bethesda, MD, USA.

Oncology

S.B.506
HOCKIN'S DISEASE IN INTRAVENOUS DRUG USERS (IVDU) WITH HIV INFECTION: A REPORT OF 27 CASES IN MADRID. Rubio, Rafael; Serrano, M; Flores, E; Buzon, L; Yebra, M; Escobar, Y; Pintado, V; Ga-Polo, I; Gil, A; Costa JR.; Cooperative Study Group: H. 12 Octubre; H. Ramon y Cajal; H. Gregorio Maranon.

S.B.507
HIV-ASSOCIATED LYMPHOMAS (HAL): REPORT OF 160 CASES FROM FRANCE. Roithmann, Sergio; Toledano M.; Tourani J.M.; Andrieu J.M.; Laennec Hospital, Paris, France.

S.B.508
THE EPIDEMIOLOGY AND CLINICAL FEATURES OF KAPOSI'S SARCOMA (KS) IN AFRICAN WOMEN WITH HIV INFECTION. Desmond-Hellmann, S.D.*; Mbidde, Edward K.†; Kizito, A.†; Hellmann, N.S.*; *University of California, San Francisco, California, USA; †Uganda Cancer Institute, Kampala, Uganda (UCI).

S.B.509
INTERFERON ALPHA-2B ASSOCIATED WITH ZIDOVUDINE IN PATIENTS (P) WITH AIDS-RELATED KAPOSI'S SARCOMA (KS): PRELIMINARY RESULTS. Hermans, P.; Sommereijns, B.; Payen, M.C.; Clumeck, Nathan; Div. of Infectious Diseases, St. Pierre University Hospital, Brussels, Belgium.

S.B.510
A RANDOMIZED TRIAL OF CHEMOTHERAPY WITH OR WITHOUT RECOMBINANT GRANULOCYTE MONOCYTE COLONY STIMULATING FACTOR (RGMCSF) IN HIV ASSOCIATED NON-HODGKIN'S (NHL) LYMPHOMA: EFFECT OF TREATMENT ON SERUM HIV P 24 ANTIGEN LEVELS. Kaplan, Lawrence*; Kahn, J*; Crowe, S*; Volberdin, P*; Grossber, H†; McManus, N*; Mills, J*.; Department of Medicine, San Francisco General Hospital*, Schering-Plough Corporation, Kenilworth, New Jersey, USA.

S.B.511
BLEOMYCIN IN TREATMENT OF AIDS RELATED KAPOSI SARCOMA. Guermonprez G, Katlama C, Caumes E, Brucker G, Rosenheim M, Gentilini M.; Infectious Diseases Department Pitie-Salpetriere Paris (France).

S.B.512
KAPOSI'S SARCOMA IN HIV-1 SERONEGATIVE HOMOSEXUAL MEN. Alvin E. Friedman-Kien1, Saltzman BR2, Cao YZ1, Mirabile M1, Li JJ1, Nestor M1, and Peterman TA3.; 1New York University Medical Center, NY NY, 2Beth Israel Medical Center, NY NY, 3Centers for Disease Control, Atlanta GA.

S.B.513
COMBINATION THERAPY WITH INTERFERON-A (IFN-A), ZIDOVUDINE (AZT), AND RECOMBINANT GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR (GM-CSF): A PHASE I TRIAL IN PATIENTS WITH AIDS-ASSOCIATED KAPOSI'S SARCOMA. Krown, Susan E.; Paredes, J.; Bundow, D.; Flomenberg, N.; Memorial Sloan-Kettering Cancer Center, New York, NY, USA.

S.B.514
KAPOSI'S SARCOMA AND AIDS—ANNUAL RATE AND SURVIVAL AT THE GAFFREE & GUINLE UNIV HOSP—1983-1989. Dias, Martha Guimaraes*; Quinhoes, EP*; Pacheco, RG*; Guimaraes, MDC†; Miguez, LA*; Morais-de-Sa, CA*.; *Gaffree & Guinle University Hospital, University of Rio de Janeiro (UNI-RIO), Brazil †Federal University of Minas Gerais; FIOCRUZ.

S.B.515
SURVIVAL OF 30 PATIENTS WITH AIDS RELATED KAPOSI'S SARCOMA (KS) TREATED WITH AZT AND ALPHA 2 A INTERFERON (IFN). Gonzalez-Canali, Gustavo; Louvet, C.; Navarro-Carrola, E.; De Gramont, A.; Demuynck, B.; Roussard Ph.; Krulik, M.; Hopital Saint-Antoine, Paris, France.

S.B.516
RESULTS OF TREATMENT OF KAPOSI'S SARCOMA IN PATIENTS WITH HIV INFECTION. Latif, Ahmed; Pozniak, A.; Neill, P.; Houston, S.; McLeod, D.; Bassett, M.; Ndemera, B.; Department of Medicine, University of Zimbabwe, Zimbabwe.

S.B.517
RISK OF HUMAN PAPILLOMAVIRUS (HPV) AND CERVICAL SQUAMOUS INTRAEPITHELIAL LESIONS (SIL) HIGHEST AMONG WOMEN WITH ADVANCED HIV DISEASE. Vermund, Sten H.*; Kelley, K.F.; Burk, R.D.; Feingold, A.R.; Schreiber, K.; Munk, G.; Schrager, L.K.; Klein, R.S.; Montefiore Med Ctr Albert Einstein College of Med, Bronx NY, USA (*now at DAIDS, NIAID, Bethesda MD, USA).

S.B.518
CERVICAL INTRAEPITHELIAL NEOPLASIA IN HIV SERO POSITIVE AND HIV SERO NEGATIVE DRUG ABUSERS. Pomeroy, Louise, Boylan, P., Murphy, J., Mulcahy, F.M.; Dept. of Genito-Urinary Medicine, St. James Hospital, Dublin, Ireland.

S.B.519
INCREASED FREQUENCY OF CERVICAL DYSPLASIA NEOPLASIA IN HIV-INFECTED WOMEN IS RELATED TO THE EXTENT OF IMMUNOSUPPRESSION. Friedmann W* Schaefer A* Mielke M* Schwartlaender B# Koch MA#; *Free University Berlin #AIDS-Center, Federal Health Office, Berlin, FRG.

S.B.520
OCCURRENCE OF MALIGNANCY IN THE SETTING OF ANOGENITAL WARTS IN THE GAY MALE POPULATION. Lavigne, Jeffrey; Thomas, G.; Geraci, A.; Levy, M.; Laser Medical Associates.

Staging and Disease Markers

S.B.521
QUANTITATION OF HIV DNA AS A PREDICTOR OF THE DISEASE. Oka, Shinichi; Urayama, K.; Hirabayashi, Y.; Ohnishi, K.; Goto, H.; Mitamura, K.; Kimura, S.; Shimada, K.; Institute of Medical Science, University of Tokyo, Tokyo, Japan.

S.B.522
LABORATORY ASSAYS FOR HIV: LACK OF CONCORDANCE BETWEEN HIV NEUTRALIZING ANTIBODY (NAD) AND IMMUNOPEROXIDASE (IP) TITERS. Colman, Neville*, Danon, A.D.*, Jacobson, J.M.†, Prince, A.M.†; *Mount Sinai Medical Center and Bronx VA Medical Center, New York, NY; †Lindsey Kimball Research Institute of the New York Blood Center, New York, NY; USA.

S.B.523
PROGRESSION OF HIV INFECTION AND CHANGES IN THE LIPID MEMBRANE STRUCTURE OF CD4(+) CELLS. Bast, Miriam R.; Rachlis, A.; Bruser, B.; Malkin, A.; Klein, A.; Sunnybrook Medical Center, University of Toronto, Toronto, Canada.

S.B.524
INTENSIVE LYMPHOCYTE MONITORING IN HIV+ PERSONS. Packard, Mark V.; Waskin, H.; Bartlett, J.A.; Shipp,K.; Duke University Medical Center, Durham, North Carolina, USA.

S.B.525
SHORT TERM VARIABILITY IN MEASUREMENT OF LYMPHOCYTE SUBSETS IN SERIAL DETERMINATION ON ASYMPTOMATIC HIV SEROPOSITIVE MEN. Denomme, Nicole*; Cameron, D.*; Garber, G.E.*; Kane, M.*; Hawley-Foss, N.*; Tsoukas, C.†; *Ottawa General Hospital, Univ. of Ottawa AIDS Study Group, Ottawa; †Montreal General Hospital, Montreal, Canada.

S.B.526
RELATIONSHIP BETWEEN OPPORTUNISTIC INFECTIONS (OI) AND MALIGNANCY (OM) IN HIV PATIENTS AND CD4 LYMPHOCYTE NUMBER. Crowe, Suzanne*; Stewart, K.†; Carlin, J.‡; Hoy, J.F.†; *MacFarlane Burnet Centre for Medical Research, Melbourne; †Fairfield Hospital, Melbourne; ‡University of Melbourne, Melbourne, Australia.

S.B.527
ABSOLUTE LYMPHOCYTE COUNT AS A SCREEN FOR CD4 COUNTS. Para, Michael F.; Fass, Robert J.; Pearl, Dennis K.; Williams, Tennyson; Whiteacre, Caroline C.; Ohio State University AIDS Clinical Trials Unit, Columbus, OH, USA.

S.B.528
CD8 LYMPHOCYTE SUBSETS PROVIDE PROGNOSTIC MEASURES OF HIV DISEASE PROGRESSION. Bekesi, J.G.*; Grenier, K.†; Roboz, J.*; Ullery, S.†; Mason, P.*; Wallace, J.*; Bach, B.A.†; *Mount Sinai School of Medicine, New York, New York; †Becton Dickinson Immunocytometry Systems, San Jose, California.

S.B.529
DISCRIMINATION OF CELLULAR CD8 EXPRESSION AND ASSIGNMENT TO T CELLS OR NK CELLS AFFECTS THE HELPER SUPPRESSOR RATIO IN NORMALS AND HIV INFECTED INDIVIDUALS. Bach, Bruce A.*; Campbell, D.*; Ullery, S.*; Robertson, M.J.†; *Becton Dickinson Immunocytometry Systems, San Jose, California, USA; †Duke University Medical Center, Durham, North Carolina, USA.

S.B.530
CD38 EXPRESSION ON T AND NK CELLS IN HIV INFECTED INDIVIDUALS USING THREE COLOR FLOW CYTOMETRY. Campbell, Diane*; Bach, B.A.*; Jackson, A.L.*; Ismail, E.†; Fahey, J.L.†; *Becton Dickinson Immunocytometry Systems, San Jose, California, USA; †CIRID, UCLA School of Medicine, Los Angeles, California, USA.

S.B.531
IMMUNE ACTIVATION MARKERS KPROGNOSTIC FOR AIDS PROGRESSION IN THE SAN FRANCISCO GENERAL HOSPITAL COHORT. Dennis Osmond; Shiboski, S.; Bacchetti, P.; Winger, E.; Moss, A.; University of CA, San Francisco and Immunodiagnostics Laboratory, CA, USA.

S.B.532
LONGITUDINAL ANALYSIS OF LABORATORY MARKERS DURING HIV INFECTION. Anderson, Robert E.*; Lang, W.*; Sheppard, H.W.†; Ascher, M.S.†; McRae, B.‡; Allain, J.P.‡; *ViRx, Inc., San Francisco, CA, USA; †California Department of Health Services (VRDL), Berkeley, CA, USA; ‡Abbott Laboratories, Abbott Park, IL, USA.

S.B.533
THE SPECIFIC IMMUNE REPONSE TO HIV AND IMMUNE SYSTEM ACTIVATION DEFINE THREE PATTERNS OF HIV DISEASE PROGRESSION. Sheppard, Haynes W.*; Ascher, M.S.*; Anderson, R.E.†; Lang, W.†; McRae, B.‡; Allain, J.P.‡; *California Department of Health Services (VRDL), Berkeley, CA, USA; †ViRx, Inc., San Francisco, CA, USA; ‡Abbott Laboratories, Abbott Park, IL, USA.

S.B.534
PROGNOSTIC FACTORS FOR CLINICAL PROGRESSION AND IMMUNOLOGIC CHANGES IN ASYMPTOMATIC HIV-INFECTED PERSONS. Lagakos, S.*, Volberding, P.†, Koch, M. ‡, Pettinelli, C.‖, Myers, M.‖; *Harvard University, Boston, MA, †University of California, San Francisco, CA, ‡Research Triangle Institute, Research Triangle Park, NC, ‖NIAID Rockville, MD, USA.

S.B.535
IMMUNOGLOBULINS (IGA) AND HIV INFECTION IN INTRAVENOUS DRUG USERS. Muga, R; Tor J; Paret, Alberto; Llibre, JM; Rey-Joly, C; Foz, M.; Hospital Germans Trias i Pujol. Universidad Autonoma de Barcelona.

S.B.536
ACHT/B ENDORPHIN AND ACHT/CORTISOL RATIO IN HIV HUMAN INFECTIONS: EARLY BIOLOGICAL MARKERS OF INFECTION IN SERONEGATIVE PARTNERS OF SEROPOSITIVE INDIVIDUALS. Le Goaster, Jacqueline*, Rougeot, C.†; Tekaia, F.†; Dormont, D.‡; Boileau, G.‖; Montagnier, L.†; Le Magnen, J.*; *Hopital Trousseau, University of Paris, †Pasteur Institute, Paris, ‡C.E.A., Fontenay Aux Roses, ‖University of Montreal, Montreal Canada, *College De France, Paris.

S.B.537
DEFECT IN TISSUE FACTOR EXPRESSION IN MONOCYTES CORRELATES WITH DISEASE PROGRESSION IN PATIENTS WITH ARC AND AIDS. Lathey, Janet L.*; Agosti, J.M.†; Spector, S.A.*; *University of California, San Diego, California, USA; †University of Washington, Seattle, Washington, USA.

S.B.538
HIV QUANTITATION PROCEDURES FOR VIROLOGIC END-POINTS IN CLINICAL TRIALS: RESULTS OF A MULTICENTER STUDY. Hollinger, F. Blaine*; Bremer, J.W.*; Coombs, R.†; Denny,T.†; Gupta, P.†; Meyer, W.†; Miles, S.†; Ohlsson-Wilhelm B.†; Poiesz, B.†; Richman, D.†; Schwartzer, T.†; Sninsky, J.†.; *Baylor College of Medicine, Houston, TX, USA; †NIH/NIAID/DAIDS/ACTG, Bethesda, MD, USA; ‡Cetus Corp., Emeryville, CA, USA.

S.B.539
PRODUCTIVE HIV INFECTION LEVELS IN THE COURSE OF ANTI-VIRAL THERAPIES. Jacques, Leibowitch*; Dournon, E.*; De Belilovsky, C.*; Paul, D.†; Decker, R.†; Mathez, D.*.; *Hopital Raymond Poincare, Garches, France, †Abbott Laboratories, North Chicago, Illinois, USA.

S.B.540
WHICH HIV ANTIGEN EIA DO YOU USE? YOUR THERAPUTIC AND CLINICAL EVALUATIONS MAY DEPEND UPON THE CHOICE. Bremer, James W.*; Haywood, M.D.*; Chu, L.*; Myers, L.E.†; Hollinger, F.B.*; *Baylor College of Medicine, Houston, TX, USA; †RTI, Research Triangle Park, NC, USA.

S.B.541

COMPARISON OF TWO SKIN TEST SYSTEMS FOR ANERGY IN INTRAVENOUS DRUG USERS ON METHADONE MAINTENANCE. Neshin, Susan, Bishburg, E.†.; *New Jersey State Department of Health, Division of AIDS Prevention and Control, Trenton, New Jersey, USA, †Newark Beth Israel Medical Center, Newark, New Jersey, USA.

S.B.542

HIV-1 REPLICATIVE ACTIVITY IN HEMOPHILIAC PATIENTS: ROLE IN CLINICAL PROGRESSION AND EFFECTS OF ZIODOVUDINE TREATMENT. Angarano G., Ciavarella N.!, Fiore J.R., Schiavoni M.!, Fico C., Ettorre C.; Clinic of Infectious Diseases, !Hemophilia Center, University of Bari, Italy.

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Determinants of Risk Behavior: Drug Users (cont. from Friday)

S.C.543
RISK FACTORS FOR SHOOTING GALLERY ATTENDENCE AMONG HETEROSEXUAL MALE INTRAVENOUS DRUG USERS IN BALTIMORE. Celentano, David D.*; Vlahov, D.; Cohn, S.; Anthony, J.C.; Nelson, K.E.; The ALIVE Study, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, MD, USA.

S.C.544
EFFECTS OF SAMPLING FRAME ON SUSPECTED RISK FACTORS FOR HIV-1 ANTIBODY AMONG IV DRUG USERS. Alcabes, Philip, Vlahov D, Anthony JC, Diamond E.; Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland, USA.

S.C.545
ETHNIC DIFFERENCES IN KNOWLEDGE AND HEALTH BELIEFS ABOUT AIDS IN NEW YORK CITY IV DRUG USERS. Goodloe, Linda P.; Tross, Susan; Abdul Quader, Abu; Des Jarlais, Don; Rosenblum, Andrew B.; Narcotic and Drug Research, Inc., New York, USA.

S.C.546
CONDOM USE AMONG HETEROSEXUALLY ACTIVE STREET RECRUITED IVDU'S IN NEW YORK CITY. Abdul-Quader, Abu S.*; Tross, S.*; Des Jarlais, D.C.†; *Narcotic and Drug Research, Inc., NY, NY, USA; †Beth Israel Med. Ctr., NY, NY, USA.

S.C.547
PERSISTENT SEXUAL RISK BEHAVIOR AMONG HETEROSEXUAL IVDU PARTNERS REGARDLESS OF HIV ANTIBODY STATUS. Carballo-Dieguez, Alex; Meyer-Bahlburg, H.; Ehrhardt, A.; Gorman, J.; El Sadr, W.; Sorrell, S.; Joseph, M.; McKinnon, J.; Torres, L.; HIV Center for Clinical and Behavioral Studies, Psychiatric Institute and Columbia Univ. NYC, NY, USA.

S.C.548
PEER CULTURE AND RISK REDUCTION AMONG STREET IV DRUG USERS. Neaigus, Alan*; Friedman SR*, Sufian M*, Stepherson B*, Goldsmith D*, Des Jarlais DC†, et al; *Narcotic and Drug Research, Inc., New York, NY, USA; †Beth Israel Medical Center, New York, NY, USA.

S.C.549
SOCIAL NETWORK CHARACTERISTICS AND AIDS RISK FACTORS AMONG INTRAVENOUS DRUG USERS IN PHILADELPHIA. Frey, Frederick W.*; Jagodka, M.*; Metzger, D.†; Woody, G.*; *University of Pennsylvania, Philadelphia, PA; †Veterans Administration, Philadelphia, PA.

S.C.550
PSYCHIATRIC SYMPTOMS SEROPOSITIVITY AND HIGH RISK BEHAVIORS AMONG INTRAVENOUS DRUG ABUSERS IN METHADONE TREATMENT. George Woody,Metzger, David; Druley, P.; DePhilippis, D.; Navaline, H.; McLellan, A. Thomas; O'Brien, C.P.; Center for studies on Addiction, Univ. of PA & PVAMC, Philadelphia, PA, USA.

S.C.551
A COMPARISON OF HIV RELATED RISK BEHAVIOUR BETWEEN A NON-CLINIC SAMPLE OF INJECTING DRUG USERS AND ATTENDERS AT A NEEDLE EXCHANGE CLINIC. McKeganey, Neil; Barnard, M.A.; Social Paediatric and Obstetric Research Unit, University of Glasgow, Scotland.

S.C.552
ASSESSMENT OF RISK BEHAVIOR AND HIV INFECTION IN IVDUS FROM A MINORITY COMMUNITY BASED ORGANIZATION HIV PREVENTION PROGRAM IN HOUSTON TEXAS. Hwang, Lu-Yu*, Brimlow, D.*, Lavine, C.*, Baaith, M.†; *University of Texas School of Public Health, Houston, TX; †Over the Hill, Inc., Houston, TX, USA.

S.C.553
RISK BEHAVIOR OF IV STIMULANT USERS. Andrew J. Saxon, Donald A. Calsyn; VA Medical Center and Department of Psychiatry and Behavioral Sciences, University of Washington, Seattle, WA.

S.C.554
NEEDLE SHARING BEHAVIOURS IN TREATMENT OF INJECTION DRUG USERS (IDU'S) TWO CANADIAN CITIES. Arshinoff, Rena*, Coates, R.A.*, Rankin, J.G.*, Millson, M.E.*, Lamothe, F.†, Soto, J.†, Vincellete, J.†; *University of Toronoto, Toronto, Ontario, Canada; †St. Luc, Montreal, Quebec, Canada.

S.C.555
KNOWLEDGE ON HIV AND RISK BEHAVIORS AMONG INJECTION DRUG USERS (IDU'S) IN MONTREAL (MTL) AND TORONTO (TOR). Brabant, Michel*, Bruneau, J.*, Lamothe, F.*, Soto, J.*, Arshinoff, R.†, Coates, R.†, Vincelette, J.*, Rankin, J.†, Fauvel, M.‡; *University of Montreal, Montreal, Quebec; †University of Toronto, Toronto, Ontario; ‡Laboratoire de Sante Publique de Quebec, Quebec, Canada.

S.C.556
PILOT PHASE OF A EUROPEAN COMMUNITY HIV STUDY ON RISK FACTORS, ATTITUDES AND PREVENTIVE COMPETENCES AMONG EUROPEAN IV DRUG USERS. Seyrer, Yann*, Papaevangelou, G.†; *World Health Organization (WHO) Collaborating Centre on AIDS, Paris, France;†Athens School of Hygiene, Athens, Greece.

S.C.557
SEXUAL LIFESTYLE AND PATTERN OF BEHAVIOUR CHANGE IN INJECTING DRUG USERS IN ITALY. Sasse, Hartmut,S., Rezza, G.R., Salmaso, S.S., Carbonari, P.C., Conti, S.C.; Instituto Superiore de Sanita, Rome, Italy.

S.C.558
DETERMINANTS OF INJECTING AND SEXUAL RISK BEHAVIOR AMONG HIV-NEGATIVE INJECTING DRUG USERS (IDU). Hartgers, C; van den Hoek, JAR; Coutinho, RA; van der Pligt, Joop.; Municipal Health Service, Amsterdam, The Netherlands.

S.C.559
PREVALENCE OF HIV INFECTION IN PATIENTS UNDER TREATMENT FOR COCAINE AND/OR OPIATE DEPENDENCE. A NATIONAL STUDY (SPAIN). Delgado-Rodriguez, M.*; Lopez, R.†; Bravo, M.J.†; Sanchez, J.†; Luengo, S.†; Torres, S. del.; *University of Granada, Granada,†State Office for the National Plan on Drugs.

S.C.560
SEXUAL RISK BEHAVIOUR AMONG DETAINED FEMALE DRUG USERS IN STOCKHOLM. Lauren, Kerstin; Kall, K.; Olin, R.; Dept. of Social Medicine, Karolinska Institute, Sundbyberg, Sweden.

S.C.561
RISK FACTORS FOR HIV INFECTION AMONG INJECTING DRUG USERS IN THE NORTH-WEST OF ENGLAND. Klee, Hilary; Manchester Polytechnic, Manchester, England.

Determinants of Risk Behavior: Blood Donors

S.C.562
WHY DO HIV-SEROPOSITIVE HETEROSEXUALS WHO ARE AWARE OF THEIR PARTNER'S RISK CONTINUE TO DONATE BLOOD?. White Carol*; Petersen, L.*; Doll, L.*; and the HIV Blood Donor Study Group†; *Centers for Disease Control, Atlanta, Georgia, USA †Investigators from 20 USA Blood Centers.

S.C.563
HIV POSITIVE BLOOD DONORS WHO DONATE AGAIN FOLLOWING NOTIFICATION. Cuevas, K.; Kessler, Debra; Hempstead, M.; The Greater New York Blood Program, New York, N.Y. USA.

S.C.564
A COMPARISON OF RISK FACTORS FOR HIV INFECTION AND HTLV-I/II INFECTION IN BLOOD DONORS IN THE GREATER NEW YORK CITY AREA. Hempstead, Margaret; Cross R.; Cuevas, K.; Roldan, M.; Kessler, D.; The Greater New York Blood Program, New York, N.Y. USA.

Determinants of Risk Behavior: Health Care Workers

S.C.565
RISK OF ADCQUIRED HIV INFECTION AT EMILIO RIBAS HOSPITAL. Abreu, E.S., Fernandes, M.E., Cavalcante, N.F., Klieman, T.E., Poivesana, M.N.; Carvalho, E.S.; Emilio Ribas Hospital, Health Institute, Reference and Training Center on Aids.

Determinants of Risk Behavior: Women, Children, and Adolescents

S.C.566
SEXUAL PRACTICES AND REPRODUCTIVE CHOICES OF HIV+ AND HIV- PREGNANT WOMEN IN A RURAL COMMUNITY WITH HIGH HIV SEROPREVALENCE IN THE UNITED STATES. Ellerbrock, Tedd*; Lieb, S.†; James, D.‡; Rogers, M.*; Harrington, P.‡; Bush, T.*; et al.; *Centers for Disease Control, Atlanta, Georgia, USA, †Department of Health and Rehabilitative Services, Tallahassee, Florida, USA, ‡Palm Beach County Public Health Unit, Florida, USA.

S.C.567
CLASSROOM INSTRUCTION AND HIV KNOWLEDGE AS PREDICTORS OF IV DRUG BEHAVIOR AMONG ADOLESCENTS: EVIDENCE FROM A NATIONAL SCHOOL-BASED SURVEY, 1989. Holtzman, Deborah*; Anderson, J.*; Kann, L.*; Arday, S.*; Ross, J.†; Kolbe, L.*; *Division of Adolescent and School Health, Centers for Disease Control, Atlanta, Georgia, USA; †Macro Systems, Inc., Silver Spring, Maryland, USA.

S.C.568
HIV-RELATED KNOWLEDGE, BELIEFS, AND BEHAVIORS AMONG A NATIONAL SAMPLE OF HIGH SCHOOL STUDENTS IN THE U.S., 1989. Kann, Laura*; Anderson, J.*; Holtzman, D.*; Ross, J.†; Kolbe, L.*; *Division of Adolescent and School Health, Centers for Disease Control, Atlanta, Georgia, USA. †Macro Systems, Inc., Washington, D.C., USA.

S.C.569
SURVEY OF SEXUALLY TRANSMITTED DISEASES (STD) AND DRUG ABUSE RISK FACTORS FOR HIV INFECTION IN INCARCERATED ADOLESCENTS. Morris, Robert; Re, O.; Baker, C.; Huscroft, S.; Essex, A.; Roseman, J.; County of Los Angeles/ Department of Health Services, Los Angeles, CA, USA.

S.C.570
HOMELESS ADOLESCENTS IN HOLLYWOOD: HIGH RISK BEHAVIORS FOR HIV EXPOSURE. Robertson, Marjorie J.*; Koegel, P.†; Grella, C.; *Alcohol Research Group, Berkeley, CA, USA; †Univ. of CA, Los Angeles, CA, USA.

S.C.571
PREVALENCE OF SEXUALLY TRANSMITTED DISEASES (STD) AND HIV IN A HOMELESS YOUTH MEDICAL CLINIC IN SAN FRANCISCO (S.F.). Shalwitz, Janet*; Goulart, M.*; Dunnigan, K.*; Flannery, D.†; *Dept. of Public Health and †Larkin Street Youth Center, San Francisco, CA.

S.C.572
DETERMINING FACTORS OF THE CHANGES IN INFORMATION, ATTITUDE AND PRACTICES CONCERNING STD AND AIDS. A PROSPECTIVE STUDY AMONG UNIVERSITY STUDENTS IN PARIS. Menares, J.; Echevarria, P.; Chwalow, J.*; INSERM Unite 263. Paris *INSERM U21.

S.C.573
CONDOM USE, MIS-USE, AND NON-USE AMONG HOMELESS YOUTH. Luna, G. Cajetan*; Brown, R.†; Eisenstein, E.‡; Justin, R.‖; *Mount Zion Hospital, San Francisco, California, USA; †San Francisco General Hospital, California, USA; ‡Hospital Pedro Ernesto, Rio de Janeiro, Brazil; ‖Fort Collins, Colorado, USA.

S.C.574
PREVALENCE AND PREDICTORS OF AIDS HIGH RISK BEHAVIORS AMONG MALE ADOLESCENTS IN DETENTION. Shafer, Mary-Ann*; Ekstrand, M.*/†; Shalwitz, J.*/†; Chaikind, J.*; Keogh, J.*/†; *Dept. of Pediatrics, Division of Adolescent Medicine, University of California; †Forensic Medicine, Department of Public Health; ‡Scholar, American Foundation for AIDS Research, San Francisco, CA, USA.

S.C.575
ALCOHOL AND CONDOM USE AMONG ADOLESCENTS. Hingson Ralph, Strunin L, Berlin B, Heeren T.; Boston University School of Public Health, Boston, Massachusetts, USA.

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S.C.576
CHANGES IN ADOLESCENT CONDOM USE, KNOWLEDGE AND BELIEFS ABOUT AIDS IN MASSCHUSETTS, 1986-1989. Berlin, Beth, Hingson, R, Strunin, L, Heeren, T.; Boston University School of Public Health, Boston, Massachusetts, USA.

S.C.577
DO BELIEFS ABOUT HIV, CONDOM USE, PREGNANCY AND STD'S PREDICT ADOLESCENT CONDOM USE?. Strunin, Lee, Hingson, R., Berlin, B., Heeren, T.; Boston University School of Public Health, Boston, MA, USA.

S.C.578
PSYCHOSOCIAL CORRELATES OF CONDOM USE AMONG NEW JERSEY COLLEGE STUDENTS. O'Leary, A.; Boccher-Lattimore, Daria; Jenmott, L.S.; Rutgers University, Newark & New Brunswick, NJ, USA.

S.C.579
HUMAN IMMUNODEFICIENCY VIRUS INFECTION AND HIV RELEVANT SEXUAL BEHAVIOR AMONG A HEALTH INNER-CITY HETEROSEXUAL ADOLESCENT POPULATION. Keller, S.; Bartlett J.; Schleifer, S.; Johnson, R.; Pinner, E.; UMDNJ-New Jersey Medical School, Newark, New Jersey, USA.

S.C.580
GAY AND RUNAWAY MALE ADOLESCENTS' SEXUAL RISK BEHAVIORS. Koopman, Cheryl A., Meyer-Bahlburg, H., Rotheram-Borus, M., Rosarioi, M., Henderson, R., Exner, T., Ehrhardt, A.; HIV Center for Clinical Behavioral Studies, New York State Psychiatric Institute of Columbia University, New York, NY, USA.

S.C.581
HIV/AIDS PREVENTION AND MULTIPLE RISK BEHAVIORS OF GAY MALE AND RUNAWAY ADOLESCENTS. Haignere, Clara; Rotheram-Borus, M.J.; Koopman, C.; Cristina, P.; Matthieu, M.; Burchfield, J.; Moraes, A.C.S.; Columbia University, HIV Center, NYS Psychiatric Institute, New York, NY.

S.C.582
TARGETING DETERMINANTS OF RISK PRIOR TO HIV-PREVENTION EDUCATION FOR YOUNG MEXICAN-AMERICAN ADOLESCENTS. Weiner, Rachel; Weiner, M.; Frihoda, T.; Hoppe, S.; Martinez, Jr., C.; University of Texas Health Science Center, San Antonio, Texas, USA.

S.C.583
THE HIV EPIDEMIC AND CHANGES IN THE USE OF CONDOMS AMONG NORWEGIAN ADOLESCENTS. Karft, P; Rise, J; Traeen, B.; National Institute of Public Health, Oslo, Norway.

S.C.584
ADOLESCENTS AIDS. CLINICAL AND SOCIODEMOGRAPHIC STUDY OF 725 ADOLESCENTS WITH RISK FACTORS. Perez Alvarez, T.; Ortiz, C.; Babin, F.; Lopez, R.; Colomo, C.; Bru, F.; Madrid Council—Spain.

S.C.585
SEXUAL CONTACT PATTERNS OF YOUNG PEOPLE IN SWEDEN—A RANDOM SAMPLE SURVEY. Giesecke, Johan*; Gothberg, M.*; Scalia-Tomba, G.*; Tull, P.†; *Karolinska Institute, Stockholm, †Dept. of Infectious Diseases, Visby, Sweden.

HIV Testing: HIV-1 Testing Strategies

S.C.586
ALTERNATIVE CONFIRMATORY STRATEGIES FOR THE DETECTION OF HIV-1 ANTIBODIES. Gaby Vercauteren*, H. Tamashiro†, G. van der Groen*, P. Piot*; *Institute of Tropical Medicine, Antwerp, Belgium; †WHO, Geneva, Switzerland.

S.C.587
TOWARDS AN INEXPENSIVE ALGORITHM FOR THE DETECTION OF ANTIBODIES TO HIV-1 IN BRAZIL. Bendet, I., Miller, R.E., Cruz, C.M., McGreevy, P.B., Araujo e Silva, I.P.S., Redfield, R.R.; Brazilian Army-US Army Research Group, Brazilian Army Institute of Biology, Rio de Janeiro, Brazil.

S.C.588
EFFICACY OF BLOOD ELUTED FROM FILTER PAPER FOR THE DETECTION OF ANTIBODY TO HIV-1 BY MICRO-ELISA, WESTERN BLOT ASSAY AND THE IMMUNOFLUORESCENT ANTIBODY TEST. Cruz, C.M., Miller, R.E., Bendet, I.; Brazilian Army—US Army Research Group, Brazilian Army Institute of Biology, Rio de Janeiro, Brazil.

S.C.589
WESTERN BLOT PATTERNS IN HIV INFECTED PATIENTS IN BRAZIL. Siller, Karen†; Ribeiro, T.T.*; Alves, C.B.*; Badaro, R.*; Ho, J.†; *Fed. Univ. of Bahia, Salvador, Brazil; †Cornell Univ. Med. College, NY.

S.C.590
COMPARATIVE EVALUATION OF PARTICLE AGGLUTINATION TEST (SERODIA) AND ENZYME LINKED IMMUNOSORBENT ASSAY FOR ANTI-HIV DETECTION. Joshi, S.H.*, Dumasia, A.N*. and Patil, R.S.*; Institute of Immunohaematology, Bombay, India.

S.C.591
COMPARISON OF TWO ENZYMATIC ASSAYS, ABBOTT AND KARPAS, TO DETECT HIV ANTIBODIES IN HIGH-RISK PATIENTS AND BLOOD DONORS. Sifuentes, J.; Chavez, B.; Lopez-Vidal, Yolanda; Hernandez, L.; Ruiz-Palacios, G.M.; Instituto Nacional de la Nutricion, Mexico City, Mexico.

S.C.592
HIV-1 TESTING POOLED BLOOD USING ELISA AND AGGLUTINATION METHODS. Monzon, Ofelia T.*; Paladin, F.J.E.*; Mohammad, S.S.A.*, Dimaandal, E.*; and Mitchell, S.†; *Department of Health Research Institute for Tropical Medicine, Philippines; †Family Health International, NC, USA.

S.C.593
EVALUATION OF AN HIV TESTING STRATEGY FOR FIELD LABORATORIES IN ZAIRE. Duale Sambe; K. Milenge, K. Mulanga2; S. Mitchell3; D. Hanson3; F. Behets2 F. Fisher3; P. Lamptey3.; 1. Basic Rural Health Care-Sanru, Kinshasa, Zaire. 2. Projet Sida, Kinshasa, Zaire 3. Aidstech, Family Health International, North Carolina, USA.

S.C.594
EVALUATION OF THE FILTER PAPER TECHNIQUE FOR HIV ASSAYS. Luo, Nkandu P., Sikazwe, N.N., Mtimavalye, L., Sichone, M., Merick, O.; University Teaching Hospital, Department of Pathology and Microbiology, School of Medicine, Lusaka, Zambia; and World Health Organization, Geneva, Switzerland.

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HIV Testing: New HIV-1 Tests

S.C.595
EVALUATION OF A RAPID SCREENING TEST (ABBOTT TESTPACK) FOR ANTIBODY TO HIV-1 IN DIVERSE POPULATION GROUPS. Brothers, Thola*; Kline, R.†, Kelen, G.*, Quinn, T.†.; *Johns Hopkins University, Baltimore, MD; †NIAID, NIH, Bethesda, USA.

S.C.596
EARLY DETECTION OF SEROCONVERSION WITH A RAPID, PEPTIDE BASED TEST. Huprikar, J. Krieger, M.S. Ferrera, C., Montana, J., Coleman, P., Phair, J.; Northwestern University Medical School, Chicago, Illinois, USA, and Genetic Systems Corporation, Seattle, Washington USA.

S.C.597
VALUE OF A POL EPITOPE IN A PEPTIDE-BASED SCREENING TEST. Cot Marie-Camille, Bissonnier, M.; Lesager, C.; Delagneau, J.F.; Diagnostics Pasteur, 92430 Marnes la Coquette, France.

S.C.598
FEATURES OF WEAKLY REACTIVE SPECIMENS RELATED TO: PERFORMANCE OF ANTI-HIV-1 ELISA ASSAYS. Garrett, Patricia E.*; Weiblen, B.†; Schumacher R.*; Hoff, R.†.; *Boston Biomedica, Inc., West Bridgewater, MA, USA, †TSRI, Massachusetts State Laboratory, Boston, MA, USA.

S.C.599
CLINICAL EVALUATION OF A RAPID EIA FOR DETECTION OFBODY TO HIV-1. Shockley, Robert; Matski, T.; Haynes, B.; Stoy, K.; and Lowery, K.; Murex Corporation, Norcross, GA, USA.

S.C.600
DEFINITION OF AUTOMATED BLOOD SCREENING SYSTEM (ABSS) USING AN IMMUNOBEAD FLOW ASSAY (IBFA) FOR SCREENING ANTIBODIES TO HIV. Lynch, James*, G. Wolf,* E. Chase,† M. Fulwyler,‡ M. Busch,‖,‡ and G. Vyas‡; *Trans-Med Biotech, South San Francisco, †Becton Dickinson, San Jose, ‡University of California, San Francisco, CA.

S.C.601
COMPARISON OF A SYNTHETIC PEPTIDE-BASED ELISA AND A RECOMBINANT ANTIGEN ELISA WITH A VIRAL LYSATE-BASED WESTERN BLOT FOR DETECTION OF SEROCONVERSIONS TO HIV. Galli, Richard A., Major, C., McLaughlin, B.; Ontario Ministry of Health, Toronto, Canada.

S.C.602
EVALUATION OF A RAPID 7 MINUTE ELISA FOR THE DETERMINATION OF ANTIBODY STATUS TO HIV-1. Aarnaes, Sandra*, Whiteside, J.†, MacDonald, R.*, Friedly, G.*, de la Maza, L.*; *Department of Pathology, University of California, Irvine Medical Center, Orange, CA, USA, †Disease Detection International, Irvine, CA, USA.

S.C.603
A COMPARISON OF 3 HIV ANTIGEN DETECTION KITS IN SEQUENTIAL SERA FROM HOMOSEXUAL MEN. McLaughlin, Bernadette J.†, Read, S.*, Coates, R.*, Francis, A.*, Major, C.†, Shepherd, F.*, Fanning, M.*, MacFadden, D.*, Johnson, J.K.*; *University of Toronto; †Ontario Ministry of Health; Toronto, Canada.

S.C.604
ABBOTT MATRIX: AN OBJECTIVE IMMUNOASSAY SYSTEM FOR HIV CONFIRMATION. Knigge, Kevin M*; Stephens, J.; Braun, B.; Daluga, C.; Dahlen, S.; Kapsalis, A.; Chan, E.; Schulze, W.; Abbott Laboratories, North Chicago, Illinois, USA.

S.C.605
DIAGNOSIS OF HIV INFECTION WITH A DUAL RAPID ASSAY SYSTEM AS AN ALTERNATIVE TO ELISA AND WESTERN BLOT TESTING: AN EVALUATION IN HIV SYMPTOMATIC AND ASYMPTOMATIC AFRICAN POPULATION GROUPS. Behets, Frieda*/†; Bishagara, K.*; Mama, A.*; Heyward, W.*; Brown, C.*/‡; Quinn, T.‡; *Project SIDA, Kinshasa, Zaire; †Institute of Tropical Medicine, Antwerp, Belgium; ‡NIAID, NIH, Bethesda, MD, U.S.A.

S.C.606
COMPARATIVE EVALUATION OF 2 FIRST GENERATION, 2 SECOND GENERATION AND 1 THIRD GENERATION ANTI-HIV ELISA KITS IN 3 ZAIRIAN POPULATION GROUPS. Bishagara, Kagoyire*; Behets, F.*/†; Disasi, A.*; Brown, C.*/†; Quinn, T.‡; *Project SIDA, Kinshasa, Zaire; †Institute of Tropical Medicine, Antwerp, Belgium; ‡NIAID, NIH, Bethesda, MD, U.S.A.

S.C.607
THE USE OF SYNTHETIC PEPTIDES FOR DIAGNOSTICS OF HIV-INFECTION. Khaitov, Rakhim, Sidorovich, I., Pavlikov, S., Nikolaeva, I., Ivaschenko, M.; Institute of Immunology, Ministry of Public Health, USSR, Moscow.

S.C.608
HIV RECOMBINANT PROTEINS AND SYNTHETIC PEPTIDES AS REAGENTS FOR SEROLOGICAL TESTS. Nickolaeva, Irina; Pavlikov, S.; Sidorovitch I.; Shevalier, A.; Vasiliev, A.; Arsenyan, S.; et al.; Institute of Immunology, Ministry of Public Health, Moscow, USSR.

HIV Testing: HIV-1 Tests of Urine and Saliva

S.C.609
PRESENCE OF HIV ANTIBODY IN DILUTED URINE USING HIV-1 EIA KITS HAVING IMPROVED SENSITIVITY. Susan L. Stramer; Downey, C.; Allain, J.P.; Abbott Laboratories, Abbott Park, Illinois, USA.

S.C.610
SENSITIVE AND SPECIFIC METHODS FOR DETECTING ANTI-HIV IN URINE. Parry John V*; Connnell JA*; Mortimer PP*; Duncan J†; Johnson AM‡; Hambling MH‖; Barbara J#; Evans, BA§.; *PHLS Virus Reference Laboratory, London, UK; †Wellcome Diagnostics, UK; ‡Middlesex Hospital, London; ‖PHLS Leeds, UK; #N. London Blood Transfusion Centre; §West London Hospital, UK.

S.C.611
EVALUATION OF SALIVA AS AN ALTERNATIVE TO BLOOD FOR HIV SEROPREVALENCE TESTING. Major, Carol†, Read, S.*, Coates, R.*, Francis, A.* McLaughlin, B.‡, Calzavara, L*, Shepherd, F*, Fanning, M.*, MacFadden, D.*, Johnson, J.K.*.; *University of Toronto, †Federal Centre for AIDS, ‡Ontario Ministry of Health, Toronto, Canada.

S.C.612
SALIVARY ANTI-HIV ASSAY BY ELISA TEST. Panmoung, Wattana*; Sirivichayakul, S.†, Chaisee,U.†, Cot, M.C.‡, Phanuphak, P.†; *Departments of Medical Technology* and Medicine†,Chulalongkorn University Hospital, Bangkok, Thailand and Diagnostic Pasteur‡, Paris, France.

S.C.613
ANALYSIS OF HIV ANTIBODIES IN SERUM VERSUS WHOLE SALIVA. Goldstein, Andrew S., Gavojdea, S., Gorter, R.,: Moss, A., McMillian, G., Ward, T.; Epitope, Inc., Portland V.A. Medical Center, Portland, Oregon, San Francisco General Hospital,: San Francisco, California, USA.

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HIV Testing: Western Blots

S.C.614
INDETERMINED HIV1 WESTERN BLOT PROFILES: INVESTIGATION OF THE DIFFERENT KINDS OF P25 REACTIVITIES. Delagneau, Jean-Francois.; Sanjuan, A.; Bissonnier, M.; Diagnostics Pasteur, 92430 Marnes la Coquette, France.

S.C.615
ATYPICAL WESTERN BLOT PATTERNS AND HIV I INFECTION. Mannella, Emilio*; Rosci, M.A.†; Miceli, M.*; Testi, M.*; Mirolo, M.*; Pezzella, M.†; *National Centre for Blood Transfusion of Italian Red Cross, Rome, Italy; †L. Spallanzani Hospital, Rome, Italy; †La Sapienza University, Rome, Italy.

S.C.616
HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1) ANTIBODY TESTING: ACCURACY OF WESTERN BLOT RESULTS. Schalla, William; Hearn, T.; Cross, G.; Blumer, S.; Taylor, R.; Valdiserri, R.; Centers for Disease Control, Atlanta, GA, USA.

S.C.617
A COMPARATIVE STUDY OF THE IMMUNOFLUORESCENT ANTIBODY (IFA) AND WESTERN BLOT (WB) CONFIRMATORY TESTS FOR HIV IN A HIGH RISK PATIENT POPULATION IN LOS ANGELES COUNTY (LAC). Rose, Thanne; Giles, M.; Ford, W.; Kerndt, P., Mirsalimi, H.; Barnes, R.; Waterman, S.; Los Angeles County Department of Health Services, AIDS Epidemiology Program, Los Angeles, CA, USA.

S.C.618
IMPACT OF COMMERCIAL BLOOD SPOT ELUTION BUFFERS ON WESTERN BLOTS USED IN THE CDC HIV SURVEY ON CHILDBEARING WOMEN. Granade, T., Phillips, S., Schochetman, G., George, R.; Centers for Disease Control, Atlanta, GA, USA.

HIV Testing: Polymerase Chain Reactions

S.C.619
EVALUATION OF THE POLYMERASE CHAIN REACTION (PCR) FOR THE DETECTION OF HIV PROVIRAL DNA IN PEDIATRIC SPECIMENS. Comeau, Anne M.*; Harris, J.†; Pelton, S.†; Kahleifeh, B.*; Brena, A.†; Weiblen, B.*; Hoff, R.*; *TSRI, Massachusetts State Laboratory, Jamaica Plain, MA, USA; †Boston City Hospital, Boston, MA, USA.

S.C.620
IMPROVEMENTS OF POLYMERASE CHAIN REACTION FOR DETECTION OF HIV ANTIGENS. Yamaquchi, Koushi; Ushijima, H; Tsuchie, H.; Shimizu, H.; Kitamura, T.; National Institute of Health, Musashimurayama-shi,Tokyo, Japan.

S.C.621
SENSITIVE DETECTION OF HIV-1 DNA ENRICHED BY MOLECULAR HYBRIDIZATION. Kato, Shingo; Nishimura, N; Takano, T.; School of Medicine, Keio University, Tokyo, Japan.

HIV Testing: Combined Assays

S.C.622
MULTICENTRIC CONTROL OF HIV1 AND HIV1 + 2 EIA TEST KITS LOTS IN BLOOD TRANSFUSION IN FRANCE. North, Marie-Louise; Noel, L. ; Courouce, A. M. and the Retrovirus Study Group of the French society of Blood Transfusion.; Strasbourg, Bas Ris France.

S.C.623
A SENSITIVE AND SPECIFIC ELISA FOR THE DETECTION OF ANTIBODIES TO HIV-1 AND HIV-2. Hill, Todd*; Viel, S.†; Johnson, J.*; Parks, E.†; Rolon, N.*; *Ortho Diagnostic Systems, Inc., Raritan, NJ, USA; †Johnson & Johnson Biotechnology Center, Inc., San Diego, CA, USA.

S.C.624
PERFORMANCES OF 7 ANTI-HIV1 + HIV2 ELISA KITS. Courouce, Anne-Marie; The Retrovirus Study Group of the French Society ofBlood Transfusion—Paris, France.

S.C.625
A NEW ANTI-HIV-2 SPECIFIC PEPTIDE BASED ELISA FOR THE DIFFERENTIATION BETWEEN ANTI-HIV-2 AND ANTI-HIV-1. Brust, Stefan; Krupka, U.; Stuber, W.; Behringwerke AG, Marburg, FRG.

S.C.626
EVALUATION OF A TEST FOR ANTI-HIV-1 AND ANTI-HIV-2 ANTIBODIES. Deckmann, Michael; Baumann, E.A.; Mous, J.; Bruester, H.; Burckhardt, J.J.; Guertler, L.; North, M.-L.:; F. Hoffman-La Roche Ltd, Basel, Switzerland; Institut fuer Blutgerinnung, Duesseldorf, Germany; Swiss Red Cross, Bern, Switzerland; Max von Pettenkofer-Institut, Munich, Germany; Centre Regional de Transfusion Sanguine, Strasbourg, France.

S.C.627
CROSS-REACTIVITY OF ANTI-HIV-2 POSITIVE SERUM IN: U.S. FDA LICENSED SCREENING TESTS FOR ANTI-HIV-1. Schumacher, Richard T.*; Howard J.*; Ayres, L.†; Pista, A.†; Avillez, F.†; Garrett, P.*.; *Boston Biomedica, Inc., West Bridgewater, MA, USA, †Instituto Nacional de Saude, Lisboa, Portugal.

S.C.628
CONFIRMATION OF ANTIBODIES TO HIV-1 OR HIV-2 USING RECOMBINANT ANTIGENS AND SYNTHETIC PEPTIDES. Pollet, D.E.; Van den Abeele, A.; Saman, E.; Peeters, D.; Van Heuverswyn, H.; Innogenetics NV, B-2000 Antwerp, Belgium.

S.C.629
PASSIVE HEMAGGUTINATION ASSAY FOR HIV-1 AND HIV-2 ANTIBODY DETECTION. Wang, J., Fang, X., Sun, Z., Zhang, J., Chen, P., Kang, Edward, Wang, C.; United Biomedical, Inc., Lake Success, NY, USA.

S.C.630
CROSS REACTIVITY OF HIV-1 AND HIV-2 POSITIVE SERA ON WESTERN BLOT. Porter Anne*, Kouadio J*, Maran M*, Damet G†, Lafontaine M-F*, Bretton G†, Odehouri K†, George R‡, De Cock KM* ‡; *Projet RETRO-CI, Abidjan, Cote d'Ivoire; †Comite National de Lutte contre le SIDA; ‡Centers for Disease Control, Atlanta.

S.C.631
DETECTION OF ANTIBODIES TO HIV-1 AND 2 WITH A RAPID PEPTIDE BASED AUTOMATED IMMUNOASSAY. Wong, Philip; Whiteley, G.; Conte, K.; Freeley, P.; Dray-Lyons, K.; Desplaines, K.; Metzmann, E.; PB Diagnostic Systems, Westwood, MA, USA.

S.C.632
EVALUATION OF A PEPTIDE-BASED EIA FOR THE DETECTION OF ANTIBODIES TO BOTH HIV-1 AND HIV-2. Fenouillet, E., Sorensen, A.M., Gluckman, J.C., Coutelier, A., Lacroix, Martial*; UER Pitie-Salpetriere, Paris, France, *IAF-BioChem Int., Inc., Mtl., Canada.

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S.C.633
A POOLING METHOD FOR ANTI-HIV TESTING IN ECUADOR. Leoro-Monroy, Galo*; Archbold, E.†; Sanchez, M.*; Herrera, C.*; Chiriboga, R.*; Weilbauer, F.*; *Ecuadorian Red Cross, Quito, Ecuador; †Family Health Intl., Research Triangle Park, NC, USA.

S.C.634
A SCREENING ASSAY OF ANTIBODIES TO HIV-1 AND HIV-2 USING RECOMBINANT ANTIGENS. Wu, Ping; High, C.; Troonen, H.*; Stramer, S.; Muecke, K.*; and Schoen, R.; Abbott Laboratories, North Chicago, Illinois, USA. *Abbott GmbH Diagnostika, Delkenheim, West Germany.

S.C.635
SENSITIVITY AND SPECIFICITY OF THIRD GENERATION ASSAYS FOR ANTI-HIV 1 AND 2. Lelie, Nico P.; Bakker, E.; Van der Poel, C.L.; Plaisier, A.A.D.; Reesink, H.W.; Central Lab. of the Netherlands Red Cross Blood Transfusion Service, Amsterdam, The Netherlands.

S.C.636
EFFICIENT DETECTION OF HIV-1 AND HIV-2 ANTIBODIES WITH SYNTHETIC PEPTIDES-BASED ELISA. Kozhich, Alexander*, Ivanov, V.*, Tichikin, L.*; Suvorova, Z.†; *Shemyakin Institute of Bioorganic Chemistry, USSR Academy of Sciences, Moscow, USSR, †Central Institute of Epidemiology, Moscow, USSR.

S.C.637
SENSITIVITY AND SPECIFICITY OF A COMBINATION ASSAY FOR HIV-1 ANTIBODY AND HBSAG. Wier, Marjorie*; Wood, J.*; Moss, L.†; and Senn, D.*; Pharmacia Diagnostics, Inc., Columbia, Marland, USA and Interstate Blood Bank†; Memphis, TN, USA.

S.C.638
HUMAN T-CELL LEUKEMIA VIRUS (HTLV) SERODIAGNOSTIC TESTING AMONG A COHORT OF IV DRUG USERS. Aboulafia, David*; Feigal, E.†; Moss, A.†; Murphy, E.†; Vranizan, K.†; Bennett, C.*; Blattner W.†; Slamon, D.*; *University of California, Los Angeles, CA, USA; †University of California, San Francisco, CA, USA; †National Cancer Institute, Bethesda, MD, USA.

S.C.639
ASSESSMENT OF HUMAN T-CELL LYMPHOTROPIC VIRUS TYPES I AND II ANTIBODY TESTING. Blumer, Sharon O., Hearn, T.L., Schalla, W.O., Cross, G.D., Valdiserri, R.O.; Centers for Disease Control (CDC), Atlanta, GA, USA.

HIV Testing: General Issues

S.C.640
AIDS KNOWLEDGE AMONG HISPANIC AMERICAN SUBGROUPS. Hardy, A.; Thornberry, Owen T.; Dawson, D.; National Center for Health Statistics, Hyattsville, MD, USA.

S.C.641
IMPACT OF A 1989 TESTING POLICY CHANGE IN ARIZONA: PRELIMINARY ANALYSIS. Hirano, Douglas; Englender, S.; Fleming, K.; England, B.; Spry, J.; Komatsu, K.; Moore, M.; Sands, L.; Arizona Department of Health Services, Phoenix, Arizona, U.S.A.

S.C.642
A THREE YEAR COMPARISON OF DEMOGRAPHIC TRENDS OF CLIENTS RECEIVING HIV ANTIBODY TESTING AND COUNSELING AT COOK COUNTY HOSPITAL, CHICAGO, ILLINOIS, U.S.A. Cadena, Rogelio*; Cabrera, I.†; Cohen, M.†; Sherer, R.*; Taylor, D.†; et al.; *The Cook County Hospital AIDS Prevention Service; †The Cook County Hospital Women and Children with AIDS Project, Chicago, IL.

S.C.643
HIV TESTING IN A STATEWIDE POPULATION-BASED COHORT. Watson, John C.*; Fleming, DW† Klockner, RP† ; Foster, LR†; *Centers for Disease Control, Atlanta, GA, USA, †State Health Division, Portland, OR, USA.

S.C.644
THE ARMY HIV FIVE YEAR TESTING EXPERIENCE: 1985-1990. O'Bryen, Barbara; Fuller, S.; Damato, J.; Redfield, R.; Burke, D.; Roberts, C.; Walter Reed Retroviral Research Group, Rockville, MD, USA.

S.C.645
AIDS NATIONAL SEROLOGY LABORATORY SYSTEM: THE BRAZILIAN EXPERIENCE. Souza, Dalair*; Reichen, I.*; Rodrigues, L.*; Bergamaschi, D.*; Munoz, F.*; Barros, E.†; *National Division of STD/AIDS—MOH, Brasilia-DF, Brazil; †National Division of Blood and Blood Components—MOH, Brasili-DF, Brazil.

S.C.646
FREE AND ANONYMOUS HIV TESTING CENTER OF NANTES, FRANCE: 1989 EXPERIENCE. Raffi, F.*; Milpied, B.*; Charonnat, Marie-Francoise*; Billaud, E.*; Ponge, A.†; Litoux, P.*; *C.I.S.I.H.; †D.D.A.S.S. Loire-Atlantique, Nantes, France.

HIV Testing: Operational Issues

S.C.647
RISK BEHAVIOR AND INDICATIONS OF RISK REDUCTION IN ALTERNATIVE TEST SITE CLIENTS. Truax, Steven R., Ramirez, A.R.; Office of AIDS, California Department of Health Services, Sacramento, CA, USA.

S.C.648
FACTORS THAT DETERMINATE AN INDIVIDUAL'S REPEATEDLY ASKING TO BE HIV TESTED. Garcia Patricia,Uribe Z.P.,Hernandez A.M.,Chavez P.F.,Sepulveda A.J.; Aids Information Center.Conasida.Mexico City.

S.C.649
CHARACTERISTICS OF PERSONS NOT RETURNING FOR HIV TEST RESULTS AND COUNSELING AT PUBLICLY FUNDED TEST SITES, U.S., 1989. Moore, Melinda, Bowen, G.S., Cahill, K., Kirby, C.D.; Centers for Disease Control, Atlanta, GA, USA.

S.C.650
MAXIMIZING RETURN AFTER GIVING A POSITIVE HIV RESULT. Spencer, D.; Pengelly, B.; Rekart, M.L.; Knowles, L.; British Columbia Centre for Disease Control, Vancouver, B.C., Canada.

S.C.651
FACTORS ASSOCIATED WITH FAILURE TO RETURN FOR HIV POST-TEST COUNSELING. Slutsker, Laurence*, McAlister, R.+, Klockner, R.,+ Fleming, D.+; *Division of Field Services, Epidemiology Program Office, Centers for Disease Control, Atlanta Georgia, U.S.A. +Oregon Health Division, Portland, Oregon, U.S.A.

HIV Testing: Disclosure of Test Results

S.C.652
A STUDY OF DISCLOSURE OF HIV ANTIBODY POSITIVE STATUS: RELATIONSHIP TO USE OF SERVICES AND NEED FOR SUPPORT. Brown Sharon; Barton, S; Cutland, D; Jadresic, D; Howard, L; Gazzard, B.; Westminster Hospital, London, England.

HIV Testing: Risks

S.C.653
STRESS MANAGEMENT AS BUFFER OF ANXIETY INCREMENTS AND IMMUNOLOGIC DECREMENTS DURING FIVE-WEEK PERIOD PRECEDING HIV-1 SEROSTATUS NOTIFICATION. Antoni, M.H.; August, S.; Baggett, H.L.; LaPerriere, A.; Schneiderman, N.; Fletcher, M.A.; University of Miami, Dept. of Psychology, Coral Gables, FL, USA.

S.C.654
DEPRESSIVE SYMPTOMS AFTER HIV ANTIBODY TESTING. Frances A, Jacobsberg L, Fishman B, Perry S; Cornell University Medical College, New York USA.

S.C.655
EFFECTIVENESS OF PSYCHOEDUCATIONAL INTERVENTIONS AFTER HIV ANTIBODY TESTING. Fishman B, Jacobsberg L, Frances A, Weiler P, Perry S; Cornell University Medical Center, New York USA.

HIV Testing: Counselor Training

S.C.656
EVALUATION OF HIV TEST COUNSELORS USING SIMULATED PATIENTS. Rakestraw, Phillip*, Andersen, H.†; *VA Medical Center, Tacoma, WA; †NIMH AIDS Training Project, University of Washington, Seattle, WA, USA.

S.C.657
NATIONWIDE TRENDS IN NUMBERS OF HIV TESTS AND POSITIVE TESTS AT PUBLICLY FUNDED COUNSELING AND TESTING SITES, U.S., 1988-89. Bowen, G.S., Moore, M., Cahill, K., Kirby, C.D.; Center for Prevention Services (HIV), Centers for Disease Control (CDC), Atlanta, GA, USA.

HIV Testing: Partner Notification

S.C.658
HIV PARTNER NOTIFICATION IN FLORIDA. Jones, Betsy*; Wroten, J.*; Sims, J.*; Witte, J.*; et al.; *Dept. of Health and Rehabilitative Services, Tallahassee, FL, USA.

HIV Testing: Drug Users

S.C.659
HIV ANTIBODY COUNSELING AND TESTING (CT) FOR INTRAVENOUS DRUG USERS AND THEIR SEXUAL PARTNERS UNITED STATES, 1988-89. Jones, T. Stephen, Moore, M., Cahill, K., Gardom, J.C., Poppe, P.O., Kirby, C.D., Bowen, G.S.; Centers for Disease Control, Atlanta, GA, USA.

S.C.660
HIV COUNSELING AND TESTING IN METHADONE PROGRAMS: EFFECT ON TREATMENT COMPLIANCE. Farley, Thomas*; Cartter, M.†; Hadler, J.†; *Div. of Field Services, CDC, Atlanta, USA; †CT Dept. of Health Services, Hartford, CT, USA.

S.C.661
IVDUS PSYCHOLOGICAL, BEHAVIORAL, ATTITUDINAL STATUS AND LEVEL OF KNOWLEDGE ABOUT HIV AFTER HIV TESTING AND EDUCATION. Dorus, Walter, Schaefer, M.R., Lentino, J., Pachucki, C., Schaaff, D.; Edward Hines, Jr. Hospital, Hines, IL, USA.

S.C.662
CHARACTERISTICS OF IVDUS WHO HAVE BEEN HIV TESTED. Roggenburg, Linda*; Sibthorpe, B.*; Tesselaar, H.*; Gould, J.†; Fleming, D.*; *Oregon Health Div., Portland, OR; †Multnomah County Health Dept, Portland, OR, USA.

HIV Testing: Adolescents

S.C.663
HIV+ ADOLESCENTS: HIV TESTING EXPERIENCES AND CHANGES IN RISK RELATED SEXUAL AND DRUG USE BEHAVIOR. Futterman, Donna; Hein, K.; Kipke, M.; Reulbach, W.; Clare, G.; Nelson, J.; Orane, A.; Gayle, H.*; Montefiore Med. Ctr., bronx, NY, USA; *CDC, Atlanta, GA, USA.

HIV Testing: Prenatal and Family Planning Clinics

S.C.664
COSTS AND BENEFITS OF PRENATAL HIV SCREENING. Kiefer, Renata, Washington, E., Hearst, N., Hulley, S.; Center for aIDS Prevention Studies, University of California, San Francisco, CA, USA.

S.C.665
PRENATAL SCREENING POLICIES FOR HIV ANTIBODY AT MAJOR OBSTETRIC CLINICAL CENTERS IN THE UNITED STATES. Stratton, P; Mofenson, Lynne; Willoughby, A; Pediatric, Adolescent and Maternal AIDS Branch, National Institutes of Child Health and Human Development (NICHD), Bethesda, MD USA.

S.C.666
RESPONSE OF PRENATAL CLINIC POPULATIONS TO VOLUNTARY HIV EDUCATION AND TESTING. Santana, Wanda*; Williams, N.M.†; Kline, A†; McNally, K.†; Goff, H.†; *Health Services of Hudson County, Jersey City, NJ; †New Jersey State Dept. of Health, Trenton, NJ, USA.

S.C.667
HIV TESTING IN A HIGH-RISK POST-PARTUM POPULATION. Caspe, William B.; Hand, I.; Ballard, C.; Bronx Lebanon Hospital Center (BLHC), Albert Einstein College of Medicine, Bronx, NY, USA.

S.C.668
ACCEPTABILITY OF SCREENING FOR HIV INFECTION AMONG WOMEN ATTENDING FAMILY PLANNING CLINICS IN NAIROBI, KENYA. Maggwa, Ndugga*; Hunter, D.†; Tukei, P.‡; Chewe, D.*; Mungai, J.*; Achola, P.‖; *University of Nairobi, Kenya; †Harvard University, Boston, MA, USA; ‡Kenya Medical Research Institute, Nairobi, Kenya; ‖Nairobi City Commission, Nairobi, Kenya.

S.C.669
HIV TESTING AND EDUCATION PROMOTE SAFER SEX AMONG URBAN WOMEN IN RWANDA. Lindan, Christina*; Allen, S.†; Nsengumuremyi, F.†; Black, D.*; Schwalbe, J.*; Levy, J.*; Hulley, S.*; *UCSF Center for AIDS Prevention Studies (CAPS), San Francisco, California †Project San Francisco, Kigali, Rwanda.

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S.C.670
PROGRAM OF HIV TESTING AT HOSPITAL ADMISSION (PHHA) FOR PREGNANT WOMEN IN LATIUM, ITALY. Miceli, Maria* and the Latium AIDS Collaborative Group.; *Regional Epidemiology Unit, Rome, Italy.

S.C.671
VOLUNTARY SCREENING OF HIV INFECTION IN ALL PREGNANT WOMEN. Irion Olivier, Rapin P.; Taban F.; Beguin F.; Department of Obstetrics and Gynecology, University Hospital, Geneva Switzerland.

HIV Testing: STD Clinics

S.C.672
CHARACTERISTICS ASSOCIATED WITH A LOW RETURN RATE FOR HIV POST-TEST COUNSELING AMONG CLIENTS IN A COMMUNITY-BASED SEXUALLY TRANSMITTED DISEASE CLINIC IN LOS ANGELES COUNTY. Nelson, Alvin; Alleyne, D; Rose, T.; Ford, W.; Reggans, L.; McKee, S.; Galvan, O.; Los Angeles County Department of Health Services, Los Angeles, CA, USA.

S.C.673
COMPARISON OF ACCEPTORS AND REFUSERS OF CONFIDENTIAL HIV TESTING AMONG PATIENTS IN SEXUALLY TRANSMITTED DISEASE CLINICS IN LOS ANGELES COUNTY. *Ford, Wesley; *Rose, T.; *Kerndt, P.R.; †Nahlen, BL.; *Los Angeles County Department of Health Services, AIDS Epidemiology Program, Los Angeles, California, USA, †Centers for Disease Control, Atlanta, GA, USA.

S.C.674
CHARACTERISTICS OF A HIGH RISK POPULATION REFUSING ROUTINE CONFIDENTIAL HIV TESTING OFFERED IN A SEXUALLY TRANSMITTED DISEASE (STD) CLINIC. Borden, Laura S.*; Wood, R.C.*; Hoffman, R.E.*; Mostow, S.R.†; Simms, C.W.†; *Colorado Dept. of Health (CHD); †Univ. of Colorado Health Sciences Center (UCHSC), Denver, CO, USA.

S.C.675
ARE STD CLIENTS AT HIGH RISK BEING TESTED FOR HIV IN THE STD CLINIC? DADE COUNTY, FLORIDA, 1988-1989. Otten, Mac W.*; Zaidi, A.*; Peterman, T.*; Wroten, J.†; *Division of STD/HIV Prevention, Centers for Disease Control, Atlanta, GA, USA; †Department of Health and Rehabilitative Services, Tallahassee, FL, USA.

S.C.676
TAILORING HIV PRE-TEST COUNSELING IN SEXUALLY TRANSMITTED DISEASE (STD) CLINICS ACCORDING TO ANTICIPATED NON-RETURN RATES IN SUBCATEGORIES OF PATIENTS. Moye, Johon; Kappes, R.; Kunches, L.; Wernes, B.; et al.; Mass. Dept. of Public Health, Boston, MA, USA.

Models for Behavior Change: Sexual Transmission

S.C.677
IMPACT OF FOUR HIV/AIDS PREVENTION PROGRAMS ON PSYCHOSOCIAL FACTORS THOUGHT TO FACILITATE RISK BEHAVIOR CHANGE. Galavotti Christine, Schnell DJ, O'Reilly KR, The AIDS Community Demonstration Projects; Centers for Disease Control, Atlanta, GA U.S.A.

S.C.678
SAFER SEX EDUCATION AND STD REINFECTION. Cohen, Deborah*; Dent, C.W.†; MacKinnon, D.†; *University of Southern California, Department of Family Medicine, Public Health Foundation, and LA County STD Program, †University of Southern California, Institute of Prevention Research, Los Angeles, California, USA.

S.C.679
SOCIAL NETWORKS IN THE TRANSMISSION OF HIV INFECTION. Woodhouse, Donald*; Potterat, J.*; Klovdahl, A.*; Darrow, W.†; Muth, S.*; Muth, J.*; *El Paso County Health Department, Colorado Springs, CO USA †Australian National University, Canberra, Australia ‡Centers for Disease Control, Atlanta, GA, USA.

S.C.680
A SURVEY OF ADULT BOOKSTORES: ASSESSING THE POTENTIAL FOR AIDS EDUCATION. Tilgner, Susan A., Coleman, D.A., Long, T.C.; Columbus Health Department, Columbus, OH, USA.

S.C.681
PREVENTING HIV INFECTION AMONG THE HOMELESS OF A MEDIUM-SIZE USA CITY: A PILOT PROJECT EMPHASIZING: EDUCATION, COUNSELING, AND TESTING. Copello, Gene*; Minton, R.†; Humbert, D.*; *Vanderbilt AIDS Project, Vanderbilt University, Nashville, TN, USA,; †The Salvation Army, Nashville, TN, USA.

S.C.682
STD/AIDS PREVENTION FOR RISK BEHAVIOR INDIVIDUALS (PREVINA): A HEALTH PROMOTION PROGRAMME UNDER WAY IN BRAZIL. De Souza, Paulo*; Rodrigues, L.G.M.*; De Paula, M.L.T.*; Costa, V.*; *National Division of STD/AIDS—MOH, Brasilia—DF, Brazil.

S.C.683
IN FRONT AIDS WHICH IS THE ALTERNATIVE FOR HIGH RISK POPULATION. THE EXPERIENCE OF KAOLACK IN SENEGAL. Bienvenu Ba, E.; Mboup, S.; Ndoye, I.; Diouf, O.; Gueye,: E.; Fall, S.; *Bureau of National M.S.T., Dakar, Senegal.

S.C.684
AIDS: DETERMINANTS OF SEXUAL BEHAVIOURAL CHANGE. Van Dyk, Alta; University of South Africa, Pretoria, South Africa.

S.C.685
WHEN PREVENTION FAILS: WHY DO THEY SEROCONVERT AFTER A PREVIUS COUNCELLING. Camoin, Nathalie J.*, Routy, J.P.*, Blanc, A.P.*, Morin, M.H.‡, Pont, J.M.†, Cappelaere, A.*; *Centre de depistage du VIH Hospital Cezanne, Aix en Provence; †Centre de Venerologie, Aix en Provence; ‡Laboratoire de Psychologie Sociale Faculte des Lettres Universite d'Aix, Marseille; France.

S.C.686
SEXUAL PRACTICES ASSOCIATED WITH INCREASED RISK OF HIV INFECT: THE DANGER OF SELF-DEFINED SAFER-SEX?. Messiah, Antoine*, Bucquet, D.†, Mettetal, J.-F.‡, Rouzioux, C.‡; *INSERM, Kremlin-Bicetre; †INSERM, Montpellier; ‡Hospital Necker, Paris; France.

S.C.687
AN OUTREACH PROGRAM TO PROMOTE SAFER SEX IN THE COMMUNITY. Heckmann, Wolfgang*; Gabbert, P.†; Gusy, B.†; Krauss, G.M.†; Seyrer, Y.†; Schrott-Ben Redjeb, G.†; *Federal Health Office, AIDS Research Center, Berlin FRG ‡Sozialpaedagogisches Institut Berlin, FRG.

S.C.688
COMPARISON OF FEAR AND HUMOR TACTICS IN THE UK NATIONAL AIDS CAMPAIGN. Sherr, Lorraine; Department of Psychology, St. Mary's Hospital, London W2 1NY.

S.C.689
EVALUATION OF FOCUSED COGNITIVE—BEHAVIOURAL INTERVENTION WITH HIV SEROPOSITIVE INDIVIDUALS. Hedge Barbara; Green, J; St Mary's Hospital, London, UK.

Models for Behavior Change: Condom Use

S.C.690
KNOWLEDGE AND AWARENESS OF AIDS AMONG PATIENTS AT A SEXUALLY TRANSMITTED DISEASE CLINIC. Farr, G.*; Magruder, C†; Foldesy, Robin*; Greenup, R.†; Staab, R.‡; *Family Health International, Durham, NC, USA, †Womack Hospital, Ft Bragg, NC USA, ‡Schmid Labs, Little Falls, NJ, USA.

S.C.691
CONDOM PROTECTION TO GAY MEN IN MEXICO: WHY FOCUSSING ON LIFESTYLE OF TARGET GROUP MAY NOT WORK. Ramah, Michael*; Izazola, JL†; Ramos, M†; Valdespino, JL†; *AIDSCOM/Porter Novelli, Washington,DC USA †CONASIDA, Mexico City, Mexico.

S.C.692
STUDY ON POSITIONING AND PACKAGING OF CONDOMS FOR PREVENTION OF AIDS IN HETEROSEXUAL MALES IN MEXICO CITY. Palacios, Manuel M., Izazola, J., Ramos, M., Ramah, M., Valdespino, J.; Mexico Ministry of Health, Mexico City, Mexico.

S.C.693
INTERVENTIONS FOR CONDOM USE SKILL DEVELOPMENT IN THE EASTERN CARIBBEAN. Woods, W*; Helquist, Michael*; McCombie, S.†; Mahabir, B‡; Cleghorn, F‖; Renaud, D* *CAREC, Trinidad and Tobago; *: AIDSCOM/AED, Washington DC;: †AIDSCOM/U. of Pennsylvania;: ‡Ministry of Health, Trinidad & Tobago;: ‖U. of the West Indies, Trinidad and Tobago;.

S.C.694
IMPACT OF HIV TESTING ON CONDOM/SPERMICIDE USE AMONG HIV DISCORDANT COUPLES IN AFRICA. Tice, Jeffrey*; Allen, S.†; Serufilira, A.†; Van de Perre, P.‡; Ziegler, J.*; Hulley, S.*; *UCSF Center for AIDS Prevention Studies (CAPS), San Francisco, †Project San Francisco, Kigali, Rwanda; ‡National AIDS Prevention Program, Kigali, Rwanda.

S.C.695
HIGH CONDOM UTILIZATION AND LOW SEROCONVERSION RATES SUCCESSFULLY SUSTAINED IN 175 MARRIED COUPLES IN ZAIRE WITH DISCORDANT HIV SEROLOGY; OBSERVATIONS AFTER 2 YEARS OF FOLLOW-UP. Jingu, Muana*; Assina, Y.*; Doppagne, A.†; Mbuyi, K.*; Mbu, L.*; Mokwa, K.*; Ryder, R.*/‡.; *Project SIDA, Kinshasa, Zaire; †BCZ, Kinshasa; ‡CDC, Atlanta, GA.

S.C.696
SOCIAL MARKETING OF CONDOMS TO PERSONS PRACTICING HIGH-RISK BEHAVIOR IN ZAIRE. Spilsbury, James C.*; Price, J.†; Ferreros, C.†; Sokal, D.*; Ntsomo, P.‡; *Family Helath Intl., Research Triangle Park, NC; †Population Services Intl., Kinshasa, Zaire; ‡Univ. of Zaire, Kinshasa, Zaire.

S.C.697
SOCIAL MARKETING OF CONDOMS FOR AIDS PREVENTION INDEVELOPING COUNTRIES: THE ZAIRE EXPERIENCE. Ferreros, Carlos*; Mivumbi, N.*; Kakera, K.*; Price, J.*; *Population Services International/Project de Marketing Social, Kinshasa, Zaire.

S.C.698
USE AND MISUSE OF CONDOMS. Chan Chee, Christine*; De Vincenzi, I.*; Sole-Pla, M.*; Pialoux, G.†; Brunet, J.B.*; *WHO Collaborating Centre on AIDS, Paris; †Pasteur Institute Hospital, Paris, France.

Models for Behavior Change: Homosexual and Bisexual Men

S.C.699
A FOUR-SAMPLE COMPARISON OF SEXUAL AND RISK-REDUCTION BEHAVIORS OF GAY/BISEXUAL MEN. Wolitski, Richard J.*, Martin, D.J.*/†, Rhodes, F.*; *AIDS Research & Education Project, California State Univesity, Long Beach, CA †Harbor-UCLA Medical Center, Torrance, CA USA.

S.C.700
REINFORCEING SAFER SEX AND PREVENTING RELAPSE TO HIGH-RISK BEHAVIORS AMONG GAY MEN. DeMayo, Michael, J.*; Miller, R.*; *Gay Men's Health Crisis, Inc., New York, New York, U.S.A.

S.C.701
EVALUATION OF A SAFE SEX WORKSHOP IN A HOMOSEXUAL AND BISEXUAL POPULATION IN MEXICO CITY. Avila, Carlos*, Mueller, N.†, Mendez, G.*, De Caso, L.E.*, Hernandez, M.*, Sepulveda, J.*; *Directorate of Epidemiology, Secretariat of Health, Mexico D.F., Mexico; †Harvard School of Public Health, Boston, MA, USA.

S.C.702
HOMOSEXUAL MEN (HOS) AND THE USE OF CONDOMS DURING ORAL AND ANAL INTERCOURSE. Sarna, Seppo; Valle, S-L; University of Helsinki, Finland.

S.C.703
CASUAL ANALYSIS OF AIDS-RELATED HEALTH BEHAVIOR: DIFFERENCES IN PROTECTION-MOTIVATION OF HOMOSEXUALS AND HETEROSEXUALS. Van der Velde, Frank Vander Pligt, J.; Municipal Health Service of Amsterdam, Amst., The Neth Univ. of Amst. Amst., The Nether.

Models for Behavior Change: Women

S.C.704
EFFECT OF COHERENCE, SELF ESTEEM AND SUPPORT-AVAILABLE AS RESOURCES AGAINST EMOTIONAL AND PHYSICAL DISTRESS AND HIGH RISK BEHAVIORS IN MINORITY WOMEN. Nyamathi, Adeline; Flaskerud, Jacquelyn; University of California, Los Angeles, USA.

S.C.705
ADDRESSING PSYCHOLOGICAL BARRIERS TO THE PREVENTION OF HIV INFECTION IN HIGH-RISK WOMEN. Tunstall, Chrystal*, Cooper, F.†, Oliva, G.‡, Stein, E.‡, Kegeles S.*, and Darney, P.*; *University of California, San Francisco, †Communication Technologies, ‡San Francisco Department of Public Health, San Francisco, CA, USA.

S.C.706
FACTORS INFLUENCING EXPERIENCED AND INEXPERIENCED COLLEGE WOMEN'S INTENTION TO TELL THEIR PARTNERS TO USE CONDOMS. Middlestadt, Susan E.* & Fishbein, M.†; *University of Illinois, Champaign-Urbana, USA and National AIDS Information and Education Program, Centers for Disease Control, Atlanta, GA, USA †University of Illinois, Champaign, Urbana, IL, USA.

C.707
'DS EDUCATION FOR MINORITY, LOW-INCOME WOMEN: A JBLIC HOSPITAL AND JAIL BASED PREVENTION PROGRAM ' CHICAGO. Boxer, Andrew*, Cook, J.*; Cohen, M.†; Taylor, †; Camarigg, V.*; *Michael Reese Hospital, Chicago, Il., USA, ook County Hospital, Chicago, Ill., USA.

C.708
EPRODUCTIVE CHOICES OF WOMEN AT RISK FOR HIV FECTION. Cowan, Jane; Kotloff, K.; Watkins, C.; Johnson, J.; ger, L.; University of Maryland School of Medicine; ltimore, MD. USA.

C.709
OVE ME...LOVE ME NOT": DEVELOPMENT OF A NATIONAL MPHLET ON AIDS FOR WOMEN IN CANADA. Hankins, C.*; robow, G.*; Lai-Tung, MT.*; Roy, Jean Lawrence*; Jones, B.†; nslie K. †; Sourdif, I.†; *Centre for AIDS Studies, Community alth Department, Montreal General Hospital, Montreal, deral Centre for AIDS, Ottawa, Canada.

C.710
INICAL AND IMMUNOLOGIC FEATURES IN HIV+ WOMEN 'OM 3 DISTINCTIVE BEHAVIORAL RISK GROUPS: A 'OSPECTIVE STUDY. Leibman, Bryan*; Imam, N.*; Danforth, ; Gupta, A.*; Srinivasan, R.*; Carpenter, C.*;: *Brown iversity AIDS Program, Providence, Rhode Island, USA.

C.711
OUNSELLING OF WOMEN WITH HIV INFECTION: EFFECT V CONTRACEPTIVE PRACTICE AND PREGNANCY. Kiragu ', Temmermran M.*!, Wamola I.*, Plummer F.A.+, Piot P.!; niversity of Nairobi, Kenya: +University of Manitoba, nnipeg, Canada; !Institute of Tropical Medicine, Antwerp, lgium.

C.712
OMEN-SPECIFIC AIDS-PREVENTION—RECENT STUDIES IN IE FRG AND THEIR POLITICAL CONSEQUENCES. ffan,Elfriede*, Leopold,B.*; *Sozialpaedagogisches Institut rlin, Berlin, FRG.

C.713
TEMPS TO OBTAIN SPERMATOZOA CONCENTRATES WITH W INFECTIVITY FOR EJACULATES OF HIV+ SUBJECTS. nprini, Augusto E.; Vucetich A.; Garbo S.; Morandi E.; pienza F.; Levi Setti P.; Bozzo M.; Ravizza M.; Taglioretti A.; pelli E. and Pardi G.; Universita di Milano, Italia.

'odels for Behavior Change: 'x Industry Workers

C.714
FECTS OF CONDOM-SKILLS TRAINING AND HIV TESTING / AIDS PREVENTION BEHAVIORS AMONG SEX WORKERS. rby, N.*, Barchi, Peter†, Wolitski, R.‡, Smith, P.‡, and Martin, ; *Long Beach Dept. of Health & Hum. Svcs., Long Beach, , USA; †AIDS Research & Education Project, California State iversity, Long Beach, CA; ‡Harbor-UCLA Medical Center, rance, CA.

C.715
E NEVADA LEGAL BROTHEL SYSTEM AS A MODEL FOR DS PREVENTION AMONG FEMALE SEX INDUSTRY ORKERS. *Reade, Russell; †Richwald, Gary; ‡Williams, Nancy Nevada Brothel Association, Pahrump, Nevada, USA. iversity of California, Los Angeles, California, USA. iversity of California, Los Angeles, California, USA.

C.716
GACAO PROGRAMM: INFORMATION AND PREVENTION R MALE PROSTITUTES IN RIO DE JANEIRO, BRAZIL. Longo, Paulo H.*; Periera, L.*; Vasconcellos, L.E.*; Oliveira, V.A. Liberalli, M.*; Van Buuren, N.*; *Instituto Brasileiro de Inovacoes em Saude Social (IBISS).

S.C.717
IMPLEMENTATION OF AN AIDS INTERVENTION PROGRAM AMONG WOMEN IN PROSTITUTION AND THEIR CLIENTS IN THE CROSS RIVER STATE OF NIGERIA. Williams, Eka*; Efem, S.*; Weir, S.†; Lamson, N.†; Lamptey, P.†; *University of Calabar, Calabar, Nigeria. †Family Health International. North Carolina, USA.

S.C.718
ROLE PLAYS AS EDUCATION TECHNIQUE FOR PREVENTING AIDS: AN EXPERIENCE SHARED AMONG SOME PROSTITUTES OF KINSHASA LIVING IN A WELL KNOWN NEIGHBOURHOOD. Eke, Tukumbe; Tshio-Tshio, N.H.; N'Kunu, MPoke; Kayembe, K.; Kinshasa/Gombe Zaire.

Models for Behavior Change: Adolescents

S.C.719
IMPACT OF A NATIONAL PROGRAM TO PREVENT HIV INFECTION AMONG YOUTH. Kolbe, Lloyd*; Jones, J.*; Moore, J.*; Kann, L.*; Broyles, B.*; Christian, C.*; *Division of Adolescent and School Health, Centers for Disease Control, Atlanta, Georgia, USA.

S.C.720
A THEORY BASED EVALUATION OF AN AIDS PREVENTION PROGRAM. Conner, Ross; Lewis, M.; Mishra, S.; University of California, Irvine CA, USA.

S.C.721
THE ROLE OF NEGOTIATION SKILLS IN SAFER SEX WHEN EDUCATING AT-RISK YOUTH. Handler, Andrew; AIDS Project Los Angeles, Los Angeles, California, USA.

S.C.722
TRAINING TEACHERS TO MEET THE CHALLENGE--HIV PREVENTION EDUCATION FOR YOUTH. Britton, P.; Volkan, K.; Fetro, J.; Kirby, D.; ETR Associates, Scotts Valley, California, USA.

S.C.723
POSITIVE EFFECT OF GRAPHIC AIDS EDUCATION ON RURAL ADOLESCENTS. Katner, Harold P.; Smith, M.; Morris, J.; Mercer University School of Medicine, Macon, GA, USA.

S.C.724
SURVEY OF KNOWLEDGE AND ATTITUDE CANGE AMONG HIGH SCHOOL AGE ADOLESCENTS FOLLOWING AN EDUCATIONAL INTERVENTION THAT UTILIZES PERSON WITH AIDS. Cranston, Kevin; Yates, R.B.; Massachusetts Department of Education, Quincy, MA, USA; Health Care of Southeastern Massachusetts, Abington, MA, USA.

S.C.725
AIDS RISK REDUCTION BEHAVIORS OF COLLEGE STUDENTS RELATED TO EDUCATIONAL INTERVENTIONS. Weinstein, Steven A., Kezer, E.A., Lew, R.A., Goldberg, R.J., Miller, D.; Division of Infectious Diseases, University of Massachusetts Medical School, Worcester, MA, USA.

S.C.726
EDUCATIONAL NEEDS ON AIDS AND HUMAN SEXUALITY AMONG HIGH SCHOOL STUDENTS AND TEACHERS IN LIMA. Caceres, Carlos*; Getuzze, E.*; Resasco, A.*; Geicochea, P.*; Mandel, J.†; Hearst, N.†; (*)A. ven Humbeldt Institute of Tropical Med, Cayetane Heredia Univ., Lima, Peru; (†)CAPS, UCSF, California, USA.

S.C.727
KNOWLEDGE AND ATTITUDE OF ADOLESCENTS TOWARDS AIDS AND OTHER SEXUAL RELATED PROBELMS. Rasmussen, Bjarne*; Tos, M.J.*; Jensen, P.E.†; *AIDS-Secretariat, Frederiksberg, Denmark, †Paedagogisk Institut, Copenhagen, Denmark.

Models for Behavior Change: Drug Users

S.C.728
CRACK-RELATED BEHAVIORS UNDERMINING AIDS PREVENTION AMONG INTRAVENOUS DRUG USERS. Hasbrouck, La Mar; Daniels, N; Bowser, B.P.; and Gross, S.A.; Multicultural Inquiry and Research on AIDS of the UCSF Center for AIDS Prevention Studies and the Bayview Hunter's Point Foundation, San Francisco, CA, USA.

S.C.729
GRAFFITTI MURALS REACH INTRAVENOUS DRUG USERS. Marusich, Stephanie; Finn, J.; Hoxworth, T.; Colorado Dept. of Health, Denver, CO, USA.

S.C.730
INNOVATIVE AIDS PREVENTION STRATEGIES OF STREET IV DRUG USERS IN WORCESTER, MA. Connors, Margaret M.; Spectrum House, Inc. and The University of Massachusetts-Amherst U.S.A.

S.C.731
PERSISTENCE OF INJECTION IN STREET-RECRUITED IVDU'S. Tross, Susan*,†; Abdul-Quader, A.S.*; Des Jarlais, D.D.‡; Friedman, S.*; *Narcotic and Drug Research, Inc., NY, NY, USA; †Univ. of Med. and Dentistry of NJ, Newark, NJ, USA; ‡Beth Israel Med. Ctr., NY, NY, USA.

S.C.732
AIDS RISK REDUCTION IN HARLEM, NYC: GROUP PROCESS EFFECTS. Tortu, Stephanie; Deren, S.; Davis, W.R.; Plaga, E.; Springer, E.; Tobkes, C.; Narcotic and Drug Research, Inc., New York, NY, USA.

S.C.733
ORGANIZING IV DRUG USERS AGAINST AIDS: A COMPARISON WITH OUTREACH FOR PRODUCING RISK REDUCTION. Friedman, Samuel R*; Sufian M*; Neagius A*; Stepherson B*; Manthei D*, Des Jarlais DC†; *Narcotic and Drug Research, Inc., New York City, NY, USA. †Beth Israel Medical Center, New York City, NY.

S.C.734
PHARMACISTS AND IVDU: POSSIBILITIES FOR PREVENTION. De Muynck G.*, Todts S.†; *Free Clinic; †IPAC, Institute of Tropical Medicine, Antwerp, Belgium.

S.C.735
STRATEGIES OF HEALTH PROMOTION FOR IVDU IN FRG: IMPLICATIONS OF A DIFFERENTIAL EPIDEMIOLOGICAL STUDY FOR DRUG AND AIDS POLICIES. Kleiber, D.*, Heckmann, W.†; *Sozialpaedagogisches Institut Berlin, FRG; †Federal Health Office, AIDS Research Center, Berlin, FRG.

S.C.736
AN AUDIOVISUAL PRESENTATION FOR AIDS RISK REDUCTION IN IV DRUG USERS. Martin, Gianstefano; Serpelloni, G.; Morgante, S.; Perini, G.P.; Galvan, U.; Gomma, M.*; HIV Screening Section ULSS 25, Verona (Italy) -*SUMSAT, Verona (Italy).

S.C.737
BEYOND NEEDLE SHARING: THE SHARING OF DRUGS BY FRONTLOADING. Grund, Jean-Paul C.; Kaplan, C.D.; Adriaans, N.F.P.; European Research Institute, Erasmus University Rotterdam, Rotterdam, The Netherlands.

S.C.738
A NEW AIDS PROGRAM FOR HEROIN ADDICTS BASED ON THE COOPERATION OF CHEMISTS' SHOPS (THE ANTI-AIDS KIT). Zulaica, Daniel; Zubia, I.; Elizalde, B.; Garcia, I; *Servicio Vasco de Salud—Osakidetza, San Sebastian, Spain.

S.C.739
A COMPREHENSIVE TRAINING PROGRAM FOR U.S. SUBSTANCE ABUSE WORKERS. Stein, Jack*; fischer, g.*; Ashery, R.†; *The Center for AIDS and Substance Abuse Training, Falls Church, VA, USA, †The National Institute on Drug Abuse, Rockville, MD, USA.

S.C.740
OCCUPATION RISKS OF CONDUCTING OUTREACH. Broadhead, Robert S.* and Fox, Kathryn J.†; *The University of Connecticut, Storrs CT USA †The University of California, Berkely, CA USA.

S.C.741
USING FORENSIC TECHNIQUES TO CORROBORATE IV DRUG USERS' SELF-REPORTS OF NEEDLE SHARING. Gibson, David R.*, Guydish, J.*, Case, P.†, Downing, M.†, Dietrich, G.†, Clark, G.†, Lovelle-Drache, J.*, Wraxall, B.‡, Blake, E.‡; *University of California, San Francisco, CA; †Prevention Point Research Group, San Francisco, CA; ‡Serological Research Institute and Forensic Sciences Associates, Richmond, CA, USA.

S.C.742
ADOPTION OF BLEACH USE IN A COHORT OF STREET INTRAVENOUS DRUG USERS IN CHICAGO. Wiebel, W.; Chene, Douglas; Johnson, W.; University of Illinois at Chicago, Chicago, Illinois, USA.

S.C.743
NEEDLE CLEANING METHODS REPORTED BY INTRAVENOUS DRUG USERS WHO ARE NOT IN DRUG TREATMENT. Kroliczak, Alice*, Myers, M*, Nemeth-Coslett, T,†, Snyder, F.*, Young, P.*, NADR Consortium; *NOVA Research Company, Bethesda, Maryland, USA, †National Institute on Drug Abuse, Rockville, Maryland, USA.

S.C.744
FEASIBILITY OF NEEDLE EXCHANGE PROGRAM IN SAN FRANCISCO: A SURVEY OF STREET-BASED ADDICTS. Harris, Earl; Fullilove, R.; Gross, S.A.; Fullilove, M. and Disher, T.; Bayview-Hunter's Point Foundation (BVHP), Multicultural Inquiry and Reseach on AIDS, UCSF Center for AIDS Prevention Studies (CAPS), AIDS Services, BVHP, San Francisco, CA USA.

S.C.745
RISK BEHAVIOUR AND HIV INFECTION IN CLIENTS OF NEEDLE-EXCHANGE IN CENTRAL LONDON. Hart, Graham J.*; Woodward, N.J.†; Johnson, A.M.*; Querubin, G.†; Connell, J.‡; Adler, M.W.*; *University College & Middlesex School of Medicine; †Bloomsbury Health Authority; ‡Public Health Laboratory Service, London, UK.

S.C.746
MAXIMISING RETURN RATES & SAFE DISPOSAL OF INJECTION EQUIPMENT IN AUSTRALIAN NEEDLE & SYRINGE EXCHANGE PROGRAMS. Lowe, David*; Milechman, B.*; Cotton, R.*; Vumbaca, G.*; McDermott, R.†; Ward, S.†; *AIDS Bureau, NSW Department of Health, Sydney, Australia. †McDermott Ward Product Design, Sydney, Australia.

920

S.C.747
A PILOT PROGRAM TO PROVIDE COMMUNICABLE DISEASE SCREENING SERVICES IN DRUG TREATMENT PROGRAM SETTINGS. Hughes, Michael J., Guzman, R., Jain, S., Kizer, K.W.; California Department of Health Services, Sacramento, CA, USA.

S.C.748
METHADONE MAINTENANCE, HIV SEROSTATUS AND RACE IN INJECTION DRUG USERS (IDU) IN SAN FRANCISCO, CA. Williams, Ann; Vranizan, K.; Gorter, R.; Brodie, B.; Meakin, R.; Moss, A.; University of California, San Francisco, California.

S.C.749
A SOCIAL STUDY OF SEROPOSITIVE INTRAVENOUS DRUG ABUSERS IN STOCKHOLM. Agren Gunnar, Anderzon, K.; Social Welfare Administration, Stockholm, Sweden.

S.C.750
SURVEY OF FEMALE SEXUAL PARTNERS OF MALE IDU'S IN PREPARATION FOR HIV PREVENTION CAMPAIGN. Pappas, Les*; Gaulard, J.†; Winterhalter, S.*; Christen, P.*; *San Francisco AIDS Foundation, San Francisco, California, USA; †California State University, Hayward, California, USA.

S.C.751
CHANGE IN AIDS KNOWLEDGE, PERCEPTIONS AND RISK PRACTICES FOR FEMALE PARTNERS OF IV DRUG USERS AFTER EDUCATIONAL INTERVENTIONS: INITIAL FINDINGS. Weiner Marc, Catala S, Weiner R, Martinez Jr. C, Schoolfield J and Esquivel M.; University of Texas Health Science Center, San Antonio, Texas, USA.

Controlled Trials: Treatment and Education

S.C.752
EFFECT OF ZIDOVUDINA IN PREVENTING HIV INFECTION BY HETEROSEXUAL TRANSMISSION. A. Chirianni, P. Tullio Cataldo, S. Noce, M.D Abbraccio, G. Bonadies, A. Bassi, M. Piazza; Clinic of Infectious Diseases, 2nd Medical School, University Naples-Italy.

S.C.753
COMPARISON OF THREE AIDS EDUCATIONAL METHODS WITHIN BLACK, HISPANIC, AND WHITE NEIGHBORHOODS. Rhodes, Fen, Elder-Tabrizy, K.A., Baker, J.G., Wolitski, R.J.; AIDS Research & Education Project, California State University, Long Beach, CA USA.

S.C.754
A RANDOMIZED TRIAL OF AIDS EDUCATION AND HIV TESTING FOR COLLEGE STUDENTS. Wenger, Neil; Shapiro, Martin; Greenberg, Jerome; Hilborne, Lee; Kusseling, Francoise; Mangotich, Maureen.; Departments of Medicine and Pathology & the Student Health Service, University of California, Los Angeles Medical Center, Los Angeles, California.

S.C.755
COMPARISON OF THE RESULTS OF A STANDARDIZED AIDS PREVENTION PROGRAM IN TWO GEOGRAPHIC LOCATIONS. Flowers, J.V.*; Booraem, Curtis D.†; Miller, T.†; Iversen, A.E.*; *Chapman College, Orange, CA, USA; †AIDS Response Project, Garden Grove, CA, USA; ‡University of California, College of Medicine, Irvine, CA, USA.

Controlled Trials: Condoms

S.C.756
STRENGTH COMPARISON OF EXTRA STRENGTH CONDOMS. Voeller, Bruce*; Coulson, A.†; Campeau, J.‡; Bernstein, G.‡; and Nakamura, R.‡; *The Mariposa Foundation, Topanga, CA, USA, †University of California, Los Angeles, CA, USA, ‡University of Souther California, Los Angeles, CA, USA.

S.C.757
INITIAL BREAK-POINT OF LATEX CONDOMS DURING THE AIR BURST TEST, VIEWED WITH HIGH SPEED PHOTOGRAPHY. Stube, Roger*; Voeller, B.†; Davidhazy, A.‡; *Consumers Union, Mt. Vernon, NY, USA, †The Mariposa Foundation, Topanga, CA, USA, ‡Rochester Institute of Technology, Rochester, NY, USA.

S.C.758
UPDATE ON THE WPC-333 FEMALE CONDOM. Leeper, Mary Ann; Wisconsin Pharmacal, Jackson, Wisconsin, USA.

S.C.759
BARRIER PROPERTIES OF SKIN CONDOMS TO HIV SIZED PARTICLES. White, Nick; Harrison, M; Creasey, J; Singh, K.; London International Group plc, Cambridge, England.

Controlled Trials: Homosexual and Bisexual Men

S.C.760
IMMUNOGENICITY OF PLASMA-DERIVED VS RECOMBINANT HEPATITIS B VACCINE IN THE BALTIMORE MACS. Odaka, Nancy, Saah, A., Fox, R., Fields, H., Munoz, A., Kaslow, R.; The Johns Hopkins School of Hygiene and Public Health, Baltimore, MD; Centers for Disease Control, Atlanta, GA; and NIAID, National Institutes of Health, Bethesda, MD, USA.

Controlled Trials: Drug Users

S.C.761
BLEACH IS NOT ENOUGH: GIVING IV DRUG USERS A CHOICE OF DISINFECTANTS WHEN THEY SHARE NEEDLES AND SYRINGES. Flynn, Neil*; Jain, S.*; Keddie, E.*; Carlson, J.*; Jennings, M.*; Haverkos, H.+; *University of California, Davis, California, USA; NIAID, Bethesda, Maryland, USA.

S.C.762
NEEDLE EXCHANGE: WHERE HAVE ALL THE NEEDLES GONE?. Guydish, Joe*; Clark, G.†; Garcia, D.†; Case, P.†; Sorensen, J.*; Chu, G.‡; *UCSF Center for AIDS Prevention Studies; †Prevention Point Research Group; ‡Div. of Occupational Safety and Helath, State of CA, SF, CA, USA.

S.C.763
EVALUATION OF A RISK REDUCTION PROGRAM FOR INTRAVENOUS DRUG USERS. Chitwood, Dale D.*, McCoy, C.B.*, McCoy, H.V.†, McKay, C.*, McBride, D.C.‡, Comerford, M.*; *University of Miami School of Medicine, Miami, FL; †Florida International University, Miami, FL; ‡Andrews University, Berrien Springs, MI; USA.

Controlled Trials: Health Care Workers

S.C.764
REPROCESSING REUSABLE PLASTIC HYPODERMIC SYRINGES: ANALYSIS OF COST SAVINGS AND EFFECTS ON MECHANICAL PERFORMANCE. Mwaniki, David L.; Kenya Medical Research Institute, Nairobi, Kenya.

S.C.765
RAPID INITIATION OF ZIDOVUDINE (AZT) PROPHYLAXIS AFTER WORKPLACE EXPOSURE IN HEALTHCARE WORKERS. Bauer, Stanley; The Beth Israel Medical Center, New York, New York 10003 USA.

S.C.766
ZIDOVUDINE (AZT) USE AFTER OCCUPATIONAL EXPOSURE TO HIV-INFECTED BLOOD. Tokars, Jerome, Marcus, R., Culver, D., McKibben, P., Bell, D.; Cooperative Needlestick Surveillance Group, Centers for Disease Control, Atlanta, GA, USA.

S.C.767
ZIDOVUDINE PROPHYLAXIS AFTER OCCUPATIONAL EXPOSURE TO HIV IN HEALTH CARE WORKERS. Puro, Vincenzo*; Ippolito, G.*; Vella, S.† and Angarano, G.‡; Arici, C.‡; D'Argenio, P.‡; Ferlini, A.‡; Fruttaldo, L.‡; Macri, G.‡; Narciso, P.‡; Ranieri, S.†; Scasso, A.‡; *Coordinating Center L. Spallanzani Hospital; †Italian NIH, Rome, Italy; The Italian Study Group on Occupational Risk of HIV Infection—Italian Ministry of Health AIDS Research Project.

Access to Care, Treatment, and Trials

S.D.768
A MULTI-CENTER HIV CLINICAL TRIAL SITE MODEL. Gilliland, Gay; Jalbert, R.M.; Jensen, P.C.; Department of Medicine, Department of Veterans Affairs Medical Center, and The University of California, San Francisco, California, USA.

S.D.769
EVALUATION OF COMPLIANCE RATE IN A CLINIC SERVING MINORITY AND LOW INCOME COMMUNITIES. Norris, Barbara; Davis, L.; Leibel, J.; Laqueur, P.; Morgan, A.; Paroski, P.; et al.; Woodhull Medical & Mental Health Center, Brooklyn, NY, USA.

S.D.770
DEMOGRAPHIC ANALYSIS OF ACTU TRIAL ENROLLMENT VS. INCIDENCE OF AIDS IN NEW YORK CITY. Long, Iris; Davis, L.; Smith, R.; Kirschenbaum, D.; AIDS Treatment Registry, NY, NY, USA.

S.D.771
HIV-PROTOCOL: USE OF A HOSPITAL CLINICAL COMPUTER FOR AIDS CLINICAL TRIALS PROTOCOL INFORMATION DISTRIBUTION. Loftus, Jocelyn*, Kowaloff, H.†, Safran, C.‡, Cotton, D.*, Crumpacker, C.*, Heath-Chiozzi, M.*; *Beth Israel Hospital, Harvard BCH AIDS Clinical Trials Unit, ‡Center for Computing, Harvard Medical School, Boston, MA, USA.

S.D.772
THERAPY DECISIONS AMONG SEROPOSITIVE GAY BOSTON MEN. Senterfitt, Walton*; Stoddard, A.H.*; McCusker, J.*; Mayer, K.H.†; *University of Massachusetts, Amherst, Massachusetts, USA; †Fenway Community Health Center, Boston, Massachusetts, USA.

S.D.773
FEASIBILITY TRIAL FOR OUTPATIENT INDUCTION WITH GANCICLOVIR. Miller, John; Dolan, G; Fowles, T; Schreurs, E; St. Vincents Hospital, Sydney, New South Wales, Australia.

S.D.774
THE FEASIBILITY OF PROVIDING AZT THROUGH NATIONAL AIDS PROGRAMS IN LATIN AMERICA: WHAT WOULD IT COST? Kimball, Ann Marie*; Suarez, R.*; Gonzalez, R.*; Zessler, L.*; Zacarias, F.*; *Pan American Health Organization, 525 23rd Street N.W. Washington, D.C. 20037 USA.

S.D.775
DROP OUT IN AZT TREATED PATIENTS. Ziliani Nicoletta, Lazzarin Adriano, Saracco Alberto, Brusa M.*; Clinic of Infectious Diseases—University of Milan, Italy *Dept. of Pharmacy—Hospital L. Sacco, Milan, Italy.

S.D.776
ACCEPTANCE RATE OF ZIDOVUDINE AMONG HIV-INFECTED PERSONS WITH 500CD4: 200. Lai, Kwan Kew; University of Massachusetts Medical School, Worcester, MA, USA.

S.D.777
AEROSOLIZED PENTAMADINE PROPHYLAXIS: A MODEL OF CARE DELIVERY IN A LARGELY IVDU INNER-CITY POPULATION. Carter, Diane T., Strother, T.K., Gibson, C.M., Kloser, P.C.; University of Medicine & Dentistry, New Jersey Medical School and University Hospital, Newark, NJ, USA.

S.D.778
COMPLIANCE FOR OUTPATIENT AEROSOLIZED PENTAMIDINE THERAPY. Bozzo, Suzanne; Acosta, A.; The New York Hospital-Cornell Medical Center, New York, New York, U.S.A.

S.D.779
A QUALITATIVE STUDY OF CANADIAN AIDS PATIENTS' USE OF DRUG AND ALTERNATIVE THERAPIES. Jackson, Lois and Fanning, Mary; Toronto General Hospital, Toronto, Ontario, Canada.

S.D.780
ALTERNATIVE THERAPIES IN AIDS. Sutherland, David*; Bissett, A.*; Malcolm, J.*; Dowling, L.*; *Department of Clinical Immunology, Royal Newcastle Hospital, Newcastle, Australia.

S.D.781
DETERMINANTS OF NONCONVENTIONAL TREATMENT USE AMONG HIV-INFECTED INDIVIDUALS. Cohen, C.J.*, Mayer, K.H.†, Eisenberg, D.M.*, Oray, E.J.‡, Delbanco, T.L.*; *Beth Israel Hospital, Harvard Medical School, Boston, MA; †Memorial Hospital, Brown University, RI, ‡Harvard School of Public Health, Boston, MA.

S.D.782
EVALUATION OF COMPLIANCE OF INTRAVENOUS DRUG USERS AND HOMOSEXUALS IN AIDS CLINICAL TRIALS. Thorn, Michael*; Staats, J.†; Torres, R.*; *St. Vincent's Hospital and Medical Center, New: : York, N.Y., U.S.A. †AIDS Resource Center/Bailey: House, New York, N.Y., U.S.A.

S.D.783
COMPLIANCE WITH STUDY MEDICATION IN A RANDOMISED TRIAL OF ZIDOVUDINE (ACTG 019). Lim, Lynette*; Grimes, J.*; Volberding, P.†; Lagakos, S.*; Krogstad, D.‡; Sadler, B.‖; *Harvard University, School of Public Health, Boston, USA; †University of: California, San Francisco, USA; ‡Washington University, St. Louis, USA; ‖Research Triangle Institute, North Carolin, USA.

S.D.784
A CANADIAN PROGRAM FOR EMERGENCY DISTRIBUTION OF 2'-3'-DIDEOXYINOSINE (DDI) TO AIDS/ARC PATIENTS INTOLERANT OR RESISTANT TO AZT (ZIDOVUDINE). Ungar, Wendy, Lesperance, K.J., Torsher, L., Burnett, M.J.; Bristol-Myers Squibb Pharmaceutical Group, Ottawa, Canada.

S.D.785
SOCIODEMOGRAPHIC DIFFERENCES IN THE USE OF AEROSOL PENTAMIDINE FOR SECONDARY PROPHYLAXIS OF PNEUMOCISTIS CARINII PENUMONIA. Piette, John*; Stein, M.*; Mor, V.*; Fleishman, J.*; Mayer, K.*; Wachtel, T.*; Carpenter, C.*; *Brown University, Providence, Rhode Island, USA.

S.D.786
WHEN SAFETY NETS FAIL: A UNIQUE, GUERRILLA PROGRAM TO PROVIDE AEROSOL PENTAMIDINE TO INDIGENT POPULATIONS—THE PWA (PEOPLE WITH AIDS) HEALTH GROUP AS MODEL. Wilkinson, Steven D., Hodel, D.; The PWA Health Group, New York, NY, USA.

S.D.787
RECRUITMENT INTO A PLACEBO-CONTROLLED TRIAL OF ZIDOVUDINE IN ASYMPTOMATIC HIV INFECTION AND EFFECT OF CHANGING CLINICAL PRACTICE ON PARTICIPATION. Hooker M.H., Catalan P., Lawrence A.G., Gazzard B.G.; St Stephen's Clinic, London, SW10, U.K.

S.D.788
POPULATION BASED ESTIMATES OF ZIDOVUDINE AND AEROSOL PENTAMIDINE USE IN SAN FRANCISCO: 1987-89. Lang, William; Samuel, M.[†]; Osmond, D.[‡]; Krampf, W.[‡]; Moss, A.[‡]; Shrager, L.[§]; *Children's Hospital of SF, [†]Univ. of CA, Berkeley, [‡]Univ. of CA, SF, CA, USA., [§]National Institutes of Allergy and Infectious Diseases.

S.D.789
ENROLLMENT IN PARALLEL TRACK STUDIES OF DIDEOXYINOSINE (DDI) VS AIDS CLINICAL TREATMENT GROUP (ACTG) TRIALS AT SAN FRANCISCO GENERAL HOSPITAL, AN ACTG SITE. Coleman, Rebecca*, Kahn, J.*, Gumbley-Smith, D.*, Woodring, H.*, Mills, J.[†], Volberding, P.*; *Division of AIDS Activities and [†]Infectious Diseases, Department of Medicine, San Francisco General Hospital and University of California, San Francisco, CA, USA.

S.D.790
THERAPEUTIC AND PROPHYLACTIC DRUG USE BY HOMOSEXUAL AND BISEXUAL MEN IN THREE CITIES. Holmberg, Scott*; Harrison, J.*; Buchbinder, S.[†]; Penley, K.[‡]; Kish, K.[§]; Conley, L.*; *Epidemiology Branch, Div. HIV/AIDS, CDC, Atlanta, GA; [†]San Francisco Dept. of Health, SF; [‡]Denver Disease Control Service, Denver, CO; and [§]Howard Brown Memorial Health Service, Chigaco, IL.

S.D.791
ASSESSMENT OF DISCHARGE PLANNING REFERRAL TO NURSING HOMES FOR PEOPLE WITH AIDS AND HIV. Marder, Reggi E. and Linsk, Nathan L.; University of Illinois, Chicago, USA.

S.D.792
DIFFERENTIAL PATTERNS OF HEALTH SERVICES UTILIZATION BY RISK GROUP: EVIDENCE FROM A NATIONAL STUDY. Mor, Vincent, Dresser, M.; Fleishman, J.; Piette, J.; Brown University Center for Gerontology and Health Care Research, Providence, Rhode Island 02912.

S.D.793
HEALTH CARE UTILIZATION BY HIV-AT-RISK INFANTS. Hutton, Nancy; Butz, A.; Joyner, M.; McHugh, J.; Vogelhut, J.; Johns Hopkins University, Baltimore, Maryland, U.S.A.

S.D.794
DOES FAMILIARITY BREED EFFECTIVENESS IN THE TREATMENT OF AIDS PATIENTS? EVIDENCE FROM A NATIONAL SAMPLE OF U.S. HOSPITALS. Ball, Judy K.*, Farley, D.E.*, and Turner, B.J.[†]; *Agency for Health Care Policy and Research, PHS, USDHHS, Rockville, MD, USA; [†]Jefferson Medical College, Philadelphia, PA, USA.

S.D.795
QUALITY ASSESSMENT OF DAY-CARE HOSPITALIZATION IN PATIENTS WITH AIDS: A FIRST STEP. Fournier, Veronique; Giraud, A.; Public Assistance Hospital of Paris, Paris, France.

S.D.796
HOSPITALS WITH OVER 100 AIDS CASES. Selik, Richard; Buehler, J.; Centers for Disease Control, Atlanta, GA, USA.

S.D.797
IMPACT OF INSURANCE COVERAGE ON HEALTHCARE UTILIZATION FOR HIV-INFECTED PERSONS: RESULTS OF A SURVEY. Zucconi, Sharon*; Kingsley, L.*; Lave, J.*; Ishii, E.*; *Univ. of Pittsburgh, Graduate Sch. of Public Health, Pittsburgh, PA, USA.

S.D.798
CHANGING PATTERNS OF HOSPITALIZATION OF HIV-INFECTED PATIENTS. Gavazzeni, Giovanna; Arici, C.; Finazzi, M.G.; Minola, E; Rizzi, M.; Department of Infectious Diseases, Ospedali Riuniti, Bergamo, Italia.

S.D.799
A PSYCHOSOCIAL RESPONSE TO AIDS IN A LOW PREVALENCE CITY: THE DEVELOPMENT OF AN INTERDISCIPLINARY TEAM. Berthelot, Pierre, M.S.W.; C.S.S. Quebec/Equipe De Prevention Et Depistage Vih-Sida. Quebec, Canada.

S.D.800
THE UTILITY OF A DIRECT-MAIL SURVEY IN IDENTIFYING PHYSICIANS WILLING TO PROVIDE PRIMARY CARE FOR NEW PATIENTS WITH HIV. Chaffee, Frank; Goldbaum G; Fowler, K; Hartfield, K.; Seattle-King County Department of Public Health, Seattle, Washington, USA.

S.D.801
FACTORS INFLUENCING PHYSICIANS' PARTICIPATION IN COMMUNITY-BASED CLINICAL TRIALS. Abrams, D; Mitchell, T; Child, C; Weingart, Z; Townley, D, County Community Consortium, San Francisco, CA USA.

S.D.802
INITIAL EXPERIENCE WITH COMPREHENSIVE CASE MANAGEMENT FOR PERSONS WITH AIDS/HIV INFECTION AT COOK COUNTY HOSPITAL, CHICAGO. Kuehnert, Paul; *Dean B; [†]Johnson K; [‡]O'Neil B;*Rodriguez R; *Sanchez C; [†]Warren L; *Williamson M;*; *Cook County Hospital AIDS Prevention Service; [†]Women and Children with AIDS Project, Chicago, IL, USA.

S.D.803
CASE MANAGEMENT OF FAMILIES WITH HIV-INFECTION. Goeren, W; Wade, K; Rodriguez, L.; Mount Sinai Hospital, New York, New York, USA.

S.D.804
SERVING HOPE, HUMOR, AND COMPASSION: IMPLEMENTATION OF A WIDELY DIVERSE VOLUNTEER SUPPORT PROGRAM FOR PERSONS WITH AIDS HIV INFECTION AT COOK COUNTY HOSPITAL CHICAGO. Boyd, Linda; Kuehnert, P; Sherer, R.; Cook County Hospital AIDS Prevention Service.

S.D.805
HEALTH CARE NEEDS OF ANTI-HIV POSITIVE PATIENTS: RESULTS OF A PRELIMINARY SURVEY. Suter, Fredy*; Bottura, P.*; Caprioli, S.*; Marchetti, G.*; Pellegata, G.*; Pozzi, G.[†]; *Infectious Diseases and [†]Psychosocial Health Departments, General Hospital, Busto Arsizio (VA), Italy.

S.D.806
NATURAL HISTORY OF EARLY HIV INFECTION. Willocks, Lorna; Cowan, F M; Flegg, P J; MacCallum, L R; Emmanuel, F X S; Brettle, R P; et al.; Infectious Diseases Unit, City Hospital, Edinburgh, U.K.

S.D.807
DIFFERENTIAL ACCESS TO THERAPY MAY EXPLAIN AIDS INCIDENCE TRENDS IN SUBGROUPS. Rosenberg P.S.; Gail M.H.; Schrager L.; *Goedert J.J.; Biggar R.J.; National Cancer Institute, Rockville, MD, USA: *National Institute on Allergy and Infectious Diseases, USA.

S.D.808
NATIONAL CAPACITY FOR PROVIDING T-LYMPHOCYTE IMMUNOPHENOTYPING IN SUPPORT OF HIV-1 INTERVENTION. Valdiserri, Ronald; Cross, G.; Gerber, R.; Hearn, T.; Schwartz, R.; Centers for Disease Control, Atlanta, GA, USA.

S.D.809
DEVELOPING A COMMUNITY BASED TREATMENT PROGRAM THAT MEETS THE NEEDS OF A POPULATION THAT HAS LARGE NUMBERS OF HOMELESS PATIENTS. Hagerty, Cornelia A.*; Crimlisk, J.* Kennedy, P.†; Tobias, C.†; Farber, H.*; *Boston City Hospital, Boston, Massachusetts, USA, †Massachusetts Department of Public Welfare, Medicaid Division, Boston, Massachusetts, USA.

S.D.810
PROJECT HOME CARE: A MODEL FOR HOME BASED AIDS CARE IN NORTH CAROLINA. Dideriksen, Patricia; Adinolfi, A.; Leikweg, R.; Roe, B.; Hendrickson, S.; Bartlett, J.A.; Duke University Medical Center, Durham, North Carolina USA.

S.D.811
WHO USES AN AIDS CLINIC: PATIENT CHARACTERISTICS AND TREATMENT RELATED BEHAVIORS. Wightman, Susan L.; Hong, B.A.; Gooden, E.A.; McCrae, P.; Seyfried, W.R.; and Robison, L.R.; AIDS Clinical Trials Unit, Washington University School of Medicine, St. Louis, Missouri, USA.

S.D.812
THE BENEFIT OF THE VISITING PHYSICIAN SERVICE TO A RESIDENTIAL DRUG TREATMENT FACILITY. *Glatt, A.; Holder, F.; Feleke,G.; Forlenza, S.; Nassau County Medical Center, East Meadow, NY.

S.D.813
EMPLOYMENT STATUS OF MEN DIAGNOSED WITH AIDS IN THE BALTIMORE MACS. Metz, S.; Fox, R; Odaka, N; McArthur, J.C.; McArthur, J.H.; Saah, A.; Johns Hopkins School of Hygiene & Public Health, Baltimore, MD.

S.D.814
MEDICAL SOCIAL CARE FOR FAMILY MEMBERS OF AIDS PATIENTS IN RIO DE JANEIRO, BRAZIL. Moura, Estela Mariz Maulaz; Hanan, J.L.L.; Carvalho-Nettto, L.D.; Miguez, L.A.; Rachid-de-Lacerda, M.C.; Morais-de-Sa, C.A.; *Gaffree & Guinle Univ. Hospital, Univ. of Rio de Janeiro, Brazil.

S.D.815
NURSE LOAD IN RELATION TO HOSPITALIZATION OF HIV POSITIVE PATIENTS. Bonifassi Louis, Marse D., Bernard E., Durant J., Carles M., Mondain V., Dellamonica P.; University Hospital, Nice, France.

S.D.816
WOMEN'S CLINIC: A FULL SERVICE CLINIC FOR WOMEN WITH HIV DISEASE. Pinto, Roshni C., Kloser, P.C., Lombardo, J.M., Bais, P.T., Lynch, A.M., Gibson, C.M.; University of Medicine and Dentistry, New Jersey Medical School and University Hospital, Newark, NJ, USA.

S.D.817
THE ROLE OF A HOSPITAL BASED HOME CARE TEAM IN CARE OF PEOPLE WITH HIV DISEASE. Mansfield, Simon*; Singh, S.†; Smits A.‡; *Principal Medical Officer, †Deputy Principal Medical Officer, London Lighthouse, London, England, ‡Senior Nurse, Home Support Team, St. Mary's Hospital, London, England.

S.D.818
EVOLUTION, ASSESMENT, AND COMPARISON OF NURSING CARE (NC) DELIVERED TO HIV INFECTED AND NON-INFECTED (HIV+ AND HIV-) HOSPITALIZED PATIENTS IN AN AIDS REFERENCE CENTER. Chidiac, Christian; Senneville, E.; Sivery, B.; Leroy, O.; Beaucaire, G.; Beuscart, C.; Choisy, P.; Hourco, P.; Moton, Y.; University Hospital F59208 Tourcoing France.

S.D.819
PSYCHOSOCIAL SUPPORT FOR HIV-INFECTED FEMALE PATIENTS IN COPING WITH CRITICAL LIFE EVENTS IN GYNECOLOGY AND OBSTETRICS. Jakobs, Ursula A., Hiller, K.F.; Lutz, R.; Stauber, M.; University of Munich, I. Women's Hospital, Munich, FRG.

S.D.820
DESIGN OF A DATABASE SYSTEM FOR AN HIV PROPHYLAXIS PROGRAM. Akili-Obika, Atiba; Costa, S.; Williams, N.; Robeson, L.; Young, S.; New Jersey State Department of Health, Trenton, NJ, USA.

S.D.821
USE OF TELEPHONE HOT-LINE IN COUNSELING IN LATIN AMERICA AND CARIBBEAN. Bond, Lydia S.; Pan American Health Organization, Washington, DC, USA.

S.D.822
ACTIVITIES OF THE AIDS HOTLINE IN ROSARIO CITY, ARGENTINA/COPRES, ROSARIO/SANTA FE, ARGENTINA. Jorge Malespina—Alicia Kokincak; Committee for the Prevention of AIDS.

S.D.823
PROBLEMS IN EVALUATING SUBJECT INCLUSION IN TREATMENT PROTOCOLS DUE TO VARIABILITY IN LABORATORY TITER STANDARDS. Salveson, Catherine A., Sampson, James H.; The Research and Education Group, Good Samaritan Hospital & Medical Center Portland, OR USA.

Models of Care Delivery

S.D.824
FIVE YEAR AIDS SERVICE PLANNING IN AUSTRALIA. Duckett, Margaret; Lowe, D.; Hender, I.; Malcolm, A.; Cameron, C.; Kowalenko, N.; AIDS Bureau, NSW Department of Health, Sydney, Australia.

S.D.825
A COMPREHENSIVE MODEL OF CARE DELIVERY FOR HIV-INFECTED PERSONS. Rizzi, Marco and the Provincial Working Group of Bergamo; Department of Infectious Diseases, Ospedali Riuniti, Bergamo, Italy.

S.D.826
HOSPITAL AND HOSPICE CARE FOR PEOPLE WITH AIDS IN LATIUM, ITALY. Orchi, Nicoletta* and the LATIUM AIDS Collaborative Group.; *Regional Epidemiology Unit, Rome, Italy.

S.D.827
IMPACT OF A COMPREHENSIVE SYSTEM OF HEALTH CARE FOR AIDS PATIENTS IN SAN JUAN, PUERTO RICO. Kouri, Yamil*; Shepard, D.*; Sotomayor, J.†; Rizek, R.‡; Rivera-Dueno, J.†; *Harvard Institute for International Development, Cambridge, MA, USA, †San Juan AIDS Institute, Puerto Rico, ‡San Juan Department of Health.

S.D.828
STRATEGIES TO COORDINATE DELIVERY OF NON-ACUTE CARE SERVICES FOR PERSONS WITH HIV INFECTON. Sumner, J.A.†; Margolis, S.*; Latzanich, G.M.*; Baer, K.B.*; Lewis, K.S.*; and Austein, C.F.†; *Macro Systems, Inc., Atlanta, GA, USA, and †U.S. Department of Health and Human Services, Washington, DC, USA.

S.D.829
PROVISION OF OUTPATIENT SERVICES TO PERSONS WITH AIDS BY U.S. HOSPITALS: 1985 THROUGH 1988. Weslowski, Virginia; Hintz, E.; Spolarich, A.; Andrulis, D.; The National Public Health and Hospital Institute, Washington, DC, USA.

S.D.830
CLINICAL NEEDS OF PERSONS WITH HIV RELATED ILLNESS IN LONG TERM CARE SETTINGS. Anderson, Ellen*; Peskowitz, M.†; Dehovitz, J.‡; Anarella, J.*; Chorost, S.*; Rango, N.*; *AIDS Institute, New York State Department of Health, Albany, New York, USA, †Loeb & Troper, New York City, New York, USA, ‡SUNY Health & Science Center at Brooklyn, Brooklyn, New York, USA.

S.D.831
THE DNPHC: A MODEL FOR PROVIDING OUTPATIENT HIV CARE. Waller, Paul R.; University of Colorado School of Nursing.

S.D.832
A REGIONAL CENTER FOR EARLY MEDICAL AND PSYCHOSOCIAL ASSESSMENT OF HIV-INFECTED PERSONS; THE MARYLAND/JOHNS HOPKINS DIAGNOSTIC EVALUATION UNIT (DEU). Stanton, David L*; Smith, MD*; Rucker, SC*; Chaisson, RE*; Hidalgo, J†; Fine, EM†; Bartlett, JG*; *Johns Hopkins University; †Maryland Department of Health and Mental Hygiene, Baltimore, MD, USA.

S.D.833
COMMUNITY BASED AIDS PREVENTION PROJECT IN CIUDAD JUAREZ, MEXICO. Suarez, E.†; de La Rosa, G.†; Welsh, M.*; Poncede Leon, R.*; Weiss, E.*; * AIDSTECH/FHI, North Carolina, USA; † Federacion Mexicana de Entidades de Planificacion Familiar (FEMAP), Ciudad Juarez, Mexico.

S.D.834
STD AND AIDS CONTROL PROGRAMS IN DEVELOPING COUNTRIES: A BLUEPRINT FOR PROGRAMMING, IMPLEMENTATION AND EVALUATION. Fransen, Lieve, van Dam, J.C., Piot, P.; European Ecomonic Community, AIDS Control Program, Brussels, Belgium.

S.D.835
BUDDY-PROGRAMMES IN THE NETHERLANDS. De Rijk, Kees; Netherlands Institute of Mental Health Utrecht, The Netherlands.

S.D.836
RESIDENTIAL AIDS SHELTERS: CALIFORNIA'S PILOT PROGRAM TO PROVIDE GROUP RESIDENCES FOR PERSONS WITH AIDS AND ARC. Falknor, Peggy, Brown, M.; California Department of Health Services (CDHS), Sacramento, CA, USA.

S.D.837
CRITERIA MANUAL FOR THE TREATMENT OF AIDS. Jacobs, John; Gold, J., et al.; Medical Criteria Committee, Professional Standards Review Council of America, Inc., New York, NY, USA.

S.D.838
AN ADVERSE DRUG REACTION MONITORING SCHEME FOR HIV POSITIVE PATIENTS. Erskine David; Balestrini, A; Clarbour, J; Steele, J; Gazzard, B.; Westinster Hospital, London, England.

S.D.839
QUALITY OF CARE FOR AIDS PATIENTS: DESCRIPTION AND IMPACT OF AN ENHANCED REVIEW PROCESS. Shevach, Ilene; Wielk, C. and Eder, S.; Professional Standards Review Council of America, Inc., New York, NY, USA.

S.D.840
A CROSS-INSTITUTIONAL MULTI-MODEL CRITERION FOR EVALUATING HIV PROGRAMS. Nessel, Jerry Thomas; P.R.O.M.E.S.A., Inc. (HIV Coordinator) Bronx, N.Y., U.S.A.; Samaritan Village, Inc. (Coordinator of Health Education Research and Information) Queens, N.Y.; Mercy College (Adjunct Professor in Epidemiology), N.Y., USA.

S.D.841
INDIVIDUAL AND INSTITUTIONAL MEASURES OF EFFICACY IN AN EARLY HIV THERAPUTIC INTERVENTION PROGRAM. Williams, Neil*; Lin-Greenberg, A.†; Goldschmidt, F.K.*; Ngumezi, D.*; *New Jersey State Dept. of Health, Trenton, NJ; †Jersey City Medical Center, Jersey City, NJ, USA.

S.D.842
AIDS AND THE HOSPITAL: A BETTER USE OF HOSPITAL RESOURCES. Arrizabalaga, C., Cia, A., Odriozola, A., Aguirretxe, A., Manchola, M. T.; *Servicio Vasco De Salud, Plan Del Sida, San Sebastian, Guipuzcoa, Spain.

S.D.843
POST-HOSPITAL CARE FOR AIDS PATIENTS. Widman, Mindy; Light, D.W.; Platt, J.J.; Univ. of Medicine & Dentistry of NJ, School of Osteopathic Medicine, Camden, NJ, USA.

S.D.844
CRITERIA MANUAL FOR THE STANDARDS OF NURSING CARE IN THE MANAGEMENT OF THE PATIENT WITH AN HIV RELATED ILLNESS. O'Brien, Joan; et al; Nursing Criteria Committee, Professional Standards Review Council of America, Inc., New York, NY, USA.

S.D.845
AN EXPARIMENT IN THE ANONYMON DISTRIBUTION O/ AIDS-MEDICAMON 5 ON SOUTHERN FRANCE. Sambuc, R., Thirion, X.*, Maldomado, J., San Marco, J. L.*; *Public Health Service, Marseille, France Hospitals of APM, Marseilles, France.

S.D.846
AN EDUCATIONAL PROGRAM ON SELF-CARE FOR AIDS IN THE NETHERLANDS. Coene, Eduard*; Fransen, H.*, de Graaf, R†; Moerkerk, H‡; *Innovatieprojekt, Amsterdam, Holland, †Ministery of Health affairs, Holland ‡National Committee of AIDS Control, Holland.

S.D.847
PERSONAL YET CONFIDENTIAL: USE OF HOTLINES TO DELIVER AIDS PREVENTION MESSAGES TO TARGETED AUDIENCES IN THE CARIBBEAN. Helquist, M*; H†; Thompson-Nichols, D.‡; Chong Ling, E†; Stein, J.*; Jimerson, A.*;: *AIDSCOM, Washington, DC; †National AIDS Hotline of Trinidad & Tobago.

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S.D.848
CROSS CULTURAL ISSUES IN HIV/AIDS COUNSELLING. Carballo, Manuel*; Lloyd, G.†; *World Health Organization, Global Programme on AIDS, Geneva, Switzerland; †Tulane University, New Orleans, Louisiana USA.

S.D.849
A BEREAVEMENT MODULE WITHIN THE AIDS CRISIS. Adolph, Reba, Scherer, E.; North York General Hospital, Willowdale, Ontario, Canada.

S.D.850
SHORT TERM INTERVENTION TO PROVIDE PSYCHOLOGICAL SUPPORT FOR HIV SEROPOSITIVE MALES IN MEXICO CITY: A CONCEPTUAL FRAMEWORK. Laura Elena De Caso; M. Hernandez*, C. Avila*, S. Gormaker†, N. Mueller†, and J. Sepulveda*; *Directorate of Epidemiology, Secretariat of Health and *Harvard Shool of Public Health Boston, Mass. USA.

S.D.851
EVALUATION OF THE AIDS PROGRAMME OF THE SCHORERSTICHTING, CENTER FOR PSYCHOSOCIAL CARE FOR HOMOSEXUALS IN AMSTERDAM, THE NETHERLANDS. Van Rooijen, Peter; Van den Boom, Frans†; De Rijk, Kees†; Jhr. Mr. J. A. Schorerstichting, Amsterdam, N-Holland, The Netherlands*; Netherlands Institute of Mental Health, Utrecht, Utrecht, The Netherlands†.

S.D.852
IS AFRICAN CULTURE IN CONFLICT WITH THE SICK ROLE IN AIDS. Dr. A.M.T. Lwegaba; D. Odongo-Aginya; Mary Amanyire.; AIDS Control Programme, Ministry of Health, P.O. Box 8, Entebbe, Uganda.

Clinical Ethics

S.D.853
THE PREVALENCE OF AIDS RELATED ETHICAL DILEMMAS. Corless, Inge*; Davis, A.†; MacIntyre, R.†; Pittman-Lindeman, M.†; *University of North Carolina, Chapel Hill, North Carolina, USA, †University of California, San Francisco, Caifornia, USA, ‡Department of Public Health, San Francisco, California, USA.

S.D.854
NON-EFFECT OF A CHANGE IN STATE AIDS CONFIDENTIALITY LAW ON ENROLLMENT IN A CLINICAL RESEARCH STUDY. McCormick, Wayne C.; Clinical Scholars Program, University of Washington, Seattle, WA, USA.

S.D.855
ETHICAL ISSUES FOR INSTITUTIONAL REVIEW BOARDS IN HIV-RELATED RESEARCH. Porter, Joan P.; Office for Protection from Research Risks, National Institutes of Health, Bethesda, MD USA.

S.D.856
THE INFLUENCE OF HIV SEROPOSITIVITY ON CLINICAL DECISION-MAKING—AN ANALYSIS OF ETHICAL ISSUES. Powderly, Kathleen E.*; Levin, B.W.†; *State University of New York Health Science Center at Brooklyn, Brooklyn, New York,U.S.A.,†Brooklyn College, Brooklyn, New York, U.S.A.

S.D.857
ORTHOPEDIC SURGEONS' EXPERIENCE WITH AND ATTITUDES ABOUT OPERATING ON HIV INFECTED PERSONS. Stocking, Carol*; Tasch, E.*; Pottenger, L.†; Siegler, M.*.; MABRC and Center for Clinical Medical Ethics, Department of Medicine* and Department of Surgery†, University of Chicago, Chicago, Illinois, USA.

S.D.858
PHYSICIANS' ATTITUDES TOWARD ASSISTED SUICIDE IN AIDS. Slome, Lee R.*; Moulton, J.M.*; Huffine, C.*; Gorter, R.†; Abrams, D.I.†; *California School of Professional Psychology, Berkeley/Alameda, CA, USA,; †Univ. of CA, SF, SF, CA, USA.

Drugs and Vaccines: Testing and Regulations

S.D.859
DEVELOPMENT OF AN UNIQUE ADVERSE DRUG EVENT DATA COLLECTION AND MANAGEMENT SYSTEM FOR MULTICENTER AIDS CLINICAL TRIALS. Helfert, Karen*; Moser, B.†, Pratt, D.†; Katz, D.*; Gubish, E.*; *Division of AIDS, National Institute of Allergy and Infectious Diseases, Bethesda, Maryland, USA. †Research Triangle Institute, Research Triangle Park, North Carolina, USA.

S.D.860
CALIFORNIA'S PROGRAM TO PROMOTE PRIVATE INDUSTRY INVOLVEMENT IN HIV VACCINE RESEARCH AND DEVELOPMENT. Kizer, K.W.; Margolis, Helene G.; Hughes, M.; Fraziear, T.; California Dept. of Health Services, Sacramento, CA, USA.

S.D.861
ETHICAL CONSIDERATIONS IN TESTING CANDIDATE HIV VACCINES. Mariner, Wendy K.; Boston University, Boston, Mass., U.S.A.

S.D.862
CANADA'S DRUG REGULATORY RESPONSE TO AIDS: PROGRESS IN 1989-90. Brill-Edward Michele; Ontario, Canada.

Health Care Worker Issues

S.D.863
THE ASSOCIATION OF NURSES IN AIDS CARE (ANAC). Blanchfield, Joan Clare; O'Brien, A.M.; St. Vincent's Hospital & Medical Center, NY, NY, USA.

S.D.864
A SURGEON WITH AIDS—LACK OF EVIDENCE OF TRANSMISSION TO PATIENTS. Mishu, Ban*; Schaffner, W.†; Horan, J.*; Wood, L.†; Hutcheson, R.†; McNabb, P.†; *Centers for Disease Control, Atlanta, GA; †Vanderbilt Univ., Nashville, TN; ‡TN Dept. of Health and Environment, Nashville, TN.

S.D.865
PWAS' ASSESSMENT OF NURSING CARE. Benedict, Susan C.*, Carr, S.†, Green, R.; *HIV Center for Clinical and Behavioral Studies, Columbia-Presbyterian Medical Center, Columbia University School of Nursing, NYC, NY, USA, †Alliance Against AIDS, division of Windsor Home Care, Care Group, Inc., NYC, NY, USA.

S.D.866
ATTITUDES OF MEDICAL STUDENTS TOWARDS AIDS IN BELO HORIZONTE, BRAZIL (1989). Greco, D.B.; Oliveira, M.R.; Oliveira, E.I.; Vitoria, M.A.A.; Ribeiro, G.J.C.; Castro-Neto, M.; Ferreira, L.M.; Faculty of Medicine, Federal University of Minas Gerais, Brazil.

S.D.867
INTERNS' & RESIDENTS' KNOWLEDGE & ATTITUDES CONCERNING HIV INFECTION. Mills, Christina; Univ. of Ottawa, Ottawa, Canada.

S.D.869
CARING FOR AIDS PATIENTS IN RURAL SETTINGS: NURSING'S CHALLENGE FOR THE 1990'S. Anderson, Donna G.*; Finn, J.†; Vojir, C.P.*; Lyne, B.*; Johnson, E.J.*; *Univ. of Colorado Health Sciences Center, Denver, CO; †Colorado Dept. of Health, Denver, CO, USA.

S.D.870
COUNTERTRANSFERENCE: AN ACTIVE/PASSIVE PARADIGM. Pousson, Rachel*; Sogolow, E.*; *State University of New York—HealthScience Center at Brooklyn, New York, USA.

S.D.871
DO MEDICAL STUDENTS WANT TO TREAT PEOPLE WITH HIV?. Culbert, Arthur, Strunin, L.; Boston University Schools of Medicine and Public Health, Boston, MA, USA.

S.D.872
HIV-RELATED PERCEIVED RISK, WORRY AND BEHAVIORAL CHANGES AMONG EMERGENCY MEDICAL SERVICE WORKERS: EVALUATION OF A PEER EDUCATIONAL PROGRAM ON AIDS. Bolon, T., Patrone-Reese, Janie, Dearmas, L., Tulsie, N.; University of Miami School of Medicine, Miami, Florida, U.S.A.

S.D.873
INFLUENCE OF THE AIDS EPIDEMIC ON MEDICAL STUDENTS' CAREER CHOICES. Loring, Keith;*Kelen GD,†The Johns Hopkins University School of Medicine; ‡Division of Emergency Medicine, Baltimore, MD, USA.

S.D.874
THE IMPACT OF PHYSICIAN CAREER STAGE ON RESPONSE TO AIDS. Taylor, KM,* Eakin, JM,* Kelner, MJ,* Mills, C† and Skinner, Harvey A*; *Department of Behavioural Science, University of Toronto, Ontario Canada; †University of Ottawa, Department of Community Medicine, Ontario, Canada.

S.D.875
PHYSICIAN BELIEFS ABOUT OCCUPATIONAL RISK AND SEVERITY OF HEALTH STATES ASSOCIATED WITH HIV AND HEPATITIS INFECTION. Owens, D.K.*; Nease, Robert F.†; *Stanford University, Stanford, CA, USA; †Decision Focus, Inc., Los Altos, CA, USA.

S.D.876
AIDS AND THE NATIONAL MEDICAL ASSOCIATION: KNOWLEDGE, ATTITUDES AND BELIEFS IN A BLACK PHYSICIAN POPULATION. Caine, Virginia*; Brown, L.†; Alexander, W.‡; Caine, R.‖; Joyner, J.#; Shervington, W.#, Katz, B.*; *Indiana University, Indianapolis, USA, †Columbia University, New York, USA, ‡Morehouse Medical, Atlanta, USA, ‖UMDNJ, Newark, USA, #National Medical Association.

S.D.877
STIGMA AND THE NURSING CARE OF CHILDREN WITH AIDS. Denker, Ann-Lynn; University of Miami/Jackson Memorial Medical Center, Miami, FL, USA.

S.D.878
AIDS-RELATED EXPERIENCES AND PRACTICES OF PRIMARY CARE PHYSICIANS IN LOS ANGELES: 1984-1989. Lewis, Charles E.; *Montgomery, Kathleen*; *University of California, Los Angeles, California, USA.

S.D.879
AIDS/HIV INFECTION CONTROL PRACTICES, ATTITUDES & BELIEFS OF DENTAL FACULTY AND STUDENTS. Shin, Diana M.*, Wong, A.†; *Center for Interdisciplinary Research in Immunology and Disease (CIRID), UCLA, Los Angeles, CA; †UCLA School of Dentistry, Los Angeles, CA; USA.

S.D.880
OCCUPATIONAL EXPOSURE TO HIV AND HEPATITIS B VIRUS (HBV): A COMPARATIVE ANALYSIS OF RISK. Owens, Douglas, Nease, R.F., Jr.; Department of Medicine, Stanford University, Stanford, CA, USA.

S.D.881
AIDS IMPACT ON HEALTH CARE WORKERS AND AN OUTLOOK FOR THE YEARS 90—A PHENOMENOLOGICAL APPROACH. Hanan, Janete Luzia Leite; Moura, E.M.M.; Oliveira, E.R.; Morais-de-Sa, C.A.; Gaffree & Guinle Univ. Hospital, Univ. of Rio de Janeiro, Brazil.

S.D.882
PEDIATRIC HIV INFECTION: A COMPARISON OF TEACHING METHODS IN EDUCATING PEDIATRIC AND PERINATAL NURSES. Gross, Elaine*; Boland, M.*; Sherwen,.†; Passannante, M.‡; Oleske, J.‖; Connor, E.*; *AIDS Clinical Trials Unit, UMD-New Jersey Medical School, AIDS Program, Children's Hospital of New Jersey, Newark, New Jersey USA, †Thomas Jefferson University, Philadelphia, Pennsylvania, USA, ‡UMD-New Jersey Medical School, Newark, New Jersey, USA.

S.D.883
CDC RECOMMENDATIONS FOR TUBERCULOSIS CONTROL IN HEALTH CARE SETTINGS WHERE HIV-INFECTED PERSONS RECEIVE CARE. Dooley, Samuel W.; Castro, K.G.; Hutton, M.D.; Mullan, R.J.; Polder, J.A.; Bloch, A.B.; Snider, D.E.; Centers for Disease Control, Atlanta, GA, USA.

S.D.884
SCREENING FOR TUBERCULOSIS WITH TUBERCULIN SKIN TESTS AND ANERGY PANELS AMONG HEALTH CARE WORKERS WHO ARE POSSIBLY AT HIGH RISK FOR HIV INFECTION. Pettyjohn, Rodger*, Dennenberg, R.*, Torres, R.†, Affoumado, R.*, Engel, J.*; *Bellevue Hospital Center, Community Health Project, New York, NY; †St. Vincent's Hospital and Medical Center, New York, NY; USA.

S.D.885
EXPERIENTIAL TRAINING ABOUT AIDS FOR HEALTH AND MENTAL HEALTH CAREGIVERS: THE AIDS COMMUNITY TRAINING PROJECT. Anderson, John R.*; Batchelor, W.†; Baretta, J.‡; Ferels, J.*; Jones, B.‖; McKusick, L.#; Pawlowski, W.§; Pollatsek, J.§*; *American Psychological Aslsociation, Washington, DC, USA.

S.D.886
A STAFF TRAINING PROGRAM FOR PROFESSIONAL AND PARA-PROFESSIONALS WORKING WITH PEOPLE WHO HAVE MENTAL RETARDATION/DEVELOPMENTAL DISABILITIES WITH IMPLICATIONS FOR TRAINING STAFF WHO WORK WITH OTHER DIFFERENTLY ABLED PEOPLE. Jacobs, R., Samowitz, P., Levy, P., Levy, J.; Young Adult Institute, New York, New York, USA.

S.D.887
AIDS TRAINING IN PSYCHIATRIC RESIDENCIES IN THE U.S.A. Kaplan, Eric, Nichols, S.; American Psychiatric Association, Washington, DC, USA.

S.D.888
RESULTS OF AN EVALUATION OF AIDS/HIV STAFF TRAINING IN A NATIONAL HEALTHCARE SYSTEM: LESSONS LEARNED. Durnan, J. Richard*, Walsh, P.*, Craft, C.*, Sverha, S.*, Masler, D.S.*; *Department of Veterans Affairs, Washington, DC, USA.

S.D.889
HEURISTICS FOR PLANNING SUCCESSFUL SUSTAINED AIDS/HIV EDUCATION FOR ALL HOSPITAL STAFF. Sverha, Susan*, Masler, DS*, Durnan, JR*, Walsh, P*; *Department of Veterans Affairs, Washington, DC, USA.

S.D.890
THE ROLE OF HIV INFECTED PATIENTS IN EDUCATING HEALTH CARE PROFESSIONALS. Ogden, Ann, M.S., King, Terry, M.A., Von Behren, Larry, M.D., Mast, Terrill A., Ph. D.;: Southern Illinois University School of Medicine, Springfield, Illinois, USA.

S.D.891
DESIGN AND IMPLEMENTATION ISSUES IN TRAINING STAFF TO DO PRIMARY PREVENTION OF HIV IN ACUTE CARE SETTINGS. Hebert, Pamela; Stechman, A.; Snyder, B.; Gralla, R.; Department of Veterans Affairs, Washington, D.C., USA.

S.D.892
PHYSICIANS' ATTITUDES AND PRACTICES TOWARDS HEALTH CARE PROMOTION WITH PARTICULAR REFERENCE TO AIDS. Calabrese, Leonard; Kelley, D.; Cleveland Clinic Foundation, Cleveland, Ohio, USA.

S.D.893
PHYSICIANS' ATTITUDES TOWARDS CONTINUOUS MEDICAL EDUCATION ON AIDS IN THE PROVINCE OF QUEBEC. Duval, Bernard, Nadeau, D., Fortin, C., Boyer, R., Godin, G.; Research Clinic Unit, Central Hospital of Laval, University of Laval, Quebec, Canada.

S.D.894
DESCRIPTION AND EVALUATION OF AN AIDS EDUCATION PROGRAM FOR NON-NURSING HOSPITAL HEALTH CARE WORKERS. McBride, Evelyn*, Ford, P.*, Robertson, D.†, Florent, N.†; *AIDS Education Program, Kingston, Ontario, Canada; †Kingston General Hospital, Kingston, Ontario, Canada.

S.D.895
A MODEL FOR TRAINING COMMUNITY HEALTH CENTER (CHC) STAFF TO COLLECT RELIABLE AND VALID BEHAVIORAL DATA FROM CLIENTS AT HIGH RISK OF HIV INFECTION. Fernandez, M. Isabel*, Bowen, G.S.*, Gardom, J.*, Kerr, S.*, Salomon, P.†; Centers for Disease Control, Atlanta, GA, USA*, Health Resource Services Admin., Rockville, MD, USA†.

S.D.896
BEHAVIORAL CHANGES THROUGH PERSONNEL TRAINING-THE BRAZILIAN EXPERIENCE. Libuy Araya, Jeanette*; Rodrigues, L.*; Bergamaschi, D.*; *Ministry of Health—National Division of STD/AIDS, Brasilia-DF, Brazil.

S.D.897
ADEQUACY OF INFORMAL SUPPORT TO GAY MEN WITH AIDS AND THE PSYCHOLOGICAL CONSEQUENCES FOR THE CAREGIVER. Raveis, Victoria H.; Siegel, K.; Kletecka, C.; Segal, J.; Moynihan, R.; Memorial Sloan-Kettering Cancer Center, NY, NY, USA.

S.D.898
THE UNIVERSITY OF MIAMI SCHOOL OF MEDICINE/AIDS CLINICAL RESEARCH UNIT: A MODEL PROGRAM WHICH FACILITATES STAFF RETENTION AND DECREASES BURNOUT FOR AIDS HEALTH CARE PROVIDERS. Healy-Chidekel, Jane; Patrone-Reese, J; Almunia, M; Dow, M; Fischl, MA.; University of Miami, Miami, Florida, USA.

S.D.899
RELATIONSHIP BETWEEN BURNOUT, SOCIAL SUPPORT AND COPING IN NURSES WHO CARE FOR PEOPLE WITH AIDS. Driedger, Susan M.; Cox, D.; Simon Fraser University, Burnaby, British Columbia, Canada.

S.D.900
THE PSYCHOSOCIAL IMPACT OF AIDS ON HEALTH CARE PROVIDERS: CRITICAL ANALYSIS OF THE LITERATURE AND IMPLICATIONS FOR POLICY. Eakin, Joan M* and Taylor, KM*; *Department of Behavioural Science, University of Toronto, Ontario, Canada.

S.D.901
IDENTIFYING STRESSORS IN HIV-RELATED HEALTH WORKERS (HCW) TO TARGET SUCCESSFUL INTERVENTIONS. Rogers, Mari; Earl, W.; Cohn, D.; Denver Disease Control Service, Denver, CO, USA.

S.D.902
AIDS IN THE WORKPLACE: IMPACT ON STAFF WHEN CO-WORKERS BECOME PATIENTS. Hadley, Doris*; Dekutoski, J.†; Hanson, K.*; Jensen, P.†; *Depts. of Nursing and Medicine; †Dept. of Veterans Affairs Medical Center and the Univ. of California, SF, CA, USA.

New Challenges for the 1990's

S.D.903
BLACK AND LATIN REPRESENTATION AT THE INTERNATIONAL AIDS CONFERENCES. Lawson, Candace, Weinstein, M., Brown A., Fullilove, R., Fullilove, M., Hulley, S.; Multicultural Inquiry and Research on AIDS, Bayview-Hunter's Point Foundation and UCSF for AIDS Prevention Studies, San Francisco, CA, USA.

S.D.904
STRATEGIES FOR THE 1990S: AIDS PREVENTION AMONG ETHNIC MINORITIES. Hayes, Robbie; Sawyer, J.; Keyser-Smith, J.; R.O.W. Sciences, Inc., Rockville, MD, USA.

S.D.905
A SHELTER-BASED HIV PREVENTION PROGRAM FOR THE URBAN HOMELESS POPULATION. Cabler, Clifford L.; Krepcho. M.; Valentine, J.; Dallas County Health Dept., Dallas, TX, USA.

S.D.906
SURVIVOR SYNDROME IN THE GAY COMMUNITY. Wayment, Heidi A.*, Kemeny, M.†, Silver, R.‡; *Department of Psychology, UCLA, Los Angeles, CA; †UCLA School of Medicine, Los Angeles, CA; ‡Department of Social Ecology, UC Irvine, Irvine, CA; USA.

S.D.907
LIVING HEALTHY WITH HIV. Karl, Scott B.; Eck, E.K.; Southern California Permanente Medical Group Los Angeles Medical Center, Los Angeles, California, U.S.A.

S.D.908
TRADITIONAL CHINESE MEDICINE AND TREATMENT OF AIDS. Li, Peng; Jihua, H.; Naval Medical College of PLA; Nanjing, China.

S.D.909
A UK PROGRAMME TO INVOLVE YOUNG PEOPLE ACTIVELY IN THE EVALUATION AND PLANNING OF AIDS/HIV INFORMATION PROJECTS FOR THEIR PEERS. Hutton, Ceri*, Jay, M*, Kelmanson, A*; National AIDS Trust (NAT), London, England.

S.D.910
INFLUENCING CHOICES OF MEDICAL STUDENTS TO HIV-RELATED CAREERS. Mazzullo, John; Wroblewski, S.; Rudd, R.; Fairchild, P.; JSI Research & Training Institute, Boston, MA, USA.

S.D.911

CLINICAL MANAGEMENT GUIDELINES OF HIV INFECTION AND AIDS, AN ALGORITHM APPROACH. Wabitsch, Kurt Rudolf*; Mills, J.†; Malkin, J.E.*; Gottlieb, L‡, Suskind, O.‡; Margolis, C.Z.‖ Tarantola, D.*; *Global Program on AIDS, World Health Organization (WHO), Geneva, Switzerland. †Univ. of California, San Francisco, CA, USA; ‡Harvard Community Health Plan, Boston, MA, USA; ‖Ben Gurion University, Beer Sheva, Israel.

RAPPORTEUR SESSION
(CONFERENCE SUMMARIES)
SUNDAY, 24 JUNE, 8:00–10:30 AM, MOSCONE, ROOM A/B

Track A: Basic Science

Jay Levy, Track Chair

John Coffin
Department of Molecular Biology and Microbiology
Tufts University, USA

Michael Sela
Department of Chemical Immunology
Weizman Institute of Science, Israel

Track B: Clinical Science and Trials

John Mills, Track Chair

Ann Collier
Assistant Professor of Medicine
Harborview Medical Center
University of Washington, USA

Anne Willoughby
Chief, Pediatric, Adolescent and Maternal AIDS Branch
Center for Research for Mothers and Children
National Institute of Child Health and Human Development, USA

Track C: Epidemiology and Prevention

Stephen Hulley, Track Chair

Alan Lifson
Chief, Research Branch
San Francisco AIDS Office
San Francisco Department of Public Health, USA

Elizabeth Ngugi
Department of Community Medicine
University of Nairobi, Kenya

Track D: Social Science and Policy

Donald Abrams, Track Chair

Manuel Carballo
Chief, Social and Behavioral Research
World Health Organization

Michael Helquist
Coordinator for Latin America/Carribean Programs
AIDSCOM
Academy for Educational Development, USA

CLOSING CEREMONY

SUNDAY, JUNE 24, 11:00 AM–12:30 PM, MOSCONE, ROOM A/B

John Ziegler, Paul Volberding
Conference Chairs

CLOSING REMARKS
Lars Olof Kallings
President
International AIDS Society

Hiroshi Nakajima
Director General
World Health Organization

"AIDS RESEARCH: CONSIDERATIONS FOR THE 1990s"
Anthony Fauci
Director
National Institute of Allergy and Infectious Diseases
Bethesda, Maryland, USA

"THE ROLE OF NONGOVERNMENTAL ORGANIZATIONS"
Rebecca Sevilla
Executive Director
Movimiento Homosexual de Lima
Lima, Peru

"THE GROWING PROBLEM OF AIDS IN ASIA"
Eng-kiong Yeoh
Chairman
Hong Kong Department of Health, Working Group on AIDS
Hong Kong

KEYNOTE ADDRESS
The Honorable Louis Sullivan
Secretary, Department of Health and Human Services
Washington, DC, USA

"WELCOME TO THE SEVENTH INTERNATIONAL CONFERENCE ON AIDS"
Giovanni Rossi
Chair
Seventh International Conference on AIDS
Florence, Italy

As you see, the abstracts are oriented horizontally rather than vertically on the page. This orientation and the arrangement of four abstracts to a page allowed more space and less photographic reduction of the abstracts while keeping the size of the book functional. The track designation, presentation numbers, and presentation date of the abstracts appear at the top of each page. We believe that you will find the material easily accessible and readable in this format.

TRACK A: BASIC SCIENCE

ABSTRACT SESSION: HIV ENTRY AND REPLICATION

S.A.1

HIV-1 TROPISM FOR MONONUCLEAR PHAGOCYTES IS GENETICALLY DETERMINED BY EARLY EVENTS

O'Brien, William, Koyanagi, Y.; Zack, J.; Chen, I.S.Y.
University of California, Los Angeles, USA

Objective: To understand the mechanism of HIV-1 tropism for mononuclear phagocytes.
Methods: Recombinant HIV-1 strains were generated by substituting regions from the clone of a highly macrophage-tropic strain, $HIV\text{-}1_{JR\text{-}FL}$, into an infectious clone of the poorly macrophage-tropic strain, $HIV\text{-}1_{NL4\text{-}3}$. Primary blood mononuclear phagocytes were purified by adherence for seven days, and infected by equivalent amounts of parental and recombinant strains. Viral DNA was analyzed from infected cells by a quantitative polymerase chain reaction (PCR) assay.
Results: Recombinant strains have identified a region at the 3′ end of the viral genome that includes the *env* gene, which is important for mononuclear phagocyte tropism. PCR analysis shortly after infection of mononuclear phagocytes shows that infection with macrophage-tropic strains results in greater than 100-fold more DNA than does infection with poorly tropic strains.
Conclusions: Mononuclear phagocyte infectivity is likely to be determined by *env* sequences during the early phase of viral replication prior to reverse transcription.

S.A.2

MOLECULAR AND BIOLOGICAL STUDIES ON A NEUROLOGICAL HIV-1 ISOLATE

Liu, Z-Q.*; Wood, Charles*; Levy, J.A.**; Cheng-Mayer, C.**
*University of Kansas, Lawrence, Kansas, USA, **Cancer Research Institute, University of California, San Francisco, California, USA.

Objective: The objective of this study is to molecularly clone, characterize and identify the gene(s) that is responsible for the biological characteristic of a neurological isolate of HIV-1.
Methods: HIV-1 strain 128A was isolated from spinal cord tissue of an AIDS patient at autopsy. This isolate displayed distinct biological properties and cellular tropism. It cannot be grown in any in any T cell lines tested or a monocytic cell line (U937). The virus, however, propagated efficiently in primary macrophage cultures. We have cloned the provirus from the infected cell culture, mapped and generated recombinant viruses between 128A and the peripheral blood isolate SF2. Different recombinant viruses containing various 128A and SF2 genes were then tested for their biological properties.
Results: The results show that recombinant viruses that have acquired the 128A *env* gene displayed 128A biological properties and cellular tropism, no other viral genes seem to be necessary. The entire *env* gene of 128A was then sequenced and compared with the sequence of SF2. The two sequence were about 93% homologous with variation scattered mainly in the hypervariable region of gp120. No distinct deletions or insertions were observed.
Conclusion: Our results suggest that the *env* gene is the major determinant for the biological properties and cellular tropism of 128A. Since no drastic changes in the *env* gene sequence were noted, subtle changes may be responsible. Experiments are now in progress to identify the exact location of the *env* gene that is responsible for the neurotropic specificity of 128A.

S.A.3

MODIFICATION OF CELL TROPISM OF HIV-1 BY A SINGLE POINT MUTATION AT THE NEUTRALIZATION EPITOPE IN THE ENV GENE.

Takeuchi, Y.; Akutsu, M.; Murayama, K.; Shimizu, N.; Hoshino, Hiroo
Department of Hygiene, Gunma University School of Medicine, Maebashi, Japan

Objective: We have isolated a variant of HIV-1 which is highly infectious to fibroblast-like cells (BT cells) derived from human brain as well as CD4 positive T cells. This variant HIV-1, named HIV[GUN-1v], was obtained by infecting BT cells with a proto-type HIV-1 isolate, named HIV[GUN-1_{WT}], which is highly infectious to T cells, but scarcely infectious to BT cells. The viral gene responsible for the host-range difference between the variant and proto-type HIV-1s was tried to be elucidated.
Methods: Various chimeric recombinant viruses were made and examined their host range. The restriction fragments responsible for the difference in the host-range and DNA sequences of these fragments were determined. Site-directed mutagenesis was used to confirm the base substitutions which were responsible for the host ranges of the HIV isolates.
Results: Examination of the infectivities of various recombinant viruses and mutagenized viruses showed that a single nucleotide exchange was responsible for the difference in infectivity of BT cells: HIV[GUN-1v] contains a thymine residue instead of the cytosine residue in HIV[GUN-1_{WT}] at position 931 of the env coding sequence. This replacement in HIV[GUN-1_{WT}] genome induced ability to infect BT cells, which was expected to change the 311th amino acid of the envelope glycoprotein, gp120, from proline to serine, that is located in a variable region containing type-specific immunodominant epitopes.
Conclusion: HIV[GUN-1v] acquired a wider host range than HIV[GUN-1_{WT}] by a single point mutation in the type-specific neutralization epitope of the env gene.

S.A.4

IDENTIFICATION OF A PUTATIVE CELLULAR RECEPTOR FOR HIV-1 gp41.

Henderson, Lee A.*; Nasar M. Qureshi,* ** David H. Coy,*** and Robert F. Garry.**
*Department of Pathology, **Microbiology and Immunology, and ***Medicine, Tulane Medical School, New Orleans, LA, USA.

S.A.5

MECHANISM OF SIV-INDUCED VIRAL FUSION INVOLVES ACTIVATION THE VIRAL MEMBRANE VIA CD4.

Allan, Jonathan* Whitehead, E.*; Buck, D.**
*Southwest Foundation for Biomedical Research, San Antonio, Texas, USA. **Becton-Dickinson Monoclonal Antibody Center, Mountain View, California, USA.

Objectives: Immunodeficiency viruses are comprised of a genetically diverse group of retroviruses which thus far have been shown to utilize CD4 as the primary receptor to initiate infection of both T cells and monocyte-derived cell lineages. We found that recombinant soluble human CD4 (rCD4) could enhance infection of SIVagm from African green monkeys in contrast to its blocking effects with HIV-1, HIV-2, and SIVmac.These studies were initiated to examine this rCD4-induced enhancement and to ultimately understand the complex events in viral fusion necessary for both viral penetration and cytopathology.
Methods: The effectiveness of rCD4 in modulating SIVagm and HIV-1 infection was studied *in vitro* with a variety of human T cell lines. Induction of syncytium formation at various times after infection in the presence or absence of CD4 was evaluated.
Results: rCD4 could alter the potency of SIVagm infection with 100 fold less virus required for the induction of syncytium formation. Enhancement of infection was concentration-dependent and syncytium formation typically appeared within 24 hours in contrast to 4-6 days in its absence. Acceleration in de novo protein synthesis was observed concomitent with syncytium formation indicating that the kinetics of viral infection and replication are effected. Monoclonal antibodies to CD4 determinants for gp120 binding could not block CD4 enhancement but a monoclonal antibody which binds to V2, a region outside the gp120 binding domain was found to block CD4 mediated enhancement. it could also co-precipitate gp120-CD4 indicating that this antibody exerts its effects by sterically hindering viral fusion. Inhibition of enhancement could also be demonstrated with antibodies from naturally and experimentally infected monkeys.
Conclusions: Based on these results, rCD4 exerts its enhancing effects by inducing or activating viral determinants responsible for viral fusion in SIVagm. The exact mechanism of viral fusion can be addressed with monospecific reagents targeted to this enhancing viral determinant and to non-CD4 receptors on the cell surface involved in the fusion process.

S.A.6

SERINE PROTEASE IN THE MEMBRANE OF HUMAN T4$^+$ LYMPHOCYTES IS A NOVEL BINDING PROTEIN OF gp120 OF HIV-1 OTHER THAN CD4 RECEPTOR

Kido, H.; Fukutomi, A; Katunuma Nobuhiko
Institute for Enzyme Research, The University of Tokushima, Tokushima, Japan.

Objective: We recently reported that trypstatin and anti-rat mast cell tryptase (tryptase M) antibody markedly inhibited the formation of syncytia induced by HIV-1 (FEBS Lett. 248, 48, 1989). These findings, together with the homology in the sequences of the active site of trypstatin and the neutralizing epitope of gp120 (Asn^{306}-Glu^{337}, NNT24) suggest that a tryptase M-like protease in plasma membrane may have a role in the process of HIV-1 infection. Here we show that the isolation and characterization of a novel serine protease, named tryptase TL_2, in the membrane of Molt-4, clone 8, which is immunologically reactive with anti-tryptase M, and that it binds specifically to the gp120 of HIV-1. **Methods:** HIV-1 gp120 (MicroGeneSys, Inc.) and purified tryptase TL_2 were radioiodinated by the method of Bolton and Hunter. **Results and Conclusion:** Purified tryptase TL_2 has MW of 200KD and is composed of two identical subunits of 38KD and four identical subunits of 31KD. This enzyme binds specifically to ^{125}I-gp120 and vice versa. This binding was selectively blocked by the inhibitors of tryptase TL_2, such as trypstatin and NNT24. These findings suggest that tryptase TL_2 is an important in the binding of HIV-1 at the membrane other than CD4 receptor.

S.A.7

GENERATION OF REPLICATION-DEFECTIVE HIV BY GENETIC COMPLEMENTATION

Daher, Kathleen; Littman, Dan;
University of California, San Francisco, CA

A drug resistance gene was inserted into a replication-defective HIV proviral genome for packaging into HIV virions. The viral genome was made relication-defective by a large deletion in the envelope gene. This defect was complemented by co-transfection of the defective proviral DNA and an envelope construct. Virus produced by the transfected cells is infectious for CD4(+) cells and transmits the drug resistance gene, but can not yield infectious progeny. This system provides a quantitative measure of HIV-infectablity since each infection event results in the growth of a drug-resistant colony. The effect of a variety of different envelopes on the host range of HIV is currently being tested. Human CD4(+) cells were readily infected with the virus produced in this system. Infection of CD4(-) cells was also observed at a much lower rate. As predicted by studies with replication-competent HIV, mouse fibroblasts bearing human CD4 were not infectable. Transfer of chromosomes or genes from HIV-infectable to non-infectable cells may allow them to be infected. Such cells can be selected and isolated using this system. In this manner, cellular factors involved in HIV infection may be identified.

S.A.8

ROLE OF N-LINKED OLIGOSACCHARIDES OF HIV-1 ENVELOPE GLYCOPROTEIN IN VIRUS INFECTIVITY AND CELL TROPISM

Lee, Woan-Ruoh ; Syu, W.J. ; Matsuda, M. ; Tan, S.C. ; Du, B. ; Wolf, A. ; Essex, M. ; Lee, T.H.
Harvard University School of Public Health, Boston, MA, USA

Objective: To determine the role of N-linked oligosaccharides of HIV envelope glycoprotein in cell tropism and virus infectivity.
Methods: HIV molecular clones with mutations introduced at potential N-linked glycosylation sites of gp120 and gp41 were constructed by site-directed mutagenesis. Mutant and wild type proviruses were transfected into target cells by DEAE dextran method. Cell free viruses in culture supernatant of cells transfected with the wild type or mutant proviruses were studied for their ability to infect lymphoid and monocytic cells. Virus infectivity was measured by reverse transcriptase assay and syncytium formation. Viral replication in target cells was measured by the detection of intracellular HIV antigens.
Results: Virus infectivity was affected profoundly by the removal of some potential N-linked glycosylation sites in gp120 and gp41. In addition, the removal of a single N-linked glycosylation site in the N-terminal region of gp120 was sufficient to alter cell tropism.
Conclusion: Some N-linked oligosaccharides of HIV-1 envelope glycoprotein appear to have essential roles in virus infectivity or cell tropism.

TRACK A: BASIC SCIENCE
ABSTRACT SESSION: ANIMAL MODELS FOR AIDS

S.A.9

HOST RESPONSES ASSOCIATED WITH ONSET AND PREVENTION OF LENTIVIRAL DISEASE.

Narayan, Opendra; Johns Hopkins University School of Medicine, Baltimore, MD, USA

S.A.10

ACUTELY PATHOGENIC MOLECULARLY CLONED SIV/SMM-PBJ14: IN VIVO AND IN VITRO CORRELATES OF DISEASE

Fultz, Patricia N.*; Dewhurst, S.**; Anderson, D.C.*; Mullins, J.I.***
*Emory University, Atlanta, Georgia, USA; **Harvard University, Boston, Massachusetts, USA; ***Stanford University, Stanford, California, USA.

Objectives: To identify (i) pathogenic molecular clones of SMM-PBj14 that reproduce acute disease, and (ii) in vivo and in vitro correlates of disease.
Methods: Pig-tailed macaques were inoculated with infectious molecular clones derived from acutelt pathogenic and minimally pathogenic biologic clones of SMM-PBj14. In vitro biologic properties of the different clones were assessed with respect to efficient replication in resting macaque and mangabey PBMC, induction of proliferation of PBMC, and cytopathicity for mangabey CD4+ lymphocytes.
Results: Molecular clones of SMM-PBj14 induced acute severe bloody diarrhea in 6 of 6 pig-tailed macaques and death of five animals within 6 to 55 days. The histopathology was identical to that seen in animals that died acutely following inoculation of the original virus. The molecular clones also were cytopathic for mangabey $CD4^+$ lymphocytes and replicated efficiently in resting macaque PBMC. In contrast, the parent virus of SMM-PBj14, SIV/SMM-9, which causes no disease in mangabeys and slowly progressive disease in macaques, was not cytopathic for mangabey $CD4^+$ lymphocytes, did not induce proliferation of macaque PBMC and replicated poorly in resting PBMC.
Conclusions: Analysis of chimeric viruses constructed from acutely pathogenic and minimally pathogenic molecular clones of SIV/SMM will validate the apparent correlates of in vivo pathogenicity and in vitro biologic properties and, more importantly, will define pathogenic determinants of lentiviruses.
(Supported in part by NIH grants AI-27136 and RR-00165.)

S.A.11

PATHOGENESIS OF INTESTINAL DYSFUNCTION IN HUMAN AND SIMIAN AIDS

Dandekar, Satya*; Heise C*, Martfeld D*, Miller C**, Marx P**, Donovan RM*, Halsted CH*. Department of Internal Medicine* and California Primate Research Center**, University of California, Davis, USA.

Objective: (1) To study the pathogenesis of intestinal abnormalities associated with HIV infection in AIDS and ARC patients and (2) to evaluate SIV-infected macaques as an animal model for HIV enteropathy.
Methods: Intestinal absorption, jejunal digestive enzymes, and morphology were measured in 9 HIV-infected patients with diarrhea. Virally-infected cells were localized in jejunal biopsies by *in situ* hybridization. Additionally, we assessed enzymes, morphology, and the presence of SIV in jejunal tissues from 9 SIV-infected rhesus monkeys to evaluate intestinal pathology in this animal model of AIDS.
Results: Five of 7 HIV-infected patients malabsorbed dietary fat. Sucrase activity was decreased in 7 biopsies and lactase was low in all 9 biopsies. All SIV-infected animals had depressed sucrase and lactase activities compared to uninfected monkeys. Morphological changes in patient biopsies included enlarged enterocyte nuclei, increased mitotic indices, and reversed villus/crypt ratios. Crypt hyperplasia, villus atrophy, and lymphocytic infiltrates were observed in jejunum from SIV-infected animals. HIV RNA was detected in enterocytes of 1 ARC patient with severe malabsorption and in mononuclear cells of the lamina propria and epithelium in 4 other patients (2 ARC, 2 AIDS). SIV RNA was found in crypt and villus epithelium, lamina propria, and lymphoid patches in 6 of 8 monkeys, 4 of which had diarrhea and 2 which were asymptomatic.
Conclusion: These results support our hypothesis that intestinal mucosal infection with HIV or SIV can be an early event and may affect development, maturation, and function of enterocytes resulting in malabsorption. This pathogenic mechanism may involve the direct HIV infection of the absorbing enterocytes or cytokines secreted by HIV-infected inflammatory cells. Intestinal changes in the SIV model are comparable to abnormalities observed in HIV infection, therefore this system will be suitable for elucidating the pathogenesis of HIV enteropathy.

S.A.12

FELINE IMMUNODEFICIENCY VIRUS - GENETIC ORGANIZATION AND REGULATION

Ellen Elizabeth Sparger, Paul A. Luciw, Niels C. Pedersen, and John Elder*; University of California, Davis, CA and *Research Foundation of Scripps Clinic, La Jolla, CA

Objective: Feline immunodeficiency virus (FIV) is a T-lymphotropic, cytopathic lentivirus associated with a fatal immunodeficiency syndrome in domestic cats. Disease symptoms include lymph-adenopathy, hematologic abnormalities, wasting, diarrhea, and susceptibility to opportunistic pathogens.

Methods: To study regulation of FIV gene expression we have molecularly cloned the genomes of two FIV isolates. Transient expression assays in a variety of tissue culture cells were used to evaluate the role of the long terminal repeats (LTR) in viral transcription. Promoter elements in the LTRs were evaluated by site-directed mutagenesis procedures.

Results: We have molecularly cloned proviruses from FIV-infected tissue culture cells. Two clones representing independent virus isolates were shown to give rise to infectious virus after DNA-transfection of permissive cells. The complete nucleotide sequences of these clones have been determined. The proviral form has a total length of 9,472 base pairs (bp). In addition to genes for virion proteins, FIV encodes extra open reading frames which may be transactivator genes. The initiation site in the LTR for viral transcripts has been identified by primer extension. In transient expression assays, the FIV LTR was shown to respond to T-cell activation signals and to the immediate early gene of a member of the herpes virus family.

Conclusions: With respect to regulation of viral gene expression, FIV shows several similarities to features of HIV gene expression. Virologic, clinical, and genetic features of FIV suggest that this animal lentivirus may be a useful model for HIV infection and AIDS.

S.A.13

COINFECTION OF CATS WITH FELINE IMMUNODEFICIENCY VIRUS (FIV) AND FELINE LEUKEMIA VIRUS (FELV) AFFECTS TISSUE DISTRIBUTION OF FIV AND DISEASE PROGRESSION

Michael Torten, Satya Dandekar, E. Elizabeth Sparger, Bruce A. Rideout, and Paul A. Luciw, Niels C. Pedersen; University of California, Davis CA.

Objective: Feline immunodeficiency virus (FIV) is a T-lymphotropic cytopathic lentivirus associated with a fatal AIDS-like disease in cats that is characterized by lymphoid depletion, severe weight loss, diarrhea, and infection with a variety of opportunistic pathogens. Cats infected with FIV show a long latent period, lasting 2 or more years, before development of disease. We tested the notion that the feline leukemia virus (FeLV), an oncornavirus of cats, may be a co-factor for disease progression in this system.
Methods: Experimental co-infection of cats with FIV and FeLV led to rapid development (less than 3 months) of fatal FAIDS. Cats infected with either FIV alone or FeLV alone have shown only mild clinical symptoms and have remained relatively healthy for more than 6 months. Tissue distribution of FIV was assessed by the polymerase chain reaction (PCR) technique and by in situ hybridization with probes specific for FIV.
Results: FIV DNA and RNA were detected in peripheral blood lymphocytes (PBL) and lymph nodes of cats infected with FIV alone or with both FIV and FeLV. FIV DNA and RNA were present in about 10-fold higher quantities in these tissues of co-infected cats than in singly infected cats. In addition, only co-infected cats contained detectable FIV in kidney, liver, intestine, and brains. The level of FeLV in co-infected cats was similar to that in cats infected only with FeLV.
Conclusions: These findings suggest that FeLV acts as a co-factor for enhancing FIV replication in co-infected animals. Analysis of the role of co-factors in the FIV-FAIDS animal model system may have implications for human immunodeficiency virus (HIV) infection and AIDS in humans.

S.A.14

UV IRRADIATION INCREASES HIV LONG TERMINAL REPEAT (LTR) DRIVEN EXPRESSION OF CHLORAMPHENICOL (CAT) IN LTR/CAT TRANSGENIC MICE

Frucht, David M.*; Vicenzi,E.**; Leonard,J.**; Belcher,J.H.**; Martin,M.A.**; *Howard Hughes Medical Institute; LMM, NIAID, Bethesda, MD,USA, **LMM, NIAID, Bethesda, MD, USA.

Objective: To determine whether HIV-LTR driven expression increases in HIV-LTR/CAT transgenic mice following exposure to UV radiation.
Methods: Transgenic mice with 8 copies per cell of an HIV-LTR construct were exposed to 28.8 kJ/m² of 254 nm UV radiation. Ear and tail protein were prepared at varying times after exposure and 100 ug was assayed for CAT activity.
Results: In preliminary experiments using a 6 watt lamp, it was determined that non-transgenic FVB/N mice suffered no deleterious effects following two hours of irradiation. Transgenic animals were therefore exposed to UV light for two hours, and tail and ear specimens were collected 24 hours later. Compared to their unirradiated transgenic littermates, an 18-fold increase in CAT activity was observed in ear samples from the irradiated animals. No increase in CAT expression was detected in the tail specimens. The kinetics of in vivo UV induction was monitored by collecting ear specimens at various times (up to 7 days) following irradiation. CAT activity increased 2 hours following exposure, reached a maximum on day 3 (32% conversion) and diminished to baseline levels by day 7. On day 3, CAT synthesis was 30-fold greater in ear samples of irradiated animals than in unirradiated mice. Experiments delineating: 1)the cell target of UV irradiation and 2)the effect of UV light on animals bearing intact copies of the HIV proviral DNA will be discussed.
Conclusion: UV irradiation is known to induce HIV-directed gene expression in tissue culture systems. We have shown that UV light can also increase HIV/LTR driven expression in vivo and may prove useful in activation of latent proviruses in animal models.

S.A.15

PERSISTENT DERMATOSES AND FETAL ABORTION IN HIV-1 *NEF* TRANSGENIC MICE

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Objective: To investigate the pathogenic role(s) of HIV-1 Nef using transgenic mouse models.
Methods and Results: Three transgenic founder mice bearing integrated copies of a Nef expression plasmid linked to HIV-1 LTR were characterized by (i) a high incidence of fetal abortion associated with the transmission of the *nef* transgene and (ii) the appearance in adult animals of a persistent form of dermatosis marked by alopecia, papulosquamous lesions and acanthosis.
Litters of *Nef* parents were abnormally small in number (one-half normal) due to the *in utero* death of both normal and transgenic fetuses. The number of fetal implants was normal. Fetal death occurred predominantly at 8 to 12 days into gestation, and at much later times as indicated by the high incidence of stillbirths (40% in one line). Stillbirths were essentially always transgenic. A significant proportion of surviving transgenic adults (1/3 in one line and 2/3 in another) developed, by six months of age and irregardless of sex, papulosquamous lesions typically restricted to the head and upper back. The primary histological finding was acanthosis and there was evidence of ulceration and lymphocytic infiltration in the dermis. The animal line with the severest and most penetrating form of dermatitis was analyzed for Nef protein and RNA expression. Expression at both levels was limited to the skin.
Conclusions: Nef protein expression appears to functionally compromise normal skin differentiation. The cause of fetal death is probably due to Nef expression in early embryogenesis.

S.A.16

HIV INFECTION OF HUMAN LYMPH NODES IN THE SCID-hu MOUSE

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Conditions have been established by which human fetal lymph nodes can be implanted within the heterochimeric SCID-hu mouse and infected after intravenous inoculation of HIV. The molecularly-cloned isolate JR-CSF, which has never been adapted to tissue culture conditions, was used for these studies. When inoculated intravenously into SCID-hu mice, this isolate was found to infect the engrafted lymph node, as assayed by DNA PCR, RNA PCR, in situ hybridization, immunohistochemistry, and viral isolation. Furthermore, cell-free viral RNA was detectable in the peripheral circulation of infected animals by RNA PCR. Evidence of infection was dose-dependent, time-dependent, and reproducible. Thus, inoculation of 120,000 TCID50's of JR-CSF resulted in infection of 100% of animals by 10-14 days, of which greater than 95% were also shown to be viremic (n=200). Viremia was detectable for as long as 12 weeks after infection. These conditions satisfy many of the requirements of a useful animal model for HIV infection: the animal is small, the virus used for infection is HIV, the target of infectious virus is a human lymphoid organ, and the associated procedures are both safe and easy to perform. Given these features, the SCID-hu mouse should offer novel insights to the pathogenic mechanisms of HIV in vivo.

S.B.17

CORTICOSTEROIDS (CS) IN PNEUMOCYSTIS CARINII PNEUMONIA (PCP): 12 WEEK OUTCOME OF A CONTROLLED RANDOMIZED TRIAL.

Bozzette SA[*], Sattler Fred[**], Chiu J[***], Gluckstein D[****], Kemper C[*****], McCutchan JA[*] and The California Collaborative Treatment Group. [*]UCSD, [**]USC, [***]UCI, [****]Kaiser-Sunset Hospital, [*****]Santa Clara Valley MC

Objective: To determine if early CS use prevents oxygenation failure and reduces toxicity to primary therapy in persons with AIDS and PCP.
Method: Enrollees had <36 hrs of therapy for PCP. Randomization was to prednisone (40 mg bid x 5 days, 40 mg qd x 5 days, 20 mg qd to the end of therapy) or standard therapy alone (STD Rx). Endpoints were death, ventilatory failure (VFail = mechanical ventilation or death) and oxygenation failure (OFail= PaO2/FiO2 Ratio<75 or VFail), and dose-limiting toxicity. CS were allowed after OFail occurred.
Results: Of the 333 persons enrolled, 5 were already in OFail, 77 were confirmed NEG, 26 were presumed POS, and 225 were confirmed POS. The 251 confirmed and presumed POS are presented below, but all conclusions are unchanged when considering all enrollees. Survivals are by product-limit.

	CS Group	STD Rx Group	
Number	123	128	
Mean Presenting PaO2	64 torr	65 torr	
Freedom from Oxygenation Failure @ 31 days	.86	.70	p = 0.002
Freedom from Ventilatory Failure @ 31 days	.88	.74	p = 0.005
Survival @ 31 days	.89	.77	p = 0.01
Survival @ 84 days	.84	.74	p = 0.03
Freedom from Dose-Limiting Toxicity	.58	.50	p = 0.08
Recurrence of PCP by 84 days (crude risk)	.14 (13/94)	.13 (9/67)	

Conclusion: Early adjunctive CS use in PCP reduces OFail, VFail, and death.

S.B.18

PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA.

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S.B.19

CRYPTOCOCCAL MENINGITIS.

Powderly, William; Washington University School of Medicine, St. Louis, MO, USA.

S.B.20

TOXOPLASMOSIS.

Remington, Jack S.; Stanford University, Stanford, CA, USA.

S.B.21

ENTERIC PARASITES. Soave, Rosemary; The New York Hospital/Cornell Medical Center, New York, NY, USA.

S.B.22

UNUSUAL BACTERIAL INFECTIONS. Hafner, Richard; National Institutes of Health, Bethesda, MD, USA.

TRACK B: CLINICAL SCIENCE & TRIALS

ABSTRACT SESSION: CLINICAL ASPECTS OF AIDS IN DEVELOPING COUNTRIES

S.B.25 EPIRUBICIN IS ACTIVE AGAINST AFRICAN HIV-RELATED KAPOSI'S SARCOMA

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Objective: to determine the activity of epirubicin (EPI) against HIV-related African Kaposi's Sarcoma (KS), comparing respnses to treatment using actinomycin D (ACT) with respect to survival and toxicity.
Methods: A phase 2 randomised study with a crossover design. HIV posit-ive patients with aclinical diagnosis of KS received either EPI 90 mg /M^2 or ACT 1.4 mg/M^2 together with vincristine (VCR) 1.4 mg/M^2 every 21 days if toxicity permitted, by intravenous injection. Patients crossed to the alternative treatment on disease progression.
Results: At 1st November 1989 responses were evaluated for the first 40 patients.
Twenty patients received ACT+VCR as first treatment and 6 died (median 36 days, range 13 to 95 days from diagnosis). Survivors were followed for 21 to 260 days (median 80 days) but 3 of 5 patients surviving for more than 100 days had received EPI at disease progression.
Twenty patients received EPI and 2 died, one at 20 days and the other at 73 days from diarrhoea exacerbated by treatment. Survivors were followed for 4 to 294 days (median 73 days). No-one was transferred to ACT for disease progression, but one patient was transferred on account of drug-related skin rash. By the end of 1989 80 patients had entered the trial and follow up continues.
Conclusions: Epirubicin is active against African KS, and early deaths occur less often than during treatment with ACT. Epirubicin merits extended study.

S.B.26 AFRICAN BURKITT'S LYMPHOMA AND HIV INFECTION.

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An increase in B-cell lymphomas has been noted in young homosexual men with HIV infection in the U.S.A. No systematic studies seeking this association in Africa have been carried out.
Objective: To describe an association, if any, between childhood Burkitt's lymphoma (BL) and HIV infection in Uganda.
Methods: All children with histologically confirmed diagnoses of BL admitted to the UCI between 10/18/88 and 12/31/89 were eligible. Evaluation included detailed history, physical examination, standard staging procedures, including debulking laparotomy, tissue for histology and/or fine needle aspiration for cytology. Staging was according to schema devised by Ziegler and Magrath. HIV serology was performed using ELISA (Cambridge Bioscience Recombigen).
Results: During this 15 month period, 29 children with BL presented to the UCI. Eleven patients were male and 18 female (M:F = 1:1.6), with a median age of 6 years (range 3-17). Seven patients were stage A, none stage AR, 4 stage B, 8 stage C, and 10 stage D. All patients (29/29) were HIV ELISA negative.
Conclusion: Burkitt's lymphoma, a B-cell lymphoma, is not associated with HIV infection in Ugandan children. This is in contrast to the other major HIV-associated malignancy, Kaposi's sarcoma, which is being observed with increasing frequency at the UCI in HIV-infected children. The explanation for these observations is not clear. The study of relationships between HIV and malignant disease can provide important clues to the interaction among viral infections, host immunity and neoplasms, and deserves further study.

S.B.27 SYPHILIS AMONG HIV+ AND HIV- PROSTITUTES IN KINSHASA: PREVALENCE AND SEROLOGIC RESPONSE TO TREATMENT.

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Objectives: To compare the prevalence of syphilis and serologic response to treatment among HIV+ and HIV- prostitutes in Kinshasa.
Methods: 1233 prostitutes were tested for syphilis (RPR+TPHA) and HIV. All women reactive for syphilis were treated with benzathine penicillin 2.4 million IU I.M./week for 3 weeks. Every 3 months RPR titer was repeated.
Results: Of 1233 prostitutes, 194(16%) had active syphilis, 347(28%) were TPHA+ and 434(35%) were HIV+. No difference was found between HIV+ and HIV- women with regard to: prevalence of syphilis (16% vs 15%), TPHA reactivity (31% vs 26%) and proportion of syphilis cases with RPR titer ≥16 (11% vs 15%) or with a concurrent genital ulcer (11% vs 5%). For 90 syphilis(+) women,(40 HIV+ and 50 HIV- women) who have been followed for at least one year after administration of treatment the change in RPR titer was not significantly different in HIV+ and HIV- women. RPR titer at 9-12 months after treatment compared to initial titer:

	RPR titer pos → neg	RPR titer 4-fold ↓	RPR titer no change	RPR titer 4 fold ↑
HIV+ (n=40):	25%	10%	55%	10%
HIV- (n=50):	24%	12%	52%	12%

Overall, 18 syphilis cases with an initial RPR titer ≥16 were followed. 8/13 (62%) HIV- women and 2/5 (40%) HIV+ women had a 8 fold decrease of titer 6 months, and a 16 fold decrease in titer 12 months after treatment.
Conclusion: The prevalence of syphilis and serologic response to standard therapy did not differ in HIV+ and HIV- women.

S.B.28 HTLV-I ASSOCIATED NEUROLOGICAL DISORDERS IN WEST AFRICA

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Objective : The study aimed to evaluate seroprevalence of HTLV-I and associated disorders among neurological diseases in West Africa.
Methods : Beetwen March and September 1987, 865 neurological ward in-patients were screened for HTLV-I, HIV-I and HIV-II using ELISA tests, confirmed by Western Blot. Patients came from 4 Black Africa countries : Ivory Coast (381), Senegal (216), Togo (129), and Burkina Faso (139).
Results : Positive cases were as follows : HTLV-I alone : 15 cases (1.7 %), HIV-I and/or HIV-II associated with HTLV-I : 19 cases (2.2 %), total HIV : 91 cases (11 %), composed of 50 HIV-I alone (6 %), 7 HIV-II alone (0.8 %), 15 HIV-I and/or HIV-II (18 %), and 19 HTLV-I associated cases (2.2 %).

Among the neurological disorders, 82 cases of spastic paraplegia were identified including PST/HAM. They were characterized by a markedly low prevalence of HTLV-I (13 cases, 15.85 %) than other countries and by their association 7 out of 13 times with HIV-I/II (8.5 %). Six cases of paraplegia with HTLV-I (HAP) presented similar clinical signs to those described elsewhere under the general term PST/HAM.

Prevalence of HTLV-I alone for other disorders was identical to that found in a normal population (1 - 2 %) : 153 peripheral neuropathy patients : 3 cases (2 %) ; 38 cranial nerve paralysis : 1 case (2.6 %) ; 64 meningo-encephalitis : 1 case (1.6 %) ; 129 non-tropical neuromyelopathic myelopathies : 2 cases (1.5 %), and 399 other disorders : 2 cases (0.50 %). A major etiological factor in meningo-encephalitis appears to be HIV-I/II (43.1 %)
Conclusion : Even though HTLV-I seroprevalence is raised in West Africa (approximatively 2 %), this retrovirus has a much reduced presence in neurological disorders. Its level in African spastic paraplegia is low.

S.B.29

DIARRHEAL ILLNESS AMONG PEDIATRIC AIDS PATIENTS

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Objective:To evaluate the etiological aspects and clinical evolution of the diarrheal illness(DI) among pediatric AIDS patients.
Methods:From August/88 to July/89, 38 pediatric AIDS patients (CDC criteria), were admited to Hospital Cândido Fontoura. Twenty-eight (73,7%) of these children had DI and were analised in this report. Stool samples were collected for bacterial culture, parasites and rotavirus research.
Results:Etiological agents were found in 14(50%) of these children (group B) and all the stool tests were negative among the remaining 14 patients (group A). An association of 2 etiological agents were found in 4 children.The agents were: Salmonella tiphymurium-7patients(39%); Enteropathogenic E.Coli (EPEC) - 5 patients(27,8%);Cryptosporidium sp-3 patients(16,7%);Shighella flexneri-1 patient(5,5%);Rotavirus-1 patient(5,5%) and Campylobacter sp-1 patient(5,5%). Both groups showed 85,7%(12 cases each) of food sensitivity, but it was more important in group B were 5 patients use meat base formula, 2 use hidrolised protein and 3 parenteral nutrition. The hospitalization length rate was 21,3 days in group A and 27 days in group B.
Conclusions:More than 70% of the children admitted in this period had DI supporting the high incidence of this clinical aspect in pediatric AIDS. The DI observed in group A may be due to HIV action or other non-investigated agents such as CMV, MAI and Yersinia. Group B showed prolonged hospitalization length and higher degree of food sensitivity probably due to the pathogen found added to HIV action.

S.B.30

PAEDIATRIC HIV DISEASE: A 3 YEAR PROSPECTIVE STUDY

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OBJECTIVE: A prospective study to determine and quantify the short and long term sequelae of Paediatric HIV Disease.
METHODS: Based on clinical suspicion of immunodeficiency 623 suspected in-patients and their mothers were screened for anti-HIV antibodies using ELISA (Abbott & Wellcosyme). 198 diagnosed as having HIV Disease were followed monthly, out of which 53 cases with whom we started were followed for a complete 36 months, and the remaining 145, were recruited during the study, to determine the pattern of illnesses occuring as a result of HIV Disease.
RESULTS: Of 623 suspected children, 198 (31.8%) were seropositive. Age range 2 months to 8 years (peak between 1-2 years, Male/Female ratio 1:1.1: 190(95.9%) were born to seropositive mothers. The 53 patients followed for 36 months required re-admission on average 6-8 times. The spectrum of diseases occuring in the 198 cases, at time of presentation, review or re-admission were acute gastroenteritis in 192(97.0%), failure to thrive with severe malnutrition in 172(86.8%), oropharyngeal candidiasis 81(41.0%), pneumonias in 66(33.3%), pulmonary tuberculosis in 43(21.7%); anaemia in 36(18.1%), suppurative otitis media in 32(16.1%); cancrum oris in 31(15.6%), malaria in 28(14.1%) papular skin erruption in 16(8.1%), C.N.S. diseases 9(4.5%), measles in 8(4.0%), Kaposi's Sarcoma 6(3.0%), Eighty-two out of 198 died (41.4%), 39 (19.6%) died during the first admission, and of the 53 followed for 36 months 41 are dead.
CONCLUSION: Paediatric HIV Disease carries very high morbidity and mortality, with very low survival rate; it presents with a multiplicity of severe systemic infections, acute diarrhoeal disorder, and malnutrition.

S.B.31

CUTANEOUS MANIFESTATIONS OF HIV INFECTION IN ZAIRIAN PATIENTS

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Objective: To determine the prevalence and types of cutaneous lesions (CL) in Zairian patients and their relation to HIV infection.
Methods: As part of a cross-sectional study of 200 consecutive admissions each to male and to female internal medicine wards at Mama Yemo Hospital, consenting patients were tested for HIV antibodies and examined. Those found to have CL were referred to the dermatologist for classification of lesions and possible biopsy.
Results: 47/341 (14%) patients examined had 61 CL; 14 biopsies were performed.

	HIV +(%) N=164	HIV -(%) N=159	p
Total with CL	42 (23)	5 (3)	(.0001
Herpes *	21 (11)	1 (.6)	(.0001
Cutaneous Infections**	13 (7)	2 (1)	.02
Kaposi's Sarcoma***	8 (4)	1 (.6)	(.01
Other****	13 (7)	0	n/a

*Zoster and genital lesions
mycoses, leprosy, furunculosis, impetigo, etc), * M:F=1:1.2
****Seborrheic and pellagroid dermatitis, purpura, yellow nail and Steven-Johnson syndromes,etc. Although 20% of HIV seropositive patients gave a history of a papular pruriginous eruption, only 1 patient had lesions at the time of examination. Of the 14 biopsies, 11 confirmed the clinical diagnosis of the dermatologist. Two of the biopsy-proven KS patch lesions in women were detected only by the dermatologist.
Conclusions: CL, especially herpetic and other infections are common manifestations and are significantly associated with HIV infection in this population. An experienced examiner and biopsies may be necessary to adequately diagnose certain atypical or unusual lesions.

S.B.32

PLEURAL EFFUSION AND HIV INFECTION IN KIGALI, RWANDA.

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Objective : To study the etiology of pleural effusions and their possible association with HIV infection.
Methods : From 09/14/88 to 10/16/89, each patient with pleural effusion had a medical history, physical examination, standard laboratory tests, chest X-ray, cyto-biochemical and microbiological pleural fluid analysis, needle biopsy of parietal pleura with histological and microbiological examination. Microbiological examination of sputum and HIV serology (Elisa, Western Blot) were carried out in a majority of patients.
Results : Pleural effusion was diagnosed in 127 patients(81 male/46 female ; age : 19-74; mean :34) Diagnoses and their respective association with HIV infection were the following :

Diagnosis (n=127)	n° of cases (%)	HIV n° positive/n° tested	(%)
Tuberculosis	110 (86)	82/98	(83)
Cancers	6 (5)	4/6	(66)
Parapneumonic effusions	5 (4)	4/5	(80)
Others	6 (5)	1/5	(20)
Total	127 (100)	91/114	(80)

Conclusions : At the CHK, pleural effusion is a common manifestation of tuberculosis, frequently associated with HIV infection.In areas with high prevalence for HIV and M. tuberculosis infection, pleural effusions in adults may be considered as a sign highly predictive of HIV infection.

TRACK C: EPIDEMIOLOGY & PREVENTION

ABSTRACT SESSION: ISSUES IN SEXUALLY TRANSMITTED HIV INFECTION

S.C.33

HIV PREVENTION INTERVENTIONS AMONG PROSTITUTES OF INDIA:DELHI EXPERIENCE.

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Studies in India have shown that HIV transmission is predominantly through heterosexual route in this country. Prostitutes and their clients are the highest risk groups for HIV infection in India. Upto 10% sero-positivity is known in the prostitutes in some parts of India. Present study was undertaken to assess the effects of a planned HIV prevention intervention among Delhi prostitutes.

In October 1988, 701 prostitutes were screened for HIV infection. Only one of them was found infected. They were also interviewed for awareness about HIV/AIDS and condom use. Subsequently, a planned health education compaign was initiated. Regular group discussion with the prostitutes, and distribution of posters were the important parts of the compaign. 'Madams' were counselled about HIV and later used in the compaign. A specially made short video film on HIV infection and condom use was also used. In this film, the prostitutes have also participated. A reassessment of HIV awareness, condom use and HIV serosurveillance has been done 15 months later (January 1990).

The awareness about AIDS has increased to 70% as compared to 5% previously. Fifty percent of them always use condom as compared to 20% previously. Of the remaining, 80% prostitutes use it most of the time. Only 1 additional prostitute has seroconverted during this period.

This work clearly shows that persistent and intensive counselling can reduce HIV transmission to the prostitutes of India.

S.C.34

COMMUNITY BASED AIDS PREVENTION CAMPAIGN IN A URBAN SETTING IN TANZANIA

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Objective: To alter high risk behaviour in a community where transmission of HIV by sexual contact is prevalent, recognizing that behaviour modification would have to remain consistent over years to effect change in seroprevalence rates, a campaign was started in a Tanzanian urban population that emphasized growth of community involvement and sustainibility with minimal outside support. This campaign started in April 1989 has been based on a homogeneous group approach which identifies risk behaviour and evaluates subsequent change in this behaviour.

Methods: A mass media committee of a religious community prepared an AIDS prevention seminar. This was advertized in advance by a poetry and essay competition about AIDS where prices were awarded. The committee composed and presented songs, plays and dances, a resource person gave neccessary technical information on AIDS. Techniques to involve the audience of 1100 people such as singing the response to an AIDS prevention song and splitting in small discussion groups were used. All age groups above 15 years were involved. Information was given in a symbolic language that aroused emotional responses, e.g. "Each reed (to drink beer) should be used with only one calabash, each calabash should welcome only one reed. What about putting a filter on the reed?"

Results: The community discussed AIDS and sexual behaviour in the public for the first time. Risk behaviour was identified e.g. drinking on weekends for adults, joblessness and low income for youth. A video was made for the benefit of the 40.000 school children of the area. It became nationally known when it was banned by some religious authorities, indicating that some controversy could be beneficial. Three new video films have been made and five other neighbourhoods started a similar campaign within three months. All together some 80.000 people have been involved in the campaign, 400.000 have seen the video films in public and home meetings.

Conclusion: Public meetings, traditional performances and video shows organised by the community for the community have created a self sustaining campaign. This facilitates informal peer group communication about AIDS prevention and personal behaviour change which strongly depends on group approval.

S.C.35

HIV SEROCONVERSION IN URBAN RWANDAN WOMEN BEFORE AND AFTER A PREVENTION PROGRAM

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Objective: To compare the rates of new HIV infection in HIV- urban Rwandan women before and after an educational intervention and to determine the predictors of seroconversion.

Methods: A consecutive sample of 3702 pediatric and prenatal clinic patients in Kigali, Rwanda were screened for HIV in 1986-87. In 1988, the women were retested and 997 HIV- women were randomly chosen for a prospective study of HIV infection. Subjects saw an educational video followed by a small group discussion, were offered free condoms (recommended) and/or spermicides and HIV test results were given with counseling. Women were followed every six months.

Results: 31 seroconvertors were identified among the 808 women who have completed their 12 month followup. Rates of seroconversion decreased from 4.7% per year between 1986-88 (prior to the intervention) to 3.6% per year after the intervention. A 46% decline in the prevalence of gonorrhea in the cohort also occured. Multiple logistic regression revealed the following as independent predictors of seroconversion: multiple sexual partners the year prior to enrollment (OR 3.6, $p<0.002$), age less than 27 (OR 2.5, $p<0.02$), the belief that illness cannot be prevented (OR 2.5, $p<0.03$), and self-perception of risk for HIV (OR 10.0, $p<0.005$).

Conclusion: The rate of new HIV infection and gonorrhea in a representative sample of urban child-bearing women in Rwanda decreased after a prevention program that included HIV testing, education, and free condoms/spermicides.

S.C.36

NONOXYNOL 9: ITS ADVERSE EFFECTS

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Objective: To determine the adverse effects and acceptance of condoms lubricated with Nonoxynol 9 (NO9) in view of widespread recommendations for their use.

Methods: Sex trade workers, primarily females, were solicited by AIDS Street Nurses to answer a short questionnaire in Vancouver, British Columbia, Canada. The study began in September of 1989.

Results: Preliminary results of 25 questionnaires in female sex trade workers show that 24 of 25 (96%) have knowingly used condoms lubricated with NO9. Most used them for 'lays' and 9 of 24 used them always or usually. Nine (38%) stated that condoms lubricated with NO9 had caused vaginal irritation and four stated that they didn't use them because of the irritation. Seventeen of 25 (68%) said they had used this form of condom for 'blow jobs' and of these 5 stated that they had experienced oral side effects such as numbness, soreness, burning, bad taste, and even stomach cramps and difficulty breathing.

Conclusions: Since genital inflammation and irritation is common with NO9 and may enhance HIV transmission and since the added protection afforded by spermicides, such as NO9, in combination with latex condoms has not been well established, AIDS prevention strategies should focus on latex condoms without spermicides.

S.C.37 ACCULTURATION DIFFERENCES IN HISPANIC CONDOM USE

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Objective: To identify rates of condom use and problems with use in Hispanics of different acculturation and gender groups.
Methods: 521 adult Hispanics were sampled using random digit dialing from telephone prefixes corresponding to 1980 census tracts of San Francisco with 10% or more Hispanics and interviewed in Spanish or English. The acculturation scale (5 items measuring language use) was dichotomized.
Results: The less acculturated Hispanics were less likely to currently use condoms and more embarrassed to buy them, especially the females.

	Men		Women	
Acculturation:	Low	High	Low	High
Have Condoms	52% (n=152)	61% (n=67)	17% (n=230)	44% (n=71)
Very Embarrassed to Buy	12% (n=151)	6% (n=67)	40% (n=230)	13% (n=72)
Never Used with Main Partner Last 12 Mos.	58% (n=109)	44% (n=50)	68% (n=168)	35% (n=49)
Report risky sex and never use condoms	14% (n=36)	0% (n=18)	50% (n=12)	0% (n=3)

Conclusion: Special efforts are needed to promote condom use among less acculturated Hispanics. Promotion of condoms to men may be more appropriate in this culture.

S.C.38 PSYCHOSOCIAL FACTORS AND RISK FOR HIV INFECTION AMONG SEXUALLY ACTIVE MEN: THE MULTICENTER AIDS COHORT STUDY (MACS)

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Objective: To determine whether psychosocial factors moderate risk for seroconversion for HIV in homosexual men.
Methods: 209 homosexual MACS participants seroconverted during the first 2½ years of the study. A comparison sample of 836 men were randomly selected among men who remained HIV negative. Of these 1045 men, 644 had engaged in high risk sexual activity. Four categories of risk factors, measured six months prior to when men initially tested seropositive, were examined. They included sociodemographic factors (depression, self-esteem, perceptions of social support), behavioral factors (smoking, alcohol consumption, drug use), and immune status and health history factors (absolute numbers of CD4+ cells and history of chronic physical illness).
Results: Among men who had engaged in high risk sexual behavior, those who were classified as heavy drinkers were more than twice as likely to seroconvert than moderate to nondrinkers (odds ratio=2.28; 95% C.I.=1.52,3.42). They were also less likely to use condoms during sexual activity. Smokers were also more likely than nonsmokers to seroconvert (odds ratio=1.61; 95% C.I.=1.12,2.32).
Conclusion: We may be able to improve efforts at controlling the spread of HIV infection by identifying individuals in high risk groups whose behavior or personal characteristics further heighten their likelihood of becoming infected. Risks associated with heavy drinking and smoking in the gay community should be recognized and eduation and treatment be made available.

S.C.39 THE EPIDEMIOLOGY OF RISK BEHAVIOR IN LOS ANGELES: POPULATION-BASED COMPARISON OF GAY/BISEXUAL MEN AND THE GENERAL POPULATION

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OBJECTIVE: To estimate the prevalence of high-risk behavior among population-based samples of gay/bisexual (GB) men and the general population (GP) in Los Angeles County (LAC).
METHODS: Levels of drug use and sexual behavior were surveyed among two random digit dial samples drawn in LAC among GB men (N=300) and the GP (N=1305) from 10/89-12/89. Weighted frequencies are used to estimate population prevalence.
RESULTS: Over 72% GBs had tried illicit drugs vs. 33% of GP; of those, 24% GB and 18% GP had used in the past 4 weeks. Marijuana was the drug of choice (over 90% GB+GP). Drug use patterns were comparable, with the exception of cocaine (2x) and amyl nitrites (5x) (GB>GP). Almost 4 times as many GBs used alcohol and drugs in conjunction with sex vs. GPs; 66% GB vs 90% GP relationships were monogamous, while 25% GB vs. 2% GP reported both partners had sex outside the relationship.

SEXUAL BEHAVIORS (among 68% GB and 67% GP sexually active in past 4 weeks):

	>1 sex partner	anal sex w/condom	anal sex w/o condom	oral sex w/condom	oral sex w/o condom	vag sex w/condom	vag sex w/o condom
GB	78%	15% (2-3x)	29% (2-4x)	9% (6x)	79% (3-10x)	--	--
GP	4%	3% (3x)	5% (2x)	4% (3x)	33% (4x)	27% (3-4x)	72% (5x)

CONCLUSION: Prevalence of high-risk behaviors in LAC is still relatively high among sexually active GB men and the GP. Education/prevention programs should be tailored accordingly.
(This work was supported by LA Co. Dept. of Hlth Svcs, AIDS Program Office.)

S.C.40 POPULATION-WIDE RISK BEHAVIOR REDUCTION THROUGH DIFFUSION OF INNOVATION FOLLOWING INTERVENTION WITH NATURAL OPINION LEADERS

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Objective: High-risk sexual behavior remains common among gay men who live in many small cities. This research experimentally examined if population-wide risk reduction could be produced by engaging popular social opinion leaders to serve as behavior change endorsers to their peers.
Methods: Baseline risk behavior levels were obtained by surveying all men entering all gay clubs in 3 small, isolated cities (N=430). In one city (experimental), ratings were used to identify a subset of persons most popular among gay men in their social networks. These opinion leaders attended group sessions which taught steps for implementing risk reduction, trained social skills for endorsing these steps, and contracted with participants to serve as change endorsers to friends. In control cities, standard AIDS educational materials were present in clubs. After intervention, surveys were repeated in all cities (N=448 men) to ascertain shifts in population risk characteristics.
Results: At baseline, 40% of men in each city reported unprotected anal intercourse in the preceding two months. At the postintervention point, no significant change was found in the control cities. However, significant population-wide reductions (-36% from baseline) in unprotected anal intercourse and significant increases in safer sex practices were found in the experimental city. Increased rates of condom-taking in gay clubs corroborated these changes.
Conclusions: Interventions which engage key opinion leaders can produce population-wide shifts in risk behavior and norms. In addition to gay men, this model appears very promising for other peer-sensitive populations such as adolescents and IVDU's.

TRACK C: EPIDEMIOLOGY & PREVENTION

ABSTRACT SESSION: EPIDEMIOLOGY AND PREVENTION OF HIV INFECTION IN ADOLESCENTS

S.C.41 HIV SEROPREVALENCE AMONG ADOLESCENTS AND YOUNG ADULTS IN SELECTED CLINICAL SETTINGS, UNITED STATES, 1988-90

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Objective. To determine HIV seroprevalence among adolescents and young adults attending sexually transmitted disease clinics (STDC), drug treatment centers (DTC) and women's health centers (WHC) in the United States.
Methods. CDC, in cooperation with state and local health departments, is conducting blinded surveys in STDC, DTC and WHC in 44 metropolitan areas. After blood has been tested for routine purposes, individual identifiers are removed and consecutive sera are tested for antibodies to HIV. From 1988-90, demographic data and risk exposure information have been collected on over 110,000 clients, ages 15-24.
Results. Results from 285 clinics indicate that HIV seroprevalence in 15-19 year olds ranges from 0%-4.6% (median 0.5%) in STDC and 0%-1.7% (median 0%) in WHC. HIV seroprevalence among 20-24 year olds ranges from 0%-30.4% (median 1.8%) in STDC, 0%-35.3% (median 0%) in DTC, and 0%-3.1% (median 0%) in WHC. Seroprevalence rates vary by sex in STDC, with a median male rate of 1.3% and a median female rate of 0.6%. Rates of HIV infection in STDC and WHC are highest in the Northeast and South.
Conclusion. Significant numbers of adolescents and young adults attending STDC, DTC and WHC are infected with HIV, but rates vary markedly by clinic type, sex, age group, and geographic region. Additional studies are needed to assess risk behaviors for HIV infection among adolescents and young adults. Education programs designed specifically for adolescents and preadolescents are essential for prevention of HIV/AIDS.

S.C.42 RISK BEHAVIOR FOR HIV INFECTION AMONG STREET YOUTH IN BRAZIL

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Objective: To evaluate, in a cross-sectional survey, psico-social risk factors for HIV infection among a random sample of 55 street youth in Belo Horizonte, Brazil, during 1989.
Methods: The participants, from several Belo Horizonte Institutions dealing with street youth, were interviewed (using a pre-coded standardized questionnaire) regardings psico-social risk factors known to be associated with HIV infection.
Results: Males constituted 87.3% (48/55) of the sample: their mean age was 14.9 years (range 10-20 years). Sexual activity was reported by 80%. Among those sexually active, 77.5% related heterosexual relations, whereas 10% reported homosexual activity with adults and 5% with other youth. Only 7.3% said to be condom users. Prostitution was reported by 2.4%. Drug use was reported by 84% of the sample; 29% of the users acknowledge IV drug utilization. The question dealing with drug use during sexual activity was not answered by 75% of the interviewees. Regarding HIV/AIDS, 56.3% of the sample reported having knowledge of this infection/disease, although 63.6% and 61.2% said to know how to get and how to avoid the infection, respectively. Blood transfusion was related by 8% of the participants.
Conclusion: Risk behavior for HIV infection was reported by a large proportion of the street youth sample included in this survey. These results indicate the need of establishing health education/behavior modification programs, specifically targed to this population, in order to prevent and decrease their risk for HIV infection and a possible AIDS epidemic.

S.C.43 PATTERNS OF AIDS-RELATED RISK AND PREVENTIVE BEHAVIORS AMONG TEENAGE MEN IN THE USA.

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Objectives: To assess the prevalence and patterns of AIDS-related risk and preventive behaviors in adolescent males in 1988.
Methods: The National Survey of Adolescent Males was a nationally representative probability sample of 1,880 15 to 19 year old unmarried men in the US, conducted with in-person interviews and confidential self-administered questionnaires.
Results: Since 1979, condom use at last heterosexual intercourse rose from 21 to 58% among sexually active youth. In 1988 an average sexually active youth used condoms 56% of the time over the last year. However, higher levels of sexual intercourse were associated with less condom use, so that 34% of sexual acts were protected with a condom. Reported levels of other behaviors associated with high risks of HIV transmission were uncommon: oral or anal homosexual intercourse (1.4%), sex with a prostitute (0.7%), sex with an IV drug user (0.7%), and IV drug use (0.5%). Most AIDS-related risk factors (including these four, number of heterosexual partners, frequency of sex, cocaine and alcohol use and STDs) were significantly correlated with each other, but negatively correlated with condom use.
Conclusions: Although condom use is high and other AIDS risk behaviors are uncommon, protection tends to be less common among those at highest risk of HIV transmission. This reinforces the importance of targeted prevention efforts.

S.C.44 Adolescents and condom use: the difference between contraception and S.T.D. - A.I.D.S. prevention.

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Objective: The goal of this study is to assess differences among adolescents concerning their beliefs relating to condom use, depending on whether or not the female partner is using oral contraceptives.
Methods: We asked a random sample of 1289 students (705 girls, 584 boys) to complete a questionnaire investigating perceived advantages or disadvantages, barriers, normative beliefs and intention relating to the use of condoms with a new partner. Half of the students were asked to consider a situation where the girl takes the pill and the other half where the girl doesn't.
Results: In the pill taking context, intention to use a condom is relatively neutral; without the pill, intention is significantly stronger ($p<.001$). For each construct under study, Hotelling T^2 tests showed significant differences between the two contexts. In the pill taking situation adolescents perceive a lower contraceptive value for the condom ($p<.001$) and are less worried that the condom would be perforated or break during intercourse ($p<.001$); they feel a weaker agreement from friends ($p<.001$) and from their sexual partner ($p<.001$). They also consider it more difficult to have access to condoms in different places ($p<.001$), to have them available at the time of intercourse ($p<.02$) and harder to convince their sexual partner of using them ($p<.001$). Putting on the condom also seems more awkward to them ($p<.03$).
Conclusion: Adolescents do not seam to fancy condom use in the same way depending on whether or not the girl taking the pill. Future S.T.D.-A.I.D.S. prevention programs where condom use is to be promoted among adolescents should put emphasis on the necessity to use condoms, even when the female partner is taking the pill.

S.C.45

KNOWLEDGE OF AIDS AMONG SECONDARY SCHOOL PUPILS IN BAGAMOYO AND DAR-ES-SALAAM, TANZANIA

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Objective: Secondary school pupils are a large group who may be, or are about to become sexually active, and thus at risk of HIV infection.Knowledge of AIDS is thus important in this age group.We assessed this knowledge in August,1989 among school pupils from four secondary schools.
Methods: Two schools from Dar-Es-Salaam(D), and two schools from Bagamoyo(B) were randomly selected. Classes were randomly selected within strata of year of schooling and stream, and all students in the selected classes (n=481) were interviewed about their knowledge of AIDS and other sexually transmitted diseases(STD).Associations with demographic factors and reproductive knowledge were tested by Chi-square test.
Results: Mean age of respondents was 17.5 years,61% reported to be sexually active. 98.9% had heard of AIDS. Of 447 who were able to spontaneously mention at least one STD,83.7% mentioned AIDS.450 out of 476(94.5%) reported unprompted that sexual contact was a mode of AIDS transmission.Only 4 respondents mentioned maternal-foetal transmission.Within strata of age,sex and class,pupils in D were more knowledgeable than those in B(p=0.0).There was little correlation between reproductive knowledge and AIDS knowledge.
Conclusion: Knowledge of AIDS and its sexual transmission is high among secondary school pupils with very low prevalence of reported misconceptions. The observed high level of knowledge may be due to the ongoing National AIDS education campaign.More research is required to assess whether this high level of knowledge has resulted in changes in sexual behavior among school pupils.

S.C.46

AIDS AND ADOLESCENTS: KNOWLEDGE; ATTITUDES AND BEHAVIOR IN A MEDITERRANEAN STUDENT SAMPLE

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Objective: To describe the effect of institutional education campaigns on knowledge, attitudes and behavior in a Southern Spain student sample.
Methods: A total of 1750 students completed an anonymous written questionnaire.
Results: Age ranged from 14-27 (mean=16.17); 51.4% were female. Only 30% and 60% knew there is no cure nor vaccine,respectively; only 59% knew someone can be infected but not ill and 44% knew you cannot tell whether someone is infected. Ninety-nine % knew AIDS can be transmitted by sharing needles and 77.6% knew that heterosexual intercourse could result in infection. very few knew you cannot get AIDS from giving blood(56%) or insects(31%). Regarding attitudes, 61% were worried about the possibility of getting AIDS; 60% said they would be in class with someone infected; and 66% did not agree with isolation. No one had ever used needles, and nearly 18% had had sexual intercourse, 65% of whom had used condoms during last year.
Conclusion: Although this population is aware of some of the major modes of HIV transmission, they still carry many misconceptions. Only specific messages from the educational campaigns seem to have reached this population.

S.C.47

AN EFFECTIVE PROGRAM FOR CHANGING SEXUAL RISK BEHAVIORS OF GAY MALE AND RUNAWAY ADOLESCENTS

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Objective: To evaluate the effectiveness of the Triple A Program (Adolescent AIDS Awareness) in reducing sexual risk behavior of gay and runaway youth.
Methods: Sixty-three runaways and gay male youths received 10 or more sessions of an intensive AIDS prevention program implemented at four community-based agencies in NYC. The intervention, based on a cognitive-behavioral model, focused on general and personalized AIDS knowledge, coping skills, and access to comprehensive health and other community resources. The sexual risk behaviors of youths receiving the intervention were compared at baseline, and 3- and 6-months after receiving the intervention to those of 65 youths in the control group who received a "state of the art" AIDS intervention of 1-2 sessions. The results were analyzed controlling for baseline assessments of risk behaviors.
Results: Youths receiving the intervention were significantly more likely than youths in the control group to use condoms during anal, oral, and vaginal sexual intercourse 6-months after baseline interviews ($F=4.5$, $p < .05$). Also, there was a temporary increase in abstinence at the 3-month follow-up in the intervention group that was gone at 6-months.
Conclusion: The intervention appears to be temporarily effective in increasing abstinence and effective over a six-month period in increasing condom use.

S.C.48

EVALUATION OF A HIGH SCHOOL-BASED EDUCATION AND SKILLS TRAINING INTERVENTION FOR PREVENTION OF AIDS AND STDS

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OBJECTIVE: To: (a) increase knowledge; (b) build decision-making, problem-solving and communication skills; (c) prevent or modify risk behaviors; and (d) evaluate the impact of this project. METHODS: 544 ethnically/racially diverse students (mean age=14.6 years) from four urban high schools were surveyed regarding STD/AIDS-related: knowledge, anxiety, perceptions of personal risk, perceptions of peer norms regarding risk behaviors, attitudes toward people with AIDS, peer affiliation, and social support. Measures of behavioral risk included alcohol and drug use, sexual behaviors (and their outcomes), and an overall risk profile. A modified pretest-posttest experimental design was utilized to evaluate the intervention. RESULTS: On average subjects engaged in two risk behaviors (mean=1.88); 21% engaged in sexual intercourse of which 18% reported being "forced" to have sex, 6% reported a history of STDs and pregnancy. Cross-sectional data indicate that subjects with high knowledge were more likely to perceive themselves at lower risk ($r=-.22$, $p<.001$), had lower anxiety ($r=-.26, p<.001$), and fewer negative attitudes towards people with AIDS ($r=-.44, p<.001$). In contrast, these same individuals scored higher on the risk profile ($r=.23$, $p<.001$) reflecting increased sexual activity, alcohol and drug use, pregnancy, history of STDs and lack of condom use. Students who perceived peers to be engaging in preventive health behaviors were less likely to use alcohol and drugs ($r=-.33$, $p<.001$) including crack ($r=-.16$, $p<.001$) and were less likely to engage in sexual activity ($r=-.21$, $p<.001$). Students who reported greater peer affiliation also had a higher risk profile ($r=.29$, $p<.001$). Data indicate that the intervention was effective at increasing STD/AIDS knowledge [$t(425)=13.97, p<.001$] and reducing overall level of risk [$t(429)=8.63$, $p<.001$]. Moderate changes in problem-solving and decision-making skills were also indicated. CONCLUSIONS: These results underscore the importance of understanding the role that STD/AIDS knowledge and psychosocial factors, such as peer affiliation and perceptions of peer norms play in determining adolescents' risk, as well as the importance of providing skills training when targeting this population.

TRACK D: SOCIAL SCIENCE & POLICY
SYMPOSIUM: HEALTH CARE WORKER ISSUES

S.D.49 ETHICS IN THE TRENCHES: TRANSLATING ETHICAL PRINCIPLES INTO PRACTICE IN HEALTH CARE INSTITUTIONS

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Objective: Through case studies, to present the challenges involved in translating ethical principles into practice at health care institutions.
Methods and Results: When ethical principles related to the provision of health care (e.g. protection of human subjects, informed consent, confidentiality, workplace safety) are applied to day-to-day practice, they are tempered by the reactions of providers and consumers. The following case studies illustrate this: 1) An HMO was debating participation in CDC's anonymous HIV seroprevalence study. When a local newspaper printed an article about "secret AIDS research," the ensuing public reaction necessitated public education about the balancing of individual rights with the benefits of public health research, anonymous research protocols and informed consent. 2) Staff at a hospital with policies on universal body substance precautions and patient confidentiality debated labeling appropriate charts "Blood and body substance precautions." Lengthy discussions led to guidelines which balanced patients' confidentiality rights and the staff's right to appropriate information. 3) The lag time between public announcement of clinical trial results and their publication in scientific journals puts patients, physicians, and insurers in the position of being pressured to make treatment and coverage decisions without the clinical data needed to evaluate potential benefits and harm.
Conclusion: Mission statements, codes of ethics, and operating policies and procedures are common vehicles organizations use to state their values and to set standards of acceptable behavior. Each approach has its pros and cons. In Group Health's experience, a more successful approach has been building consensus around standards of practice and behavior that incorporate both the values articulated in mission statements and codes of ethics and the specificity of individual policies and procedures.

S.D.50 WHICH PHYSICIANS WILL PROVIDE AIDS CARE?

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Objective: To assess internal medical residents' intentions to provide AIDS care following training and identify variables that explain differences in those intentions.
Methods: A survey was mailed to medicine residents at 41 U.S. training programs; 1045 were returned (response rate = 40%). Programs were selected from both high and low AIDS prevalence sites. Variables assessed included: intention to treat AIDS patients after training, attitudes toward intravenous drug-using patients and gay patients, and perceived ethical responsibility to provide AIDS care. These measures consisted of multiple Likert-scaled items. A 4x4 decision matrix assessed likelihood of withholding treatment given graded benefit to the patient with increasing risk to the physician of HIV seroconversion.
Results: Given a seroconversion risk of 1 in 100, 74% of respondents would not provide life-saving treatment. Given a risk of 1 in 100,000, 5% would still withhold life-saving treatment. Only 17% indicated a strong intent to provide AIDS care in future practice. T-tests indicated that women (vs. men $p<.002$) and primary care residents (vs. residents in conventional programs $p<.0001$) were more likely to report intending to provide care. For the respondents as a whole, regression analysis indicated that attitudes towards gay patients and intravenous drug users, and perception of professional responsibility accounted for 50% of the variance in intention to provide care in future practice.
Conclusions: Internal medicine residents vary substantially in their intent to provide AIDS care and in the likelihood that they will provide treatment under specified risk and benefit conditions. Interventions which reduce prejudicial attitudes toward HIV-infected groups and increase a sense of professional duty may increase access to care for HIV-infected people.

S.D.51 KNOWLEDGE AND ATTITUDINAL PREDICTORS OF AIDS-NEGATIVITY IN MEDICAL STUDENTS

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Objectives: To determine whether medical students have negative attitudes towards PWHIV, and psychosocial factors which predict these attitudes.
Methods: 73% (939/1284) of all medical undergraduate students (years 1-6) at a major Australian medical school responded to a survey measuring transmission and clinical knowledge of HIV, and from which via a pool of attitudinal items, scales determining Avoidance of HIV infected people and Discrimination against PWHIV could be constructed.
Results: Medical students were less comfortable treating AIDS than other diseases ($p<.001$) and even less so if the patient were gay ($p<.001$). The majority both oppose confidentiality regarding HIV serostatus and support mandatory testing in clinical contexts. From linear regression analysis, age, gender, year of course, living arrangements and social experience of homosexuality do not predict Avoidance or Discrimination; religiosity is a weak predictor of Avoidance ($p<.05$). Knowledge of clinical features of HIV was a weak negative predictor of Discrimination. Knowledge of HIV transmission was a negative predictor of Avoidance ($p<.001$) and Discrimination ($p<.05$). Perceived social stigma of homosexuality and negative perceptions of homosexuals were both strong predictors of Avoidance and Discrimination ($p<.001$).
Conclusions: Knowledge deficiencies must be remedied. Avoidance of and discrimination against PWHIV must be addressed by confronting negative attitudes towards and stigmatisation of homosexuality.

S.D.52 DIFFICULTIES IN THE NURSING CARE OF THE HIV POSITIVE PATIENTS IN INDIA.

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At thetime of admission of a HIV positive person in the hospital, several unique problems were faced. These related to the attitudes of nurses, lab workers, nursing assistants and doctors. The study aimed at analyzing the reasons for their unusual reaction. The experience was gained from the clinical management of seven patients with HIV illness requiring hospitalisation.

The lack of knowledge about transmission and misinformation in this context was the main cause of unusual reaction in the nurses and para-medical staff. However, among some doctors, there was serious resentment against caring for these patients inspite of adequate knowledge about HIV transmission.

The main reason for this was their failure to convince themselves about authenticity of the available scientific information on HIV transmission. Those who did feel convinced were however, worried about lack of institutional support and insurance in case of any mishap.

It is concluded that while medical education may help in changing the attitudes of paramedical health care workers it may not succeed in achieving the same amongst some doctors.

S.D.53

HOW TO THINK ABOUT THE EMPLOYMENT PROBLEMS OF AN HIV INFECTED HEALTH CARE WORKER IN LEGAL TERMS

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Objective: The objective of this presentation is to provide an overview of relevant legal concepts and present an approach for solving the employment problems of HIV infected health care workers.
Methods: The presenter(s) will analyze current law governing employment discrimination and discuss Doe v. FBI, a landmark lawsuit brought by a physician with HIV disease.
Results: As a result of analyzing existing legal protections and litigating in the area, the presenter(s) have developed an approach for how health care workers should react to actual or potential employment discrimination.
Conclusion: The presenter(s) have concluded that there is an appropriate, nondiscriminatory approach toward employing infected health care workers which protects the civil rights of the health care worker and does not endanger patients, co-workers or health care institutions.

S.D.54

MANAGING GRIEF AND LOSS IN THE WORKPLACE

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In this report, the authors will present a model for working with loss-saturated organizations and institutions as a result of the HIV epidemic. The goals of the intervention are to 1) minimize the negative impact of grief and loss on health care professionals and AIDS service providers, and 2) to maximize the organizations' capabilities to function effectively while coping with ongoing losses. After 10 years of the HIV epidemic, cumulative losses have saturated both the personal lives of health care providers and their work environments. Predictions indicate that HIV related deaths will continue to escalate. For the workplace, this means that health care providers and their organizations, unprepared for coping with multiple losses, are likely to suffer from complications associated with grief. Developing organizational strategies to assist organizations in coping with chronic loss is essential to ensuring both individual and organizational functioning.

Based upon interventions with AIDS service organizations, hospitals, corporations, and higher education settings, the authors will discuss a model for working with loss-saturated organizations. Case examples will be used to examine the impact of loss on the organization's functioning, and discuss work-based interventions including 1) assessment of the organiztion, 2) education about grief and loss including tools for managing its impact, 3) development of internal and external resources including support services and training, 4) provision of opportunities for employees to acknowledge the impact of loss, and 5) adoption of ongoing strategies for responding to grief and loss in the workplace. As a result of prompt intervention, staff and organizations have developed effective methods to manage ongoing HIV related grief and loss.

TRACK D: SOCIAL SCIENCE & POLICY

SYMPOSIUM: CULTURALLY SPECIFIC APPROACHES TO CARE AND PREVENTION

S.D.57 IN THE DEVELOPING WORLD, UNINFECTED CHILDREN ALSO LOSE

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Objective: To estimate, for the developing world, the impact of HIV-1 on uninfected children born into infected families.
Methods: HIV seroprevalence data from pregnant women tested in 1986-1988 are used. Assumptions include: infection occurs one year before pregnancy; vertical transmission occurs in 24-39% of pregnancies; and HIV-attributable mortality is 23% in the first 7 years after infection.
Results: The table below presents preliminary results for selected locations. Column titles are: (1) of all infants born in 1987-1989, the percentage born uninfected but with HIV-infected mothers; (2) of all infants born in 1987-1989, the percentage orphaned (loss of mother) by age 5 by HIV infection; (3) by 1992-1994, the percentage increase in orphanhood (loss of mother) by age 5 due to HIV

Location	(1)	(2)	(3)
Martinique	<1-1 %	<1 %	7-64 %
Abidjan region	1-4	<1-1	8-48
Port-au-Prince	4-7	2	68-92
Lusaka	6-10	2-3	100-124
Kampala	11-22	4-7	130-205

Conclusion: The illness and death of HIV-infected children are only part of the impact of HIV on children in the developing world. Even uninfected children in infected families are at risk because of their parents' illness and death. In the worst-hit areas, e.g. Kampala, we estimate that up to 1-in-5 children are at such risk. We also estimate that HIV may triple the number of orphans there, even though our estimates exclude fathers' deaths.

S.D.58 THE ROLE OF TRADITIONAL HEALERS IN COMBATTING AIDS IN SOUTHERN AFRICA.

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Objective: To teach Traditional Healers about AIDS and encourage collaboration in combatting AIDS in Southern Africa.
Method: A one day international indaba (meeting) was held as a forum for learning and working together. Traditional Healers from countries such as South Africa, Malawi, Zimbabwe, Swaziland, Namibia and Lesotho were invited by the SAIMR. Five hundred people attended the indeba, of whom 300 were practising Traditional Healers accompanied by their entourage.
Audio-visual lectures included: the medical facts about AIDS, cross-cultural issues in AIDS education and the role of traditional healers. This was followed by open discussion and chanting and dancing; an integral part of any indaba.
Results: The indaba helped to disseminate AIDS information and establish networks. It also highlighted the varied nature and functioning of Traditional Healers in Southern Africa. Other issues that emerged include: discension between traditional and orthodox healers, political influences, professional jealousy, widespread ignorance about AIDS and different attitudes towards their role in the disease.
Conclusion: The indaba presented a preliminary investigation. Participation in the indaba promoted insight and also highlighted the need to focus on this target group. Finally, it generated ideas about future involvement of the AIDS Centre with the healers and very importantly, helped to create an impact on healers about the relevance of their role in the context of AIDS.

S.D.59 AN ALTERNATIVE HOSPITAL-BASED VOLUNTEER SUPPORT PROGRAM FOR PERSONS DIAGNOSED WITH AIDS

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Several large hospitals in the Bronx section of New York City are serving increasing percentages of minorities diagnosed with acquired immune deficiency sydrome (AIDS). These populations have historically been unserved, underserved, and/or inappropriately served by traditional health and human service programs. With the dramatic influx of AIDS patients in our city hospitals, it became poignantly apparent that the ethnic and cultural considerations of these patients were different from the majority of AIDS patients who are Gay and bisexual men. Project BRAVO was established to coordinate volunteer/buddy support services for AIDS patients treated by four area hospitals in the Bronx. Each participating hospital developed and coordinated a hospital-based patient support program involving local communities from each hospital's catchment areas. Volunteers are recruited, trained, supervised and assigned to AIDS patients. The full scope and impact of the medical, economic, social, and political advantages has not yet been assessed formally; however, preliminary anecdotal reports from AIDS patients, families, and medical and service providers indicate that this is a viable alternative approach to meeting some of the needs of minority populations with AIDS.

S.D.60 EVALUATION OF THE EDUCATIONAL TRAINING PROGRAMME TO PROFESSIONALS THAT WORK WITH STREET KIDS IN SAO PAULO, BRAZIL.

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Aids has been a great challenge to Sao Paulo State, a 33 million inhabitants region, where development and misery live together. The streets of Sao Paulo City are full of children that start early their sexual life and the use of drugs. Aids is changing this dramatic social problem in a tragedy. Since 1988, the Department of Health, Aids State Programme, is developing an educational intervention to professionals that work with street kids in order to improve and implement Aids prevention to this important social segment. A 24 hours training course about Human Sexuality, STD's, Aids, Use of Drug, Educational Strategies using group discussions, drama, A-V material and oral information is offered to professionals that work with street kids. From August, 1988 until December, 1989, 163 professionals from the Social Promotion and Minor Departments, National Movement of Street kids and other non-governamental institutions were trained by a multiprofessional team. An evaluation of the developed programmes with street kids was done with 120 trained professionals. Although we could get the commitment of the professionals and their reporting of how the training course was important to their work with Aids Prevention with Street Kids, the development of the field work identified several difficulties. The efficacy of this strategy need to be evaluated.

S.D.61 HIV INFECTION HAVE A PLACE AT CARNIVAL SAO PAULO(SP)

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State Health Department-The Reference and Training Center on Aids

During Carnival time, people dance, sing and drink for almost 4 days.During that time,sexual anonymous activities with many partners can occur in night clubs,in the parades,on the streets, at the beaches and so on.The use of drugs of all kinds rises together with this "pleasure time" and the Carnival spirit of excitement,euphoria,total freedom creates a perfect enviroment for HIV transmission.Also at this time,Brazil use to receive a lot of tourists mainly from Europe,USA and Latin America.Worried about this scenario the Educational and Training State Department for Aids started a campaign in 1989 against Aids with the active participation of the official samba schools in the City of São Paulo. They carried through the parade a banner with original phrases on Aids prevention in front line of each samba school. Also 700.000 pamphlets were distibuted before the parade of Carnival. In 1990 a special kit was produced and sent to 572 cities of the S.P. State in order to give suggestions in Aids prevention activities during Carnival. This strategy was very well received by population, the midia and the samba schools.The Aids prevention had a place in the Carnival in 1989 and we hope that in 1990 our efforts will decrease HIV transmission during this time.

S.D.62 AN EXPLORATORY PEER EDUCATION AIDS PROGRAMME FOR THE YOUTH.

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Objective: To train peer group educators to disseminate information on HIV/AIDS to youth groups.
Method: A group of 40 black youths, with an even ratio of male to female, aged 17 to 30 years, were trained as AIDS educators. Trainees were co-opted from the Career Guidance Centre in the township of Soweto, Johannesburg. Four - 90 minute sessions using group discussions, audio-visual and printed material focused on the basic facts of AIDS, transmission, prevention and safer sex practices. Consequently, 10 subgroups of 4 youth educated at least 50 peers over a 3 month period. A committee was elected by the trainees to co-ordinate peer education.
Results: More than 500 black youths were exposed to information about HIV/AIDS. The participants gave positive feedback about the efficacy of the peer educators who were described as accessible, non-threatening and easy to identify with. Peer Educators reported improved self-understanding, relationship skills, responsibility and self-confidence, and identified the following roles for themselves: positive role models, referral agents and sources of information about community resources. Qualitative analysis indicated the success and desirability of such a peer-education programme and revealed the need for further in-depth assessment of behavioural changes.
Conclusion: The success of the program confirms the idea that the youth should be encouraged to educate their peers about AIDS, as they are often more successful than adult authority figures.

S.A.65

RECENT FINDINGS IN KAPOSI'S SARCOMA.

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S.A.66

AIDS KAPOSI'S SARCOMA-DERIVED CELLS PRODUCE AND RESPOND TO INTERLEUKIN 6

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Objective: To determine the relationship of interleukin 6 to the development of AIDS related Kaposi's sarcoma.

Methods: Cell lines derived from Kaposi's Sarcoma lesions of patients with AIDS (AIDS-KS cells) were examined for the production of IL-6 using IL-6 bioassay, immunoassay and immunoperoxidase staining. IL-6 and IL-6 receptor expression was examined by RNA slot blot hybridization. Fresh autopsy material from patients with AIDS/KS was examined for RNA production.

Results: The AIDS-KS cell lines (N521J and EKS 3) secreted large amounts of immunoreactive and biologically active IL-6. We found both IL-6 and IL-6 receptor (IL-6-R) RNA by slot blot hybridization analysis of these cells. The IL-6 receptor was functional, as ^{3}H-thymidine incorporation by N521J cells increased significantly after exposure to >10 units/ml of recombinant human IL-6 (rhIL-6). Antisense IL-6 oligonucleotides inhibit cell proliferation which was reversed by exogenous IL-6. We confirmed that AIDS-KS cells produced IL-6 in vivo by preparing RNA and tissue sections from involved (KS) and uninvolved skin from a patient with AIDS-KS. We detected immunoreactive IL-6 in the involved tumor areas and to a lesser extent in the surrounding normal epidermis. Slot blot hybridization showed a great excess of IL-6 and IL-6-R RNA in involved skin compared to uninvolved skin.

Conclusions: These results show that both IL-6 and IL-6-R are produced by AIDS-KS cells and suggest that IL-6 may be a growth factor for AIDS-KS cells in vivo.

S.A.67

CULTURE AND PROPERTIES OF KAPOSI'S SARCOMA CELLS ISOLATED FROM AIDS PATIENTS.

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Centre for Immunology, St. Vincent's Hospital, Sydney, NSW, Australia.

OBJECTIVE: To culture Kaposi sarcoma (KS) cells and determine the cell of origin as well as their growth requirements.

RESULTS: KS cells, obtained either from pleural fluid or peritoneal ascites, were isolated and maintained in continuous culture for over 5 months. KS cells exhibited a characteristic pattern of reactivity to a panel of endothelial cell (EC) markers, indicating that they were endothelial-derived (positive immunoperoxidase staining for CD13, EN-4, Pal-E monoclonal antibodies and Ulex Europaeus type 1 lectin). Furthermore, these KS cells were factor VIII positive indicating vascular endothelial origin. Provision of an extracellular matrix (fibronectin, laminin or Matrigel) was essential. Compared to normal EC, a relatively low concentration of serum sustained growth of KS cells and proliferation was shown to be independent of exogenous growth factors (endothelial cell growth factor or platelet-derived growth factor). A similar profile of ^{35}S-methionine labelled secreted proteins was observed for KS and capillary EC using SDS-PAGE and both reverse phase and gel filtration HPLC. Additionally, the pattern was distinct from that of fibroblasts. No HIV, Epstein-Barr virus (EBV), Herpes simplex virus type 1 and 2 (HSV-1, HSV-2), human papilloma virus (HPV) and cytomegalovirus (CMV) were detected in these KS cells using immunoperoxidase and polymerase chain reaction (PCR).

CONCLUSION: KS cells are derived from vascular endothelium and studies using these cultures will help clarify the immunopathogenesis of this disease.

S.A.68

CHARACTERIZATION OF HIV-1 STRAINS RECOVERED FROM THE BOWEL

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Objective: To isolate and biologically characterize HIV-1 strains recovered from bowel tissues of AIDS patients and to compare these strains to viruses from the blood.

Methods: HIV was isolated from biopsy tissues obtained from the colon and small bowel of AIDS patients with severe diarrhea. Infectivity and cytopathicity of these isolates was measured in various cell types by reverse transcriptase assay, indirect immunofluorescence, syncytium and plaque formation (MT4) assays, and measurements of cell viability. The down-regulation of surface CD4 and serum neutralization properties were also studied. In some subjects, HIV-1 strains were simultaneously isolated from peripheral blood mononuclear cells (PBMC) and characterized.

Results: HIV-1 was cultivated from bowel tissues of ten different patients, five of whom had virus recovered from their PBMC. All bowel-derived viruses grew well in human macrophages and lymphocytes, and to a limited extent, in T cell and monocyte cell lines. Paired bowel and blood isolates from the same individual were in most cases distinguishable by their biologic properties. Bowel isolates from these severe diarrhea patients are less cytopathic than their paired blood isolates; in several cases, the latter induced plaque formation in the MT4 assay while the former did not. Paired isolates can also be distinguished by their growth in various bowel cell lines and their serum neutralization properties.

Conclusion: HIV-1 can be isolated from bowel tissues of AIDS patients. Bowel virus isolates differ biologically from blood isolates. These properties of HIV from the bowel may be involved in the gastrointestinal symptoms observed in many HIV-infected individuals.

S.A.69

RESTRICTED EXPRESSION OF HIV-1 IN HUMAN NEURAL CELLS: INDUCTION OF LATENT VIRUS.

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Objectives: a) To characterize the status of HIV-1 genome and its expression in chronically/latently infected human glial cells; b) to study the mechanism of HIV-1 induction in these cells.
Methods: Presence of HIV-1 DNA was studied by Southern blot and PCR. Viral transcripts were detected by Northern blotting. HIV-1 induction was determined by measuring HIV-1 RNA, p24 protein, tat and art gene products, and production of infectious virus.
Results: 3 subclones of the chronically infected glioma cell line H-80/N1T-E were identified according to the relative expression of HIV-1 antigens by IF assay: >30% IF^+, 1-5% IF^+, and IF^- cells. The cells in each group contained equivalent amounts of integrated HIV-1 DNA, about 5 copies/cell. Expression of virus RNA and structural proteins varied from high (comparable to that in T lymphocytes) in the >30% IF^+ group to below the level of detection in the IF^- group. HIV-1 replication was increased in both IF^+ and IF^- cells by treatment with Na-butyrate, 5'Azacytidine or heat shock, but not with PMA or HHV-6, which are known to induce virus in T cells. Na-butyrate treated IF^- cells released infectious virus.
Conclusions: Human glial cells are capable of carrying latent HIV-1 infection. Cells can be induced to produce infectious HIV-1, which could contribute to the spread of HIV-1 in the brain. The mechanism of induction appears to differ from that in T cells.

S.A.70

REGULATION OF HIV-1 LTR IN HUMAN BRAIN CELLS IN THE PRESENCE OF AN ACTIVE HIV-1 TAT GENE AND POLYOMAVIRUS T PROTEINS

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OBJECTIVE: It has been suggested that the T protein of the polyomaviruses can transactivate the LTR of HIV-1 and may play a role in the encephalopathy seen in AIDS dementia. The study described here tests the interaction between the T proteins of the human polyomavirus JCV and the simian virus SV40 for their ability to transactivate the LTR of HIV-1 in glial cells derived from fetal brain.
METHODS: Primary cultures or established cell lines from human fetal brain were co-transfected with an infectious molecular clone of HIV-1, pNL4-3, and an HIV-1 CAT vector, pBenn CAT. Control cultures were co-transfected with pNL4-3 and pSV0CAT, a promoterless CAT vector. The established cell lines of astrocytes synthesized either the SV40 T protein, SVG, or the JCV T protein, POJ. Determination of CAT activity was made from counting of radiolabeled chloramphenicol following acetylation by CAT in protein extracts from transfected cultures.
RESULTS: All cells transfected with pNL4-3 produced high levels of p24 antigen. CAT activity was highest in primary cells co-transfected with pNL4-3 and pBenn CAT and 5 fold lower in the JCV T protein containing POJ cells and 10 fold lower in the SV40 T protein containing SVG cells. pBenn CAT alone was active at levels significantly above background but not as high as in co-transfection.
CONCLUSIONS: Human glial cells express HIV-1 proteins more efficiently in the absence of the human JCV or simian T proteins. Transactivation of HIV-1 in brain infections with JCV may not be a factor in AIDS encephalopathy.

S.A.71

DIRECT COMPARISON OF THE INFECTIVITY OF HIV ISOLATES IN VITRO AND IN VIVO IN THE SCID-hu MOUSE

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The SCID-hu mouse is a heterochimeric murine model in which human hematolymphoid organs are surgically implanted into the immunodeficient C.B17 scid/scid mouse. Standardized virus stocks have been prepared from well known laboratory adapted strains of HIV (HXB-2, IIIB, MN, and RF), fresh patient isolates (JR-FL, SM, and JW) and an infectious molecular clone derived from a fresh patient isolate (JR-CSF). $TCID_{50}$ data from in vitro infection of human PHA T cell blasts was used to derive equivalent doses for in vivo infection of the SCID-hu mouse. Two weeks after intravenous inoculation of virus, viremia was detectable by RNA PCR in SCID-hu mice. Such evidence for infection has been observed for all of the fresh patient isolates and the infectious molecular clone, JR-CSF. However, attempts to infect the SCID-hu with laboratory-adapted strains of HIV have failed. The appearance of virus in the peripheral blood of infected mice is dependent upon time and input dose. The SCID-hu mouse represents a model for comparison of biological differences between isolates of HIV. Comparison of in vivo infectivity with in vitro assays for infectivity will be invaluable in understanding the pathophysiologic mechanisms of HIV.

S.A.72

A PANEL OF HOMOLOGOUS INFECTIOUS MOLECULAR CLONES WITH DIVERGENT BIOLOGICAL PHENOTYPES RECOVERED FROM AN INDIVIDUAL PROGRESSING TO AIDS

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Objective: Generation of biologically divergent, genetic homologous infectious molecular clones for the molecular analysis of biological variability of naturally occurring HIV-1 variants.
Methods: Biological HIV clones were obtained by direct clonal isolation of HIV from a seropositive subject at the moment of conversion from non-syncytium-inducing (NSI) to syncytium-inducing (SI) HIV variants. Xba-DNA fragments (10-20 kB) from PBL infected with biological clones were cloned into lambda Gem11. Molecular clones were tested for infectivity by electroporation into PBL and T-cell lines. Homology between the clones was investigated by sequence analysis.
Results: 35 biological clones, of NSI or SI type were obtained. From 5 biological clones, 46 molecular clones were generated. 13/18 clones proved to be infectious upon electroporation into PBL. Two NSI and 11 clones with variable SI capacity were identified. Sequence analysis of 3 clones of a 250 bp sequence including the env V3 region showed a >98% amino acid homology.
Conclusions: Differences in biological phenotype between HIV isolates can be reproduced at the clonal level. The majority of HIV proviral DNA copies in infected PBL is replication-competent. The homology between the clones will considerably facilitate the analysis of sequences critical for variation in biological properties.

TRACK A: BASIC SCIENCE
ABSTRACT SESSION: APPROACHES TO AN HIV VACCINE

S.A.73

EVALUATING VACCINE APPROACHES USING THE SCID MOUSE MODEL. Mosier, Donald E.; Medical Biology Institute, La Jolla, California.

S.A.74

INHIBITION OF SIV INFECTION IN MACAQUES PREIMMUNIZED WITH SEVERAL SIVenv PEPTIDES PRESENTED AS β-GALACTOSIDASE FUSION PROTEINS

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Objective: HIV vaccine development
Results: On the basis of immunological studies with a set peptides chosen for hydrophilicity and conservation in HIV gp120 and gp41, corresponding SIVmac peptides were selected and produced as β-galactosidase fusion proteins. The immunogenic potential of a mixture of four of these was tested in 3 macaques, with three additional macaques immunized with β-galactosidase serving as controls. Antibodies that cross react with the corresponding synthetic SIVenv peptides and with native SIVmne gp150 and gp32 were produced in macaques immunized with SIVenv-βgal but not in control monkeys. The six macaques were challenged with ~100 TCID of the biologically cloned SIVmne strain E11s. Control macaques developed antibody titers to SIV (or HIV-2) antigens that were maintained or increasing six months post challenge and all were positive by virus culture and by PCR. The SIVenv-βgal immunized macaques showed an early rise and then a continuous decline in anti-SIV antibody titer. Two of three immunized macaques were PCR negative 24 weeks post challenge, one of which was also persistently negative by virus culture.
Conclusion: These results indicate that preimmunization with SIVenv-βgal proteins alters the course of SIV infection and inhibits virus proliferation. The immunological and structural parallelism between the selected SIV and HIV epitopes provides hope that these reagents can contribute to development of an effective synthetic HIV vaccine.

S.A.75

VAXSYN HIV-I (RGP160) VACCINE RECIPIENTS DEMONSTRATE FUNCTIONAL IMMUNE RESPONSES CLASSICALLY ASSOCIATED WITH PROTECTIVE IMMUNITY.

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Objective. Evaluation of functional immune responses and safety following immunization with VaxSyn HIV-1, recombinant HIV-1 gp160 (rgp160) vaccine, in HIV-seronegative volunteers and asymtomatic, HIV-infected patients.
Methods. Recombinant gp160 produced in a baculovirus expression system, purified to ≥95% and formulated with an alum adjuvant was administered to over 200 volunteers in dose ranging and dose scheduling studies. Healthy volunteers received either rgp160 alone or rgp160 following priming with a rgp160-vaccinia virus, HIVAC-1c. Asymtomatic HIV-infected individuals received rgp160 only. Sera obtained from the vaccinees were evaluated for neutralizing antibody, antibody-dependent cellular cytotoxicity and complement mediated antibody enhancing activities, and by Western blot and ELISA assays. Peripheral blood lymphocytes were evaluated for HIV-specific cell mediated immunity in: blastogenic, natural killer cell and cytotoxic T-cell assays.
Results. Immunization with rgp160 elicits a different pattern of responses than occurs during natural infection and antibodies were produced that recognized epitopes in gp120 and gp41 not seen in HIV-infected individuals. Neutralizing antibodies were elicited following vaccination and several boosts. In small animals and chimpanzees the neutralizing activity was group specific and a group-specific neutralizing epitope was mapped to a conserved region in gp120. Low and transient levels of complement mediated antibody dependent enhancement were detected in chimpanzees and humans but not in the absence of neutralizing antibodies. Cytotoxic T-cell responses were observed following immunization of human volunteers and T-cells which lyse HIV-infected cells have been cloned. T-cell responses were directed against epitopes conserved among divergent isolates of HIV. No significant toxicities attributable to the vaccine were observed.
Conclusions. Immunization with VaxSyn HIV-1 (rgp160) elicited functional and group-specific immune responses at doses that were safe and well tolerated in human volunteers. The potential significance of these responses to clinical efficacy and the design of future clinical trials will be discussed.

S.A.76

PROGRESS IN THE DEVELOPMENT OF A P17 BASED HIV VACCINE: IMMUNOGENICITY OF HGP-30 in HUMANS

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Objective: To evaluate in humans the potential efficacy of a HIV p17 based synthetic peptide vaccine.
Methods: Two human populations were studied: 1) HIV seronegative volunteers receiving a synthetic peptide candidate HIV vaccine (HGP-30-KLH/Alum) in phase 1 trial and; 2) HIV seropositives exposed to the virus via natural infection. B cell response to antigen was evaluated by ELISA and T-cell responses via cytotoxicity and proliferation.
Results: Lymphocytes from 43% HIV positive individuals proliferated in response to HGP-30 (a synthetic peptide representing the sequence of HIV p17 between aa 86 and 115). Lymphocytes from HIV positive individuals were also cytotoxic against autologous target cells coated with HGP-30. In the first individual from the phase 1 vaccine trial to receive the medium dose (25 μg/kg body weight) a significant T-cell proliferative response was apparent by week 10 and by week 15 cytotoxicity of PBL's towards HGP-30 coated autologous target cells was measured. Antibodies to HGP-30 were present in 4/6 of the low dose (10 μg/kg) and 3/6 of the medium dose vaccinees.
Conclusion: HGP-30 represents immunodominant T and B cell epitopes on HIV p17 in humans. Studies are in progress to define the HLA restriction which may accompany the immune response to the peptide in humans.

S.A.77 NEUTRALIZING ANTIBODIES EFFECTIVE AGAINST MULTIPLE HIV-1 ISOLATES SPECIFIC FOR CONFORMATIONAL-DEPENDENT EPITOPES IN HIV-1 gp120

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Objectives. To determine whether there are conformational-dependent epitopes in HIV-1 gp120 that are the targets of virus neutralizing antibodies and to characterize the isolate-specificity of these neutralizing antibodies.
Methods. Recombinant gp120 from a single isolate of HIV-1 (HIV-SF2) was produced as a non-glycosylated denatured antigen in yeast (env 2-3 SF2) and as a fully glycosylated native antigen in mammalian cells (gp120 SF2). Immunoglobulin (Ig) from sera from HIV-infected humans was fractionated on affinity columns of these two antigens and experimental animals were immunized with these two forms of gp120. The various human Ig fractions and animal antisera were tested for neutralization of HIV-SF2 and a series of other HIV-1 isolates.
Results. Human antibodies that recognize linear epitopes in gp120 (env 2-3 SF2 -specific), were capable of high titer neutralization of HIV-SF2, but showed very little activity against other distant HIV-1 isolates such as HIV-BRU. However, if human Ig depleted of antibodies to env 2-3 SF2 was fractionated on a second column consisting of native gp120, additional neutralizing antibodies were recovered in the bound fraction. This fraction was very effective in cross-neutralizing HIV-BRU. Immunogenicity studies in animals also point to differences in the strain specificity of neutralization antibodies to these two gp120 antigens.
Conclusions. There are neutralizing antibodies directed against conformational-dependent epitopes of gp120 effective against a broad spectrum of HIV-1 isolates.

S.A.78 PROTECTION AGAINST HIV-2 IN VACCINATED CYNOMOLGUS MONKEYS

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Objective: To study protective immunity to HIV-2 in an animal model.
Methods: 4 cynomolgus monkeys were immunized with killed HIV-2 (SBL-6669), 2 of them with 5 injections of 100 or 300 μg viral protein in Freunds incomplete adjuvans (FA) and the other 2 animals with 4 injections of 25 or 50 μg viral protein in iscoms. Challenge with 100 animal infectious doses of live HIV-2(SBL-6669) was done 2 weeks after the last booster. 4 control animals received the same dose of live virus. Virus isolations, determination of viral antigen by ELISA and of antibodies by ELISA, Western blot and radioimmunoprecipitation were done.
Results: All 4 immunized monkeys developed good antibody responses to HIV-2 envelope and core antigens. The 2 monkeys immunized with virus in FA showed no evidence of infection after challenge with live virus (no virus recovery and no viral antigen). In contrast virus was recovered repeatedly during the first month after challenge in all 4 non-immunized animals and once in the 2 animals immunized with iscoms. Viral antigen was demonstrated in blood of 3 of 4 challenged control animals.
Conclusion: The demonstration of vaccine induced protection against HIV-2 infection in monkeys provide hope for vaccination against HIV also in man.

S.A.79 A RECOMBINANT HIV-1 ENVELOPE PROTEIN VACCINE INDUCES CD4$^+$ HUMAN CYTOLYTIC T LYMPHOCYTES (CTL) ACTIVE AGAINST HIV-1-INFECTED CELLS

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Objective: To characterize CTL responses in healthy adults participating in a phase I trial of baculovirus-expressed gp160 (rgp160) of HIV-1 (VaxSyn HIV-1, MicroGeneSys, Inc.).
Methods: Peripheral blood mononuclear cells from vaccinees were stimulated in vitro with rgp160 and CTL responses were evaluated in ^{51}Cr release assays and by cloning of responding cells.
Results: Three of 8 vaccinees had readily detectable gp160-specific CTL responses. Cloning studies revealed that the CTL were CD4$^+$ and MHC class II-restricted. Some clones recognized gp160 from diverse isolates of HIV-1. Although endogenously synthesized viral proteins are generally processed in the infected cells for association with class I MHC gene products and subsequent recognition by CD8$^+$ CTL, we found using recombinant vaccinia vectors that targets cells expressing the HIV-1 env gene were readily lysed by most of the vaccine-induced CD4$^+$ gp160-specific clones. These clones also showed lytic activity against autologous CD4$^+$ T lymphoblast cultures infected with HIV-1.
Conclusions: Our results indicate that in humans HIV-1 subunit vaccines based on the envelope protein can elicit CD4$^+$ CTL capable of destroying HIV-1-infected cells.

S.A.80 VACCINATION WITH A LIVE RETROVIRUS: THE ROLE OF T-CELL SUBSETS

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Objective: To determine the role of T-cell subsets in mice vaccinated with a live, pathogenic retrovirus, whose replication was blocked pharmacologically.
Methods: BALB/c mice were inoculated with live Rauscher Murine Leukemia Virus (RLV) at time 0, and 4 h later, a three-week course of combination therapy with 3'-azido-3'-deoxythymidine (AZT, zidovudine) + recombinant human interferon-αA/D (rHuIFN-αA/D) was started. After cessation of therapy, all mice were free of viremia and disease. On day 25, the mice were re-challenged with live RLV and left untreated for an additional three weeks. Immunoblot analysis of blood or spleen samples revealed that >90% of the mice were able to resist RLV re-challenge, thus demonstrating an acquired protective immune response. Spleens from immune mice were used to isolate T cells for subsequent fractionation via negative selection followed by adoptive transfer to naive recipient mice. Throughout the course of the experiments, mice were monitored by polymerase chain reaction (PCR) for the presence of RLV sequences.
Results: Adoptive transfer of 4 x 10^7 immune T cells fully protected naive recipients from viremia and splenomegaly after RLV challenge. However, when immune T cells were fractionated into CD4$^+$ and CD8$^+$ subsets, only partial protection was found when the same number of subset T cells was given. Full protection against RLV challenge was restored when the T-cell subsets were recombined and transferred again at the same dose into naive mice. PCR analysis indicated that low levels RLV sequences were detectable in some immune donors as well as in some recipients despite a lack of viremia or signs of disease.
Conclusions: We conclude that both CD4$^+$ and CD8$^+$ immune T cells are needed for full immunity against retroviral challenge. Strong antiviral cellular immunity alone prevents viremia and disease, and maintains latency.

S.B.81 QUANTITATION OF ZIDOVUDINE (AZT) -RESISTANT HIV-1 IN THE BLOOD OF TREATED AND UNTREATED PATIENTS

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Objective: To detect, quantify, and characterize AZT-resistant HIV-1 in infected persons.
Methods: End-point-dilution cultures of 15 patients' plasma and peripheral blood mononuclear cells (PBMC) were performed in the presence of 0, 1, 5, & 25 uM of AZT.
Results: Of the 15 patients (3 asymptomatic, 5 ARC, 7 AIDS), 10 were treated with AZT and 5 were never treated. Two of the untreated patient had HIV-1 resistant to 25 uM AZT, while 3 other untreated patients had only AZT-sensitive HIV-1. All 10 treated patients had detectable levels of HIV-1 which were resistant to 1 uM AZT. Of these, 6 had highly resistant (5-25 uM) HIV-1 and 4 had moderately resistant (1 uM) virus. Of the 6 patients with rapidly progressive disease, 4 were found to harbor highly AZT-resistant HIV-1. Overall, the infectious titer of HIV-1 resistant to 5-25 uM AZT ranged from 0 to 100 tissue-culture infective dose (TCID) per ml of plasma and from 10 to 1000 TCID per 10^6 PBMC. In several patients, 100% of their total HIV-1 burden in plasma or PBMC were AZT-resistant (5-25 uM).
Conclusion: An assay to quantify AZT-resistant HIV-1 in vivo has been developed. Its application has revealed that resistant viruses can be recovered from patients never exposed to AZT. In addition, all AZT-treated patients were found to have at least some resistant HIV-1. The level of AZT-resistant HIV-1 can be high (100 TCID/ml in plasma and 1000 TCID/10^6 PBMC) and can represent up to 100% of the total infectious titer in blood. Similar analysis on additional patients, characterization of AZT-resistant viruses in vitro, and studies on the effect of dideoxyinosine on resistant virus in vivo will be presented.

S.B.82 ZIDOVUDINE SUSCEPTIBILITY AMONG ASYMPTOMATIC HIV+ PERSONS

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Objective: To evaluate zidovudine (ZDV) susceptibility in a HIV+ cohort.
Methods: We evaluated HIV isolates from 66 HIV+ persons enrolled in the clinical trial: ACTG 019 "The comparison of ZDV vs placebo in asymptomatic HIV+ persons". Clinical isolates were cultured in PHA-stimulated lymphocytes; virus was harvested from the cell-free supernatant. Drug susceptibility was determined by measuring the reverse transcriptase (RT) activity 10 days post-infection and determining the drug concentration which resulted in 50% inhibition (IC50) of RT on 2 or more assays. Decreased ZDV susceptibility was defined as viral growth inhibited (IC50) by a concentration $\geq$ 1.0uM.
Results: 25 isolates exhibited sufficient RT for the assay. Four of these 25 isolates exhibited reduced susceptibility (IC50 = 1.2 - 2.7). One isolate had an IC50 = 0.92 uM, and 20 isolates had IC50 $<$ 0.5uM. The study duration of persons with susceptible compared to less susceptible isolates was comparable (median time = 20 vs 18 months). The 4 persons with IC50 $\geq$ 1.0uM have remained p24 antigen negative during the trial. None have had anemia or neutropenia. Serial CD4 counts in 3 of 4 have remained stable (median increase over baseline = 25%). Weight, CD4%, and CD4/CD8 ratio have also remained stable or increased (median change = -1 lb, +5%, and +0.09). One individual has had a 49% decline in CD4 count (-165), CD4% (-13%) and weight loss; the decline followed an initial 10 month increase in values.
Summary: Decreased ZDV susceptibility has been detected among asymptomatic HIV+ persons prospectively followed in the clinical trial ACTG 019. Further evaluation including serial ZDV IC50 assays on viral isolates are in progress.

S.B.83 DRUG SENSITIVITY AND BIOLOGICAL PHENOTYPE OF SERIAL HIV ISOLATES FROM ZIDOVUDINE TREATED ASYMPTOMATIC INDIVIDUALS

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*Human Retrovirus Laboratory and ***Department of Internal Medicine, Academic Medical Center, Amsterdam, the Netherlands, **Central Laboratory Blood Transfusion Service, Amsterdam, the Netherlands, ****Wellcome Research Laboratories, Beckenham, UK.

Objective: To study the changes in zidovudine sensitivity and biological phenotype in serial isolates from p24 antigenaemia asymptomatic individuals.
Methods: HIV was isolated from peripheral blood lymphocytes (PBLs) from 18 men (CDC II/III) by co-cultivation with donor PBLs during 2 years of zidovudine treatment. Isolates were tested for drug sensitivity in a plaque assay, syncytium inducing (SI) capacity and cell line tropism. Mutations at reverse transcriptase residue 215, important for zidovudine resistance, were studied by polymerase chain reaction (PCR).
Results: Three subjects with SI virus at the start progressed to AIDS. Four men switched from non-SI to SI virus and 2 of these progressed to AIDS. Eleven persons had non-SI virus throughout, 10 of whom remained asymptomatic. SI viruses were tested in the plaque assay and development of partial resistance during treatment was demonstrated. PCR analysis showed that after 2 years most individuals (89%) had virus carrying the 215 mutation, the lesion appearing more slowly in persons with non-SI virus.
Conclusion: Treatment of asymptomatic, p24 antigenaemic subjects may result in the appearance of partial resistant HIV isolates.

S.B.84 CLINICAL SIGNIFICANCE OF IN-VITRO HIV RESISTANCE TO AZT IN EARLY HIV INFECTED INDIVIDUALS. Results from the Multicentre Canadian Azidothymidine Trial (MCAT).

Montaner, Julio S.G.; Ruedy, J.; Fanning, M.; Tsoukas, C.; Falutz, J.; Le, T.; Schechter, M.T.; O'Shaughnessy M.; Wainberg, M., Canada

OBJECTIVE: To describe the clinical significance of the isolation of AZT resistant variants of HIV from patients with early HIV disease.
METHODS: Viral cultures were performed every 12 weeks in a subset of 50 patients enrolled in the MCAT, a multicentre prospective dose range finding study of ZDV in HIV infected homosexual men (CDC groups IIB, III and IVC2, CD4 >270). Volunteers were treated with ZDV 600 mg/d for 18 weeks, 900 mg/d for 9 weeks and 1200 mg/d for 9 weeks followed by a washout period of 6 weeks after which they were re-started on 1200 mg/d or the highest previously tolerated dose. Clinical and laboratory evaluations were performed at 3 week intervals. Viral isolation from mononuclear cells was performed at 9, 18, 27, 36, 42, 51, 64, 72, 84, 96, 108, 120, 132 and 144 weeks. An isolate was termed AZT resistant when it could be isolated from a 10 umol ZDV containing medium. Subjects from whom AZT resistant variants were isolated were compared to the rest of the group with regards to baseline characteristics, changes in surrogate markers and clinical progression of HIV disease.
RESULTS: Drug resistant variants were isolated in 13 subjects between weeks 27 and 108. These subjects had a lower baseline percentage CD4 (26 $\pm$ 10 vs 35 $\pm$ 11, p =.017). Both groups had similar changes in P24 , CD4 count and rate of progression to AIDS during treatment. It is of interest that the two drug resistant subjects who progressed to AIDS developed drug resistance at the earliest time point (27 weeks).
CONCLUSION: To date, after 43 $\pm$ 29 weeks of follow-up, the development of in-vitro AZT resistant HIV does not appear carry a special clinical significance. The lower prior CD4 could represent a marker of increased suceptibility for the development of resistance.
Supported by a grant from National Health and Research Development Programme.

S.B.85 CHARACTERISATION OF SENSITIVE AND RESISTANT STRAINS OF HIV TO ZIDOVUDINE (AZT) IN A COHORT OF PATIENTS AT THE LONDON HOSPITAL

Broadhurst, Katrina; Levantis, P.; Ball, A., Muckenthaler, M.; Gunkel, N.; Goh, B.T.; Forster, G.E.; Colvin, B.; Dourmashkin, R..; Jackson, G.G.; and Oxford, J.S.
The London Hospital Medical College, London, England

Objectives: Establish a cohort and characterise HIV isolated from serial specimens on a clinical, biological and molecular basis.
Methods: HIV isolation from plasma and lymphocytes with and without AZT. HIV quantification by supernatant P24 and syncytia. Sensitive and resistant HIV (sHIV and rHIV) characterised by: passaging in higher concentrations of AZT; back-passaging in zero AZT; fluorescent staining; neutralising assays; electron microscopy (EM); and molecular studies.
Results: HIV isolated from 50% of lymphocyte cultures. rHIV passaged into higher concentrations of AZT and zero AZT. Fluorescent staining underway. Neutralising and antiviral assays performed. Counts and morphology examined by EM. Molecular studies described separately.
Conclusions: The cohort is established. Isolation is successful and yields resistant viruses. No correlation between isolation of rHIV from patients on or off AZT observed. No obvious biological differences between strains, other than ability to grow in the presence of AZT. Future work includes cross-resistance studies and molecular analysis.

S.B.86 ZIDOVUDINE (AZT) AND INTERFERON-ALPHA (IFN) SUSCEPTIBILITIES CORRELATE WITH TREATMENT DURATION AND RESPONSE

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Objective: To correlate the AZT and IFN susceptibility of HIV isolates with duration of therapy and response to AZT-IFN combination therapy.
Methods: HIV isolates from 6 HIV-infected patients (pts) receiving AZT, 2 receiving IFN, 13 receiving both, and 5 receiving neither were assayed for AZT or IFN susceptibility in normal donor lymphocytes, and 50% inhibitory concentrations (IC_{50}) were calculated from reverse transcriptase activity. In a subset of 9 pts receiving AZT-IFN in a clinical trial, monthly plasma p24 antigen levels (p24) were measured to monitor response.
Results: AZT resistance was greater and more frequent in HIV isolates from pts who had been receiving AZT longer ($p = 0.002$, see table). IFN IC_{50} varied from 0.8 to 415 U/ml, but did not vary with duration of IFN treatment. However, IFN susceptibility predicted better responses to AZT-IFN therapy ($p < 0.05$, see table). IFN IC_{50}s were higher in the 15 pts with AIDS (mean 136 U/ml vs. 50 U/ml, $p = 0.04$).

	AZT IC_{50} < 0.1 µM	0.1-1.0 µM	> 1.0 µM
No AZT	7 pts	0 pts	0 pts
AZT < 9 mos	6 pts	5 pts	0 pts
AZT ≥ 9 mos	1 pt	1 pt	6 pts

IFN IC_{50}	p24 reduction on AZT-IFN < 47%*	> 47%*
< 25 U/ml	0 pts	4 pts
≥ 25 U/ml	4 pts	1 pt

*47% was median p24 reduction.

Conclusions: In vitro AZT resistance increased steadily over time in pts receiving AZT. IFN resistance, perhaps due to endogenous IFN, was more common in AIDS pts. IFN susceptibility testing may predict which pts will benefit from AZT-IFN.

S.B.87 CHARACTERIZATION OF AZT-RESISTANT ISOLATES OF HIV-1: SUSCEPTIBILITY TO DEOXYTHIACYTIDINE AND OTHER NUCLEOSIDES

Wainberg, Mark A., Rooke, R., Tremblay, M., Yao, X-J., Gao, Q., Stern, M., Belleau, B., Jewish General Hospital, McGill University, and IAF Biochem, Montreal, Canada

Objective: To compare AZT-resistant HIV-1 variants from subjects on therapy for >27 weeks with parental drug-sensitive strains.
Methods: HIV-1 was isolated in the presence of 2 µM AZT, and was subsequently replicated on various T cell lines in the presence of drug.
Results: The drug-resistant isolates possessed as much reverse transcriptase (RT) activity per ng p24 as did wild-type parental particles from the same patients. However, the variant strains were both less infectious and more cytopathic for susceptible T cell lines. Greater incorporation rates of radiolabeled nucleosides (dTTP and dGTP) into DNA were observed for the RT's of the AZT-resistant viruses. However, no differences between the RT's were noted in terms of affinity for dTTP substrate and amount of enzymatic activity per ng viral p51/66. In addition, the RT's of both the AZT-resistant and parental viruses displayed similar sensitivity to inhibition by ddTTP and N_3dTTP (i.e. AZT-triphosphate). Finally, the drug-resistant variants retained sensitivity to inhibition by each of four other nucleosides, including DDI, DDC, and a novel compound, deoxythiacytidine (DTC) (BCH-189, IAF Biochem, Montreal, Canada), in which the 3' carbon of the pentose was replaced by a S atom. Certain of the AZT-resistant isolates showed extensive cross-resistance to 2',3',didehydro, dideoxythymidine (D4T). Further analysis revealed that DTC possessed an effective half-life three times that of AZT with regard to inhibition of replication of AZT-sensitive isolates.

S.B.88 PRIMARY HIV-1 ISOLATES ARE RELATIVELY RESISTANT TO NEUTRALIZATION BY RECOMBINANT SOLUBLE CD4 (sCD4)

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Objective: To determine the sensitivity of primary HIV-1 isolates to sCD4 and why patients receiving sCD4 had no consistent decrease in HIV-1 titers.
Methods: End-point-dilution cultures were used to quantify HIV-1 in plasma and peripheral blood mononuclear cells (PBMC) of patients receiving sCD4, and in untreated patient plasma inoculated with sCD4. Neutralization by sCD4 was performed on HTLV-IIIB, HTLV-IIIRF, LAV-2_{ROD}, and primary HIV-1 (P1) isolates from 10 patients with various stages of disease.
Results: No consistent decrease in HIV-1 titers in plasma or PBMC was observed in patients on sCD4 (30 mg/d). Ex vivo experiments showed that up to 1 mg/ml of sCD4 had a minimal effect on plasma HIV-1 titer. In standard neutralization assays, 10 primary HIV-1 isolates were relatively refractory to several sCD4 constructs with 90% inhibitory doses (ID_{90}) ranging from 200-2700x that of HTLV-IIIB. These observations were made using two different monomeric sCD4 preparations and two multimeric CD4-Ig hybrid molecules (CD4-IgG; CD4-IgM). The ID_{90} of one primary virus decreased from 160 ug to 1.5 ug after being cultured in H9 cells for 1 year. Despite the refractoriness to sCD4, infection of primary HIV-1 isolates were easily neutralized by an anti-CD4 monoclonal antibody (Leu3A).
Conclusion: In contrast to laboratory strains of HIV-1, high concentrations of sCD4 are required to neutralize primary isolates. This poses a formidable problem for CD4-based therapeutics. The refractoriness to sCD4 neutralization is, we believe, due to low affinities between CD4 and gp120's of primary HIV-1 isolates.

TRACK B: CLINICAL SCIENCE & TRIALS

SYMPOSIUM: ORAL AND GASTROINTESTINAL MUCOSAL DISEASE

S.B.89

DIAGNOSTIC AND PROGNOSTIC SIGNIFICANCE OF ORAL LESIONS. Schiodt, Morten; University of Copenhagen, Copenhagen, Denmark.

S.B.90

ROLE OF EPSTEIN-BARR VIRUS IN HAIRY LEUKOPLAKIA. Greenspan, John; University of California, San Francisco, CA, USA.

S.B.91

UNUSUAL ORAL ULCERATION. Langford, Angelika; Department of Oral Surgery, Free University of Berlin, Berlin, FRG.

S.B.92

ETIOLOGY AND MANAGEMENT OF GASTROINTESTINAL ULCERATION. Kotler, Donald; St. Luke's-Roosevelt Medical Center, New York, NY, USA.

S.B.93

CHALLENGES PRESENTED BY PERIODONTAL DISEASE.
Grassi, Markus; University of Bern, Switzerland.

S.B.94

ORAL AND GASTROINTESTINAL CANDIDIASIS.
Powderly, William; Washington University School of Medicine, St. Louis, MO, USA.

TRACK C: EPIDEMIOLOGY & PREVENTION

ABSTRACT SESSION: HIV TESTING: COUNSELING AND PARTNER NOTIFICATION

S.C.97

HIV-ANTIBODY TESTING IN FRANCE.RESULTS OF A NATIONAL SURVEY

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Objective: to determine the variations of prevalence of HIV-antibody (HIV-ab) testing in France according to sociodemographical characteristics and risk behaviors.

Methods: a national sample of 2294 subjects of the 16-50 population in France was administred a special anonymous questionnaire investigating attitudes towards health, knowledge and risk behaviors related to AIDS. The response rate was 82%.

Results: Among the male adult population (N =1506) and the female adult population (N = 788), respectively 13% and 12% have received HIV-ab testing.Singles have been significantly more tested (16%) than the rest of the population (r= 5%,p<0.05).The prevalence of HIV-ab testing peaks in the 25-29 year age group in males (19%) and in the 21-24 year age group in females (21%). Regional prevalences of testing and AIDS cases are highly correlated.
There are strong relationships between the prevalence of testing and the presence of risk factors. In males, the HIV-ab prevalence reaches 22% in homosexuals, 24% in the heterosexuals reporting sexual relationship with prostitutes and 41% in those reporting IV drug use in the last 5 years.Testing is strongly correlated with the number of partners: 24% in males and 28% in females reporting more than 4 partners during the last 5 years.

Conclusion: the strong relationship found between the risky behaviors and the prevalence of HIV-ab testing suggests that the high risk group for AIDS are more likely to receive the testing.
The results also encourage the policy of non-compulsory confidential testing.

S.C.98

TRENDS IN PEDIATRIC HIV-1 SEROPOSITIVITY AND THE RISK OF BLOOD TRANSFUSIONS, KINSHASA, ZAIRE

Shaffer, Nathan*; Hedberg, K.*; Davachi, F.**; Bilenge, M.***; Breman, J.*; Masisa, O.****; et al.
*Centers for Disease Control, Atlanta, Georgia, USA; **Mama Yemo Hospital, ***Ministry of Health, **** Projet SIDA, Kinshasa, Zaire.

Objective: To investigate recent trends in pediatric HIV-1 infection and the early impact of blood transfusion (BTx) screening begun in 1987 in one hospital in Kinshasa, Zaire.
Methods: During 2 weeks of Nov. 1988, 1110 consecutive children were evaluated by history, physical and laboratory tests in the emergency ward of Kinshasa's largest hospital.
Results: The HIV-1 seroprevalence was 5.0%; neither this crude rate nor the age-standardized rate (4.4%) significantly increased from the rate of 3.8% found in a similar 1986 survey (P=0.2). Children <6 mo had a higher seropositive rate (12.6%) than children 6-11 mo (1.9%) and 1-13 yrs (4.1%). Seropositive children ≥1 yr were more likely than seronegative children to have anemia, malnutrition, and lower respiratory infection. A past BTx (site unspecified) was associated with seropositive children ≥1 yr (OR=5.4, P<0.0005); 52% of seropositive children had received a BTx. The BTx etiologic fraction in 1988 was 42%, compared with 67% in 1986. In 1988, the risk for seropositivity was higher for those receiving a BTx before 1987 than for those receiving a BTx in 1987 or 1988 (comparative OR=4.8, P=0.01).
Conclusions: The very high pediatric HIV-1 infection rate has not increased significantly in this hospital population during 2 yrs. Transfusions are a decreased but continued risk for HIV. Since screening remains limited city-wide, these findings underscore the need to expand BTx screening programs and develop new strategies to limit transfusions and prevent severe anemia.

S.C.99

AN ANALYTIC DECISION MODEL OF HIV SCREENING AND INTERVENTION, WITH AN EXAMPLE APPLICATION: ANALYSIS OF SCREENING POLICIES TO REDUCE HIV TRANSMISSION TO NEWBORNS

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Objective: Policy makers have instituted a variety of interventions aimed at curbing the HIV epidemic (i.e., compulsory premarital screening), often before careful studies of program costs and benefits have been carried out. Furthermore, many existing AIDS policy studies rely on very simple models of cause and effect. The objective of this study is to develop an analytic decision model that can be used to support policy analysis of HIV screening and intervention, and to illustrate the model with an analysis of screening policies aimed at reducing HIV transmission to newborns.
Methods: We develop a dynamic compartmental epidemic model that captures effects such as disease transmission and disease progression, behavioral changes, and effects of screening and other interventions. The model can be used to analyze the effects of a wide range of interventions, including screening programs, educational programs, contact tracing, and substance abuse treatment programs. The model is designed to overcome limitations of existing models, since it allows for evaluation of multiple, dynamic interventions; uses multi-attribute outcome measures (including direct and indirect monetary costs, number of HIV infections, number of deaths from HIV, and number of false positive and false negative screening tests); and can explicitly incorporate the effects of a wide range of behavioral changes in response to interventions. We apply the model (using data from the State of California) to analyze screening programs aimed at reducing the birthrate of HIV-infected infants.
Results: We find that screening programs aimed at women in all risk groups do not make economic sense, since the prevalence of HIV infection is too low in the overall female population to justify the screening expenditure. On the other hand, screening high risk women (women who are IVDU's and/or women with many sexual partners) is more than offset by the savings in medical care for HIV-infected infants. This is true over a wide range of assumptions about the fraction of women reached by such a screening program and the magnitude of behavioral change following a positive test.
Conclusion: A comprehensive model that captures dynamics of the HIV epidemic, as well as behavioral and other effects, provides an improved way to evaluate interventions aimed at curbing the epidemic. A screening program aimed at high risk women may be a cost-effective strategy to decrease perinatal [illegible] while one aimed at all women would not be cost-effective.

S.C.100

PREVENTION OF HIV INFECTION IN GREEK REGISTERED PROSTITUTES. A FIVE YEAR STUDY.

Roumeliotou,Anastasia;Papoutsakis,G;Kallinikos,G;Nestoridou, K;Papaevangelou,G.
AIDS Reference Centre, Athens School of Hygiene, Greece.

Objective: To control the spread of HIV infection among prostitutes in Athens we implemented an educational campaign.The results of a five year prospective study are presented.
Methods: Registered prostitutes in greater Athens area(about 350)are obliged to report every week for health inspection at a special STD clinic of the Ministry of Health and Welfare.In 1985 the Ministry of Health decided to screen all of them for anti-HIV as a prerequisite for licencing,since 3.4% of them were found seropositive.Since then,all registered prostitutes are interviewed, counselled,clinically examined and screened every three months.Educational material is distributed and adequate information and education regarding prevention of STD is delivered at personal level.Commercially available reagents are used for Elisa and W.blot anti-HIV testing.
Results: Table 1 shows changes in condom use and STD incidence.

Changes in	1985	1987	1988	1989
Use of condom	66.0	97.9	96.5	98.5
Incidence of syphilis	17.1	3.2	2.9	2.0
Incidence of gonococcal infection	14.0	0.0	1.2	1.2
Incidence of HIV infection	3.4	0.0	0.4	0.4

Conclusions: 1.The educational campaign was effective in increasing the condom use. 2.As a result the incidence of gonorrhoea,syphilis and HIV declined considerably. 3.The occurence of new infections stresses the need for strengthening the prevention campaign.

S.C.101 TO BE OR NOT TO BE TESTED?: RACIAL, ETHNIC AND SEXUAL ORIENTATION DIFFERENCES IN OBTAINING HIV ANTIBODY TESTING AND RECEIVING TEST RESULTS

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Objective: To examine racial, ethnic and sexual orientation differences between those who have and have not obtained the HIV antibody test and who have received their test results among single adults in San Francisco.
Methods: The AMEN (AIDS in Multi-Ethnic Neighborhoods) study is a random household probability sample of 1,781 white (41%), black (26%), Hispanic (25%) and other (8%) male and female single adults between 20 and 44 years of age who resided in selected "high risk" census tracts in San Francisco. The sexual orientation of the sample was 83% heterosexual, 13% homosexual, and 4% bisexual. Respondents were asked about their social background and whether they had been tested and had received their test results prior to participation in the study.
Results: Of the total sample, 28% (N=501) reported that they had been tested and of those tested 79% (N=394) had received their results. More gay (59%) and bisexual men (50%) had been tested than heterosexual men (26%) ($p < .001$). Among those tested, more gay (91%) and bisexual (92%) than heterosexual (75%) men ($p < .001$) had received their results. Gay young men (< 30 years of age) were less likely to have been tested than older (> 30 years of age) gay men (35% and 54% respectively, $p < .02$). Among heterosexuals, fewer Blacks (19%) had been tested than whites (26%), Hispanics (29%), and other racial/ ethnic groups (24%) ($p < .05$). Among IV drug users, more gays and bisexuals (57%) than heterosexuals (38%) had been tested ($p < .02$).
Conclusion: The majority of individuals in very high risk groups, such as gay and bisexual men, do not know their HIV status. Other individuals at high risk of HIV infection, such as heterosexual IV drug users and young gay men, are even less aware of their HIV status.

S.C.102 DISCLOSURE OF HIV-ANTIBODY TEST RESULTS, REACTIONS, AND REASONS FOR NON-DISCLOSURE.

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University of California, San Francisco, San Francisco, California, USA.

Objective: To examine: [1] The disclosure of test results to other persons; [2] reactions to that disclosure; and [3] reasons for reluctance to disclose test results.
Methods: 93 subjects from the San Francisco General Hospital Cohort who chose to be notified of their HIV-antibody test results were followed for one year afterwards, using questionnaires developed by Mandel.
Results: Subjects were 50-100% more likely to disclose test results than they had anticipated prior to notification, seronegatives more than seropositives: 85% of friends, 75% of sexual partners, 70% of physicians, 40% of dentists, and 35% of family members had been told at one year post-notification. Least favorable reactions to seropositivity were from male family members, landlords, and sexual partners. Seronegative subjects experienced unfavorable reactions only from family members and some steady sexual partners. Reluctance to disclose test results to others was related to potential practical repercussions such as loss of health insurance and income, and least related to fears of disrupting interpersonal relationships. Fear of social stigmatization dropped sharply over the year, while concern for family reactions rose.
Conclusion: Disclosure of test results was extensive and well-received within the social circles of this group, but subjects were wary of telling family members and of financial consequences.

S.C.103 PATIENT REFERRAL OR PROVIDER REFERRAL PARTNER NOTIFICATION: WHICH DO PATIENTS PREFER?

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Vancouver, B.C., Canada

Objective: To determine the attitudes toward partner notification strategies and the percentage of partners that are notifiable for persons undergoing HIV pre-test counselling.
Methods: All persons attending a well-established HIV testing and counselling clinic in Vancouver answered a short questionnaire on at-risk partners and partner notification. The study began in October 1989.
Results: Preliminary results (63 interviews) showed the average number of partners potentially exposed was 7, the majority of which (67%) were known well enough to be traced. Forty-two clients (72%) preferred to notify all partners themselves (patient referral) while 4 (7%) preferred that the public health nurse perform all the notifications (provider referral). Twelve clients (21%) wished a combination of patient and provider referral. When asked their reaction if public health authorities decided that all partners should be notified by health department staff, 50 clients (83%) said they would cooperate, 3 (5%) said they would only reveal some partners, 6 (10%) said they would not reveal any partners, and 1 (2%) said they would not come for testing in the first place.
Conclusions: Most persons requesting HIV testing at this site prefer patient referral and most partners are traceable. Since successful partner notification requires the cooperation of patients, this clinic will continue to emphasize patient referral with provider assistance on request. Persons testing positive will be counselled in the best methods of notifying their own partners.

S.C.104 THE IMPACT OF PARTNER NOTIFICATION ON SEXUAL BEHAVIOR AMONG A HETEROSEXUAL POPULATION

Guadalupe Ramírez, C. Avila, E. Herrera, M. Hernández, and J. Sepúlveda. Directorate of Epidemiology, Secretariat of Health, Mexico.

Objective: To examine the association of HIV risk-perception of infection and safe sex practices in females who received prior notification of male partner HIV infection.
Methods: As part of a longitudinal study of HIV transmission in a primarily heterosexual population, we analyzed the impact of HIV infection notification of male partners in a cross-sectional design. We compared the group of women who knew their partner serostatus with those who did not know their status. None of the female partners knew their HIV serostatus ELISA and WB test were performed.
Results: A total of 56 female sexual partners were included. Twenty-one (37.5%) were under 30 years old, 38 (67.8%) had completed elementary school, 39 (69.6%) were housewives, 45 (80.3%) reported a stable relationship, and 26 (46.6%) were married.

	FEMALE KNOWLEDGE OF PARTNER HIV SEROSTATUS			
	YES % n= (41)	NO % (n=15)	OR	p value
Modified sexual behaviour	88.8	27.2	21.3	<0.001
Believes condom should be used	81.8	27.2	12.0	<0.001
Female HIV positive	53.3	78.9	0.3	0.06
Avoid intercourse	86.9	50.0	6.6	0.08
Condom use	30.5	38.7	0.7	0.7

Conclusion: Female knowledge of sexual partner HIV infection was significantly associated with increased perception of the risk of infection, and low risk sexual practices. These findings support the importance of the partner notification and its potential effect on sexual behavior.

TRACK C: EPIDEMIOLOGY & PREVENTION

PANEL DISCUSSION: SEXUAL TRANSMISSION OF HIV INFECTION

S.C.105

THE ASSOCIATION BETWEEN STD'S AND HIV: MARKER OR CO-FACTOR. Laga, Marie; CDC, Atlanta, GA, USA.

S.C.106

HIV INFECTION AS AN STD: SCIENTIFIC AND POLICY IMPLICATIONS. Holmes, King K.; World Health Organization, Geneva Switzerland.

S.C.107

EPIDEMIOLOGY OF HIV IN TYPE I AND TYPE II COUNTRIES. Nzila, Nzilambi; Projet SIDA, Kinshasa, Zaire.

S.C.108

TRANSMISSION DYNAMICS OF HIV. Stanley, Ann; Los Alamos National Laboratory, Los Alamos, NM, USA.

S.C.109

CURRENT TRENDS IN THE EPIDEMIOLOGY OF HIV AMONG HOMOSEXUAL MEN. **Winkelstein, Warren; University of California, Berkeley, CA, USA.**

S.C.110

THE BRITISH SURVEY OF SEXUAL ATTITUDES AND LIFESTYLES - METHODOLOGY AND PROGRESS IN A STUDY OF 20,000 ADULTS

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Objective: To develop a valid methodology for a survey of sexual lifestyles in a random sample of 20,000 adults in Britain.
Methods: Pilot work on question structure, response and validity was tested in a feasibility study of 977 men and women aged 16-59 randomly selected from a stratified multistage random sample of addresses. Questions included family formation, sex education, age at first intercourse, numbers of sexual partners in different time periods, contraception, homosexual experience, sexual practices, drug use, prostitute contact and attitudes to sexual behaviour. Sensitive questions were self-completed.
Results: The sample was demographically representative of the British population. Non-response to sensitive questions was low and information on types and frequency of sexual practice was consistent for men and women. The numbers of sexual partners were significantly related to age, sex, social class and marital status. There was a significant inverse relationship between age cohort and age at first intercourse. Higher levels of homosexual experience were reported than in our previous studies and the relationships between knowledge, attitudes and behaviour have been explored. Further validity checks have been made by comparison with external data sets.
Conclusion: The methodology is now being used for the main study which will provide a national dataset for prevention strategies, mathematical modelling, and the epidemiology of HIV and STDs.

Q62

TRACK D: SOCIAL SCIENCE & POLICY

PANEL DISCUSSION: PARALLEL TRACK

S.D.113

HISTORY AND OBJECTIVES OF THE PARALLEL TRACK.
Allen, James R.; U.S. Department of Health and Human Services, Washington, DC, USA.

S.D.114

REGULATORY ISSUES. Cooper, Ellen; US Food and Drug Administration, Rockville, MD, USA.

S.D.115

INDUSTRY CONCERNS AND INITIAL EXPERIENCES.
Birnbaum, Gerald; Bristol-Myers Squibb, Wallingford, CT, USA.

S.D.116

ETHICAL ISSUES. Novick, Alvin; Department of Biology, Yale University, New Haven CT, USA.

S.D.117

ISSUES OF ACCESS AND AVAILABILITY FOR WOMEN AND PEOPLE OF COLOR. St. Cyr-Delphe, Marie; Executive Director, Women and AIDS Resource Network, Brooklyn, NY, USA.

S.D.118

PERSONAL PERSPECTIVE OF A PERSON WITH AIDS. Lipner, Jay; New York, NY, USA.

TRACK D: SOCIAL SCIENCE & POLICY

ABSTRACT SESSION: DRUG USE — PUBLIC POLICY ISSUES

S.D.121

RACIAL AND GEOGRAPHIC DIFFERENCES IN RISK BEHAVIORS OF INTRAVENOUS DRUG USERS

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Objectives. To examine differences in HIV risk behaviors among Black, Latino and White intravenous drug users (IVDUs) within specific geographic regions of the U.S.
Methods. Data about needle use and sexual practices from interviews with 7,835 out-of-treatment IVDUs in 15 U.S. cities were analyzed by analysis of variance with $p<.05$ criterion for significance.
Results. Prior studies find higher HIV seroprevalence among minorities; in some studies but not all, racial differences are attributable to greater frequency of drug injections and greater use of shooting galleries. Such racial differences in behaviors were observed in our data, except no racial differences were found for the number of injections among IVDUs in the Southwest, and Chicanos in the West were no more likely to use shooting galleries than were Whites. Northeast Whites were more likely to borrow used "works" than either Blacks or Puerto Ricans and, in the Southwest, both Whites and Chicanos reported a greater frequency of borrowing used works than did Blacks.

In terms of risk reduction, Blacks in the Northeast and West evidenced a greater degree of new needle use than did the other two groups. In the Southwest, both Blacks and Chicanos were more likely to use new needles than Whites. Northeast Blacks were most likely to use bleach or alcohol to clean their needles, while Blacks and Whites were more likely than Chicanos in both the Southwest and West to use one of these cleaning regimens.

Black IVDU males in the Northeast and West are most likely to have female non-IVDU sexual partners. Conversely, among females, a greater proportion of Puerto Rican and White IVDUs in the Northeast, and White IVDUs in the Southwest, have male non-IVDU sexual partners. These IVDU—non-IVDU relationships may affect potential transmission beyond the IVDU community.
Conclusions. The greater use of shooting galleries by Blacks and Latinos, coupled with a generally lower absolute number of injections for Whites, may have reduced HIV transfer across friendship groups and thus slowed HIV spread among Whites. In terms of future infections rates, 1) Blacks have engaged in risk reduction behaviors to a greater degree than Latinos or Whites, and; 2) Whites and Chicanos engage in considerable high risk behavior which puts them at risk of infection.

S.D.122

LITTLE CHANGE IN SEXUAL BEHAVIOR IN DRUG USERS IN AMSTERDAM.

Van den Hoek, Anneke, van Haastrecht HJA, Coutinho RA.
Municipal Health Service, Amsterdam, the Netherlands.

Objective: To study changes in sexual behavior in injecting drug users (IDU) over time (1988-1990) to evaluate preventive efforts.
Methods: Data on sexual behavior in the preceding 4-6 months and on HIV serostatus were recorded in a cohort of IDU at 2 occasions, approx. 1 year apart. The first measurement (M1) was between September 1988 and March 1989 (N=243), the second (M2) between Nov. 1989 and March 1990 (N=126 by Jan.).
Results: Preliminary analyses show the proportions of HIV-infected participants at the 2 measurements to be comparable: 39% at M1 and 38% at M2. All HIV-positives (HIV+) were asymptomatic. Sex with a steady partner was reported by 29% of male IDU (nearly all heterosexual), with no difference between HIV+ and HIV-negatives (HIV-) and by 61% of female HIV+ IDU and 48% of female HIV- IDU. Heterosexual contact with the steady partner mainly consisted of vaginal contact (95% (almost) always) and both active (35%) and passive (21%) orogenital contact. Anal sex was rare. No change is apparent between M1 and M2 in steady partner contacts. Any condom use with the steady partner was reported by 39% of men and 32% of women at M1 and 38% of men and 25% of women at M2. Casual heterosexual partners were reported by 33% and 19% at M1 and 27% and 26% at M2 for males and females resp. Sexual practices with casual partners are similar to those with steady partners. Prostitution at M1 and M2 resp. was reported by 4% and 0% of HIV+ males, 7% and 5% of HIV- males, 54% and 42% of HIV+ females and 55% and 54% of HIV- females. Not sexually active at all at M1 and M2 resp. were 39% and 46% of males and 12% and 14% of females, HIV+ IDU being slightly less often sexually active than HIV- IDU.
Conclusion: AIDS-preventive measures among IDU seem to have had a very limited influence on the sexual behavior of IDU in the past year.

S.D.123

Drug Use and Sexual Behaviors in a Probability Sample of Single Adults Living in "High Risk" Neighborhoods of San Francisco, CA: The AMEN Study

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UCSF, Center for AIDS Prevention Studies (CAPS) and/or Multicultural Inquiry and Research on AIDS, Bayview Hunter's Point Foundation, San Francisco, CA

Objective: To assess the association between drug use and sexual activity among respondents in a probability sample of single adults in San Francisco, California.
Method: The Amen Study is a population-based survey of 1781 single adults in three "high risk" San Francisco neighborhoods. Respondents donated serum and were questioned about both drug use and the use of drugs during sexual intercourse in the previous 12 months.
Results: 408 respondents (23% of the sample) indicated that they had used drugs with at least one partner during sexual intercourse in the previous 12 months. Chi-square analysis revealed that this behavior was more prevalent among men (24%) than among women (17%, $p<<0.0001$); among whites (32%) than non-whites (17 %, $p<<0.0001$); and among those with a positive HIV antibody test (49%) than those with a negative test (24%, $p<<0.0001$). Frequency with which drugs were used during sexual intercourse was positively correlated with the number of female sexual partners reported by men in the previous 12 months ($r=.24$, $p<.01$), with the number of male sexual partners reported by men in the previous 12 months ($r=.45, p<.001$), and with the number of male sexual partners reported by women in the previous 12 months ($r=.23$, $p<.01$)
Conclusions: "Chemical foreplay" -- the use of drugs with sexual activity -- in this sample was strongly associated with infection with HIV and with the number of sexual partners reported by those engaged in same sex and heterosexual sexual behavior. Results suggest that the drug-sex connection must be more decisively addressed in future HIV/AIDS prevention campaigns in San Francisco.

S.D.124

THE RELATIONSHIP BETWEEN CRACK COCAINE USE AND OTHER RISK FACTORS AMONG WOMEN IN A NATIONAL AIDS PREVENTION PROGRAM–U.S., PUERTO RICO, AND MEXICO

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Objective: To describe and compare the relationship between crack use and other HIV risk behaviors among both injection drug using (IDUs) and non-injection drug using (non-IDUs) women prior to their participation in ongoing AIDS demonstration research programs funded by the National Institute on Drug Abuse (NIDA).
Methods: All women were interviewed prior to intervention. Detailed information was gathered on drug use, needle practices, and sexual practices that place individuals at risk for HIV/AIDS; data were gathered also on demographic characteristics, health, AIDS knowledge, and social/family variables.
Results: Baseline data were gathered on 2626 IDU and 1414 non-IDU women from 42 sites. Among the IDUs, 1112 used crack cocaine at least once weekly; this was also true for 604 of the non-injectors. Twenty-nine percent of the crack using IDUs and 46% of the non-IDUs had 2 or more IDU sex partners. Substantial percentages of these women were involved in the trade of sex for money (45% of IDUs and 57% of non-IDUs). Most of these women were also found to engage in activities placing them at either intermediate or high risk for sexual transmission of HIV.
Conclusions: Crack use appears to be related to increased sexual risk behaviors among a group of women already at high risk for HIV. Crack-using women need to be targeted for the types of AIDS street outreach and prevention interventions offered by NIDA's national programs.

S.D.125

METHADONE MAINTENANCE PROGRAMMES AND AIDS IN NORTH-ITALY.

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Epidemiology Unit, Aviano Cancer Centre, Aviano, (PN), Italy.

Objective: To evaluate the impact of methadone maintenance programmes on AIDS incidence in intravenous drug users (IVDUs).
Methods: For each of the 8 Northern Italian regions, the cumulative incidence of AIDS, up to September 1989, was computed dividing the number of AIDS cases among IVDUs by the population aged 15-44 years. The estimated number of Italian IVDUs and, among them, the percentage of those attending methadone clinics were derived, for the period 1981-83, from data of the Italian Ministry of Home Affairs. The statistical association was measured by the correlation coefficient (r).
Results: The proportion of IVDUs attending methadone programmes was inversely related with the cumulative incidence of AIDS (r=-0.623). The highest AIDS incidence rates were seen in the regions with the lowest proportions of IVDUs attending methadone programmes. Thus, nearly 40% of the variability of AIDS incidence seemed to be explainable by attendance to methadone programmes.
Conclusion: Although no cause-effect relationship can be inferred, the present study confirms previous research showing a benefic impact of methadone programmes on the control of AIDS in IVDUs, in particular by reducing needle sharing. Since the illicit use of intravenous drugs is responsible of nearly 80% of AIDS cases in Italy, this finding could have an immediate application for decreasing AIDS spread in Italy and in other countries with a significant number of IVDUs with AIDS.

S.D.126

CORRELATES OF HIV RISK REDUCTION AMONG IVDUS

Calsyn, Donald A., Saxon, A. & Freeman Jr., G. VA Medical Center and Department of Psychiatry and Behavioral Sciences, University of Washington, Seattle, WA. USA

Objective: Identify characteristics of heterosexual intravenous drug users (IVDUs) reducing their involvement in high risk HIV transmission behaviors, and assess the impact of a 90 minute group AIDS prevention educational program.
Methods: After completing an interview regarding drug use and sexual practices 221 male and 81 female IVDUs were randomly assigned to 1 of 3 conditions: 1) group AIDS education, 2) education plus HIV antibody testing, 3) wait list. Repeat interview in 4 months assessed behavior change. Follow up assessments were completed for 203 (67%).
Results: During the year prior to the intervention 77% reported involvement in high risk behavior (sharing needles without effective cleaning or multiple sexual partners without using condoms) with 31% involved in both types of risky behavior. During the 4 month follow up 33% reported involvement in high risk behavior with 3% involved in both types of risky behavior. Completing follow up was not associated with risk behavior status at the initial assessment. Of those involved in high risk behaviors initially 60% reported changing to low risk behaviors during the follow up. There were no significant differences based on educational condition. Those changing to low risk behaviors did not differ on demographic variables measured. Those changing to low risk behaviors reported fewer days using heroin ($\bar{x}$=24.7±37.1 vs $\bar{x}$=6.7±18.5, t=4.0, p<.001) and cocaine ($\bar{x}$=12.3±21.2 vs $\bar{x}$=4.3 ±14.5, t=2.79, p<.01) during the follow up period, and less heroin use ($\bar{x}$=10.1±11.9 vs $\bar{x}$=3.4±7.2, t=2.43, p<.02) during the month prior to initial assessment.
Conclusion: Results suggest many IVDUs are changing their behaviors, but the efficacy of a one time education presentation could not be demonstrated. Decreased iv drug use was the only factor associated with decreased involvement in high risk transmission behaviors, suggesting drug abuse treatment will be superior to education in preventing the spread of HIV infection among IVDUs.

S.D.127

ALMOST BANNING BLEACH: AN EMPIRICAL STUDY OF AIDS POLICY DEVELOPMENT IN THE U.S.

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Objective: While many AIDS studies conclude with policy recommendations, there has been very little study of the conditions under which AIDS policies are adopted. A better understanding of policy development processes will be needed in order to increase the probabilities that AIDS policies will be consistent with scientific findings. This case study examines the political processes by which a policy that would have prohibited federal support for the distribution of bleach for disinfecting drug injection equipment was almost adopted. The policy would not only have been in conflict with current scientific findings, but would have also prohibited federal support for additional research on the topic.
Methods: Both co-authors participated in the policy development process as supporters of bleach distribution. Interviews were conducted with staff of key legislators in Congress, Administration officials, the National Academy of Sciences, and the National Commission on AIDS. Subjects interviewed included both proponents, opponents, and participants in the process who were essentially neutral on bleach distribution.
Results: Distribution of bleach as a method for disinfecting drug injection equipment, and thus reducing the spread of HIV among persons injecting illicit drugs, was developed in the U. S. through federally supported research programs. Research findings to date indicate general acceptance of bleach by drug injectors, but there is no conclusive evidence for actual reduction of HIV transmission. In 1989, an amendment was proposed in the U.S. Congress that would have effectively prohibited any further federal support for both bleach distribution and for research on the effectiveness of bleach distribution. The amendment was introduced by "liberal" Democrats and "conservative" Republicans, and initially obtained overwhelming support. The bill to which the amendment was attached was then vetoed by the President for reasons not related to AIDS. There was concentrated activity by bleach supporters during reconsideration of the bill. Statements in support of bleach were obtained from the Assistant Secretary for Health and from the National Commission on AIDS. The restrictions on bleach distribution were then removed.
Conclusions: In this case study, making AIDS policy consistent with scientific findings depended upon development of political skills by scientists participating in the policy process and avoiding "conventional morality" as the public framework for the decision. Additionally, the decentralization of power in the U.S. government appears to add a large chance factor to policy development.

S.D.128

MEDICAL CARE FOR INJECTION DRUG USE RELATED HIV.

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Objective: Injection Drug Use (IDU) creates considerable difficulties because it is characterised by crisis presentation and a high default rate. The aim of an IDU related (IDUR) HIV service is to initiate and maintain contact.
Results: IDUR HIV clinics began in October 1985, accounted for 3% of workload, with an average default rate (default/attendances) of 89%. Attendances doubled and default rate fell to 42% (p<0.001) after methadone prescribing began in June 1986 and to 28.6% (p<0.01) with a specific IDU clinic day in Nov. 1986 despite a further doubling of attendance. By Nov. 1989 the default rate was 18.5% compared to 15.6% (NS) in non HIV clinics and HIV accounted for 33% of workload. Using combined medical and drug clinics initiated contact with over 400 HIV sero-positive individuals (approximately 50% of known seropositives in Edinburgh), 80% of which are IDUR. More than 59% have attended at least 5 clinics and 36% at least 9 clinics. The median length of follow up in Dec. 1989 was 19 months with 25% patients having 32 months or more of follow up. The cumulative loss to follow up for patients attending between 1985 and 1988 was 20.0%. Presently, 140 patients receive methadone prescribed from the clinics. Two hundred and four of these HIV positive patients have had 558 admissions under our care.
Conclusions: Our management of IDUR HIV provides for oral opiate substitution therapy, medical surveillance, continuity of care for in and out patients, dental and contraceptive services, parent and children clinics, combined medical and obstetric clinics and community nursing. Analysis of clinic records confirm that it is possible to initiate and maintain contact for IDUR HIV by utilising a variety of initiatives.

TRACK B: CLINICAL SCIENCE & TRIALS

POSTER DISCUSSION: PEDIATRIC HIV INFECTION—NEURODEVELOPMENT AND LAB DIAGNOSIS

S.B.200 NEURODEVELOPMENTAL OUTCOME OF PERINATALLY ACQUIRED HIV INFECTION ON THE FIRST 15 MONTHS OF LIFE

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Objective: The goals of this research is to assess the neurodevelopmental outcome of perinatally acquired HIV infection on the developing child.
Methods: As part of a prospective follow-up study of the 1st 15 months of life, 104 infants born to either an HIV infected mother (n=51) or a seronegative control (n=51) were assessed at 3 month intervals using the Bayley Scales, by an examiner blind to the infants' serostatus. Using Chi-square to assess outcome, the following 3 groups were compared: 1) HIV infected infants (n=16), 2) HIV seroreverters (n=35) and 3)seronegative controls (n=53).
Results: There was a significant group effect (p<.001) when comparing the developmental outcome of the 3 groups with infected infants showing significantly more delays than either the seroreverters (p<.01) or the seronegative controls (p<.001). No differences were found between the seroreverters and the negative controls. Eight of the 16 infected infants had a developmental disability in contrast to a disability rate of 11% (4 of 35) in the seroreverters and 3% (5 of 53) in the seronegative controls. Six of the infected infants had severe motor delay (5 with concomitant mental retardation). Two of the infected children had a specific motor disorder with no cognitive impairment, and 8 were still functioning within normal limits.
Conclusion: The neurodevelopmental sequelae of HIV infection are severe, particularly in the motor areas of development.

S.B.201 DEVELOPMENTAL PATTERNS OF INFANTS WITH PERINATALLY ACQUIRED HIV INFECTION (PI).

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Objective: To prospectively evaluate the neurodevelopment of infants in Kinshasa, Zaire.
Methods: Three groups of infants were followed monthly from birth with neurologic exams and every 6 months with the Bayley Scales of Infant Development for 24 months. Gp1=26 infants with PI (HIV IgG at 12/18 mo. and/or clinical AIDS). Gp2=81 infants without PI of HIV+ women. Gp3=62 control infants of HIV- women. None of the infants were ill when tested.
Results: Bayley Scores,6 through 24 months(PDI=motor,MDI=mental scales)

Serial scores (PDI)	Gp1(n=25)	p*	Gp2(n=77)	Gp3(n=59)	p**
Persistently normal	11(44%)	0.000	68(88%)	57(97%)	0.000
Fell from normal to >1SD below mean	8(32%)	0.000	5(6%)	2(3%)	0.000
Persistently > 1SD below mean	6(24%)	0.006	3(4%)	0	0.000
Serial scores (MDI)					
Persistently normal	15(60%)	0.007	67(87%)	56(95%)	0.000
Fell from normal to >1SD below mean	6(24%)	NS	8(10%)	3(5%)	0.001
Persistently > 1SD below mean	4(16%)	0.03	2(3%)	0	0.006

p*value=Gp1 vs Gp2; p**value=Gp1 vs Gp3.
Conclusion: The motor development (PDI) of 56% of Gp1 was clearly impaired by 24 mos. or death (p*=0.000, p**=0.000).On the mental scales (MDI) 40% of Gp1 are functioning >1SD below the mean (p*=0.007 and p**=0.000). Three patterns of development were seen in Gp1 infants. One, where development proceeded normally (44-60%). Two, a likely HIV induced slowing in the rate of development (subacute progressive encephalopathy). Three, a likely HIV induced persistent slow development (static encephalopathy).None of the infants have lost milestones.

S.B.202 THE USE OF VIDEOTAPED BEHAVIOR SAMPLES OF PEDIATRIC AIDS PATIENTS TO EVALUATE PSYCHOSOCIAL CHANGES ASSOCIATED WITH ENCEPHALOPATHY BEFORE AND AFTER TREATMENT

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An impairment in "expressive behavior", such as "flattened affect", impoverished interpersonal skills, and regression in language and motor abilities, appears to be a common characteristic of encephalopathy in pediatric patients with symptomatic HIV infection.

A methodology has been devised to produce a permanent record for examination of behavioral patterns which maximizes the potential for objective measurement. Children with symptomatic HIV infection are videotaped at the NCI in a standard setting using a series of age-appropriate structured activities (for the age groups: 0-2 1/2 years, 2 1/2-4, 4-8, and >8), designed to elicit task-oriented behavior, social interaction, and affective responses. The behavioral variables to be assessed include: Persistence, Attention Span, Impulsivity, Compliance, Emotional Liability, Irritability, Positive Affect, Reactivity, and Language Usage which are comprehensively defined in a manual. Videotapes are systematically rated according to these variables by trained staff who are "blind" to the patient's staus. Preliminary use of the videotapes indicates that the reliability of the procedure to document the encephalopathic status of the patients and behavioral changes due to treatment is highly promising and will form the basis for this presentation.

The videotapes are an objective and sensitive procedure for documenting the behavioral impairments of HIV related encephalopathy and any changes due to treatment. Furthermore, the structured activites and scoring methodology provide a systematic framework for quantifying interpersonal and affective behavior.

S.B.203 DEVELOPMENTAL ABNORMALITIES IN UNINFECTED INFANTS BORN TO HIV INFECTED MOTHERS

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OBJECTIVE: To determine the neurologic and developmental status in uninfected infants born to HIV infected mothers.
METHODS: The neurodevelopmental status of 47 infants born to IV drug abusing women was prospectively followed using serial neurologic examinations and the Bayley Scales of Infant Development. The mental developmental index (MDI), psychomotor developmental index (PDI) and a neurologic index (NI) were recorded at 3 month intervals. For purposes of data analysis, infants were placed into groups: CONT (infants of uninfected mothers), UNINFECT (uninfected infants of infected mothers) and INFECT (HIV infected infants). Data was analyzed using a multivariate analysis of variance with repeated measures and a mixed factorial design.
RESULTS: Beginning at 6 months of age, MDI, PDI and NI scores obtained from three consecutive observations were analyzed for group differences using pairwise tests: Using the MDI, differences between the CONT/INFECT, CONT/UNINFECT and UNINFECT/INFECT groups were found at a significance level of .05. The PDI and NI found significant differences in the CONT/INFECT and UNINFECT/INFECT, but no differences were found between the CONT/UNINFECT groups.
CONCLUSION: This study indicates that uninfected infants born to infected mothers are at risk for early neurodevelopmental abnormalities which distinguish them from control and HIV infected infants. Neither the PDI nor the NI detected any difference. These findings suggest that maternal HIV infection may be detrimental to the developing fetal nervous system even in the absence of viral transmission.

S.B.204 CEREBROSPINAL FLUID INVESTIGATIONS IN HIV-1-INFECTED CHILDREN.

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§Dept. of Paediatrics, °Institute of Neurology (Clinica Neurologica II°), and *Institute of Oncology, University of Padua - School of Medicine, Padova, Italy.

Objective: Few reports to date address the identification of early markers of central nervous system (CNS) infection in children born to HIV-1-infected mothers. This study was undertaken to detect immunological markers in the cerebrospinal fluid (CSF) of such patients.
Methods: CSF from 12 HIV-1-infected children were evaluated for the following: CSF/serum albumin quotient, IgG index, IgG oligoclonal bands, free light chains (FLC) of immunoglobulins, HIV-1 antibodies, HIV-1 antigens, myelin basic protein (MBP), IL-1, IL-2, sIL-2R, TNFα, IFNγ, IL-6, and M-CSF.
Results: two children with progressive encephalopathy and three seropositive asymptomatic cases had several immune abnormalities in the CSF, consisting of: increased IgG index, presence of oligoclonal FLC, detectable IL-1, IL-6, and M-CSF; HIV-1 antigens and MBP were found in two CSF.
Discussion: our findings support the hypothesis that an immunopathological process within the CNS may be an early manifestation of acquired immunodeficiency syndrome. Cytokine detection in the CSF may represent a useful diagnostic tool to evaluate outcome in HIV-1-infected patients.

S.B.205 THE EFFECT OF 2'3' DIDEOXYINOSINE (DDI) ON THE COGNITIVE FUNCTIONING OF INFANTS AND CHILDREN WITH SYMPTOMATIC HIV INFECTION

Wolters, Pamela; Brouwers, P.; Moss, H.; El-Amin, D.; Eddy, J.; Butler, K.; Husson, R.; Pizzo, P. National Cancer Institute, Pediatric Branch, Bethesda, Maryland, USA.

Objective: To evaluate the effect of ddI on the cognitive functioning of infants and children with symptomatic HIV infection.
Methods: Forty-three pediatric patients (age range: 8 months-18 years; mean age: 6.7 yrs; IQ range: 14-129; mean IQ: 89) with symptomatic HIV infection (Class P2) are participating in a phase I-II dose escalation study of ddI. Age-appropriate neuropsychological tests are administered prior to treatment and again after 3 and 6 months of ddI assessing general intelligence, receptive and expressive vocabulary, abstract reasoning and perceptual-motor skills.
Results: Three month follow-up data from 40 patients and 6 month evaluations from 21 of these patients were available for analysis. Preliminary results showed that at 3 months follow-up 10% of the patients decreased in IQ (significant change = ± 8 IQ points), 8% increased and 82% remained the same. After 6 months of ddI, 19% dropped in IQ, 24% improved and 57% remained stable. The majority of patients who showed significant change in cognitive functioning demonstrated comparable change in their medical status. No differential effects of dose level or previous antiretroviral treatment were observed.
Conclusion: These preliminary findings indicate that the majority of infants and children with symptomatic HIV infection treated with ddI at least maintained their level of cognitive functioning. Since progressive deterioration is characteristic of the pediatric population, even stabilization of functioning, as documented with ddI, may be considered a beneficial effect. Moreover, ddI appeared to improve the compromised cognitive abilities of some patients. Whether higher doses or longer courses of ddI exert greater effect is still under study.

S.B.206 DETECTION OF IgA HIV ANTIBODIES FOR DIAGNOSIS OF HIV-INFECTED INFANTS

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OBJECTIVE: To evaluate the sensitivity and specificity of IgA and IgM tests for diagnosis of HIV infection in infants born to seropositive mothers.
METHOD: Sera were treated with recombinant protein G to remove IgG, then tested for IgM and IgA antibody by immunoblot and by IgA recombinant GP160 ELISA. Of 145 sera tested, 64 were from 39 HIV infected babies whose current CDC classification is P1 (n=6) or P2 (n=33).
RESULTS: IgA HIV antibodies were present in 35 of 41 sera from infected babies older than 6 months; the 6 IgA negative sera were from 4 babies with severe AIDS &/or hypogammaglobulinemia. IgA antibodies were detected in 5 of 10 sera from babies age 3-5 months and 2 of 13 less than 3 months of age. IgM HIV antibodies were present in only half the babies that were positive for IgA HIV antibodies. No IgM or IgA HIV antibodies were detected in 31 infants who subsequently seroreverted or in 10 infants born to seronegative mothers.
CONCLUSION: Our IgA HIV antibody test detects most infected infants by six months of age, which is a full year before the diagnosis can be made by conventional antibody tests.

S.B.207 VIROLOGICAL FOLLOW UP OF CHILDREN BORN TO HIV1 INFECTED MOTHERS : VIRUS ISOLATION, ANTIGENAEMIA AND PCR.

FLEURY Hervé J.A°, DOUARD D.°, CHAPEL A.°°, PEREL Y°, MICHEAU M.°, CONTRAIRES B.°°°
°Centre Hospitalier Régional de Bordeaux et Université de Bordeaux II, Bordeaux, France. °° Centre à l'Energie Atomique, Fontenay aux Roses, France. °°° Centre Hospitalier de la Côte Basque, Bayonne, France.

Objective : To compare the data of virus isolation, antigenaemia and Polymerase Chain Reaction (PCR) for an early diagnosis of virus infection in children born to HIV1 infected mothers.
Methods : Patients : 46 children born to HIV1 infected mothers. Virus isolation : Peripheral Blood Mononuclear Cells (PBMC) were cultured and the supernatants were regularly tested for HIV1 p24 core antigen and reverse transcriptase activity. HIV1 antigenaemia : it was measured using an enzyme immunosorbent assay (Abbott). PCR : it was carried out using primers in HIV1 GAG and ENV ; amplified inserts were identified by Southern blotting.
Results : 109 PBMC cultures have yielded 37 HIV1 isolates ; virus isolation happened to be positive in cases with a negative antigenaemia ; PCR was posi- tive in cases of confirmed infection and in some other cases, thus raising technical or fundamental questions.
Conclusion : Both PBMC culture and PCR should be associated for an early diagnosis of HIV infection.

TRACK B: CLINICAL SCIENCE & TRIALS

POSTER DISCUSSION: PEDIATRIC HIV INFECTION—NEURODEVELOPMENT AND LAB DIAGNOSIS

S.B.208 DIAGNOSIS OF PERINATALLY AQUIRED HIV INFECTION.

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Objective: We looked at virological markers for HIV infection in infants born to HIV infected mothers to establish infection early in life.
Methods: Eleven infants (2 twins) stage P0 born to 9 HIV positive mothers were tested for HIV infection with 1) plasma P24 antigen (Ag) by EIA Ag-capture (Abbott), 2) plasma viraemia by plasma culture and 3) quantitative peripheral blood mononuclear cell (PBMC) coculture. Serial dilutions (10^3 to 10^6) PBMC were cocultured with uninfected PHA- stimulated PBMC. The culture supernatants were harvested at day 14 and assayed for P24 Ag by EIA Ag-capture assay (Abbott).
Results: Ten of the 11 infants were asymptomatic at the time of assay. All 11 infants had assays for both plasma P24 Ag and quantitative coculture while 6 of 11 had assays for plasma viraemia.

	Number	% Positive
P24 Ag	4/11	36%
Plasma viraemia	6/11	55%
PBMC Coculture	8/11	73%

Of the 8 infants who were HIV positive on quantitative coculture 3 progressed to AIDS and 2 (twins) have died from *P. Carinii* pneumonia. The other 5 infants are asymptomatic. Three of the 5 asymptomatic infants had quantiative cord blood mononuclear cell cocultures. All cord blood cocultures were negative but 2 infants developed positive cocultures by 3 weeks of age and the quantitative PBMC cocultures were positive at 10^2 to 10^3 TCID per 10^6 cells. The negative coculture at birth and positive coculture by 3 weeks of age was concordant with polymerase chain reaction (PCR). The fact that these 2 infants were PCR and coculture negative at birth and converted to PCR and coculture positive suggests perinatal transmission in these infants.
Conclusion: Quanitative coculture is useful for early identification of HIV positive infants and quantiation of viral load may be a useful prognostic indicator.

S.B.209 T-CELL SUBSETS IN CORD BLOOD OF INFANTS BORN TO HIV SEROPOSITIVE MOTHERS (SPM) AND INFANTS BORN TO HIV SERONEGATIVE MOTHERS (SNM): RELATIONSHIP TO MATERNAL T CELL SUBSETS AND HIV CLINICAL STATUS. A PROSPECTIVE STUDY

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Objective: To evaluate differences in T-cell subsets in infants born to SPM and SNM.
Methods: T-cell subsets in cord and maternal blood of 254 infants born to SPM and 350 infants born to SNM were determined by flow cytometry using monoclonal antibody labelling [leu3, leu2, leu4, TCR-1, TCS-d, UCHL1, CD45R, HLA-DR, (leu11+leu19), IL2] of whole blood. Values denote the mean percent of T-cells comprised by a subset. Three and six month follow-up data will be available at time of study presentation.
Results: Mean T4/T8 levels for SPM vs. SNM (0.63 vs. 1.28; p<.001) were different than corresponding cord blood levels for infants born to SPM and SNM (1.68 vs. 1.73;p=.719). Cord T4/T8 levels were maintained in infants from mothers with AIDS: infants=1.76; mothers=0.27. Mean NK* subsets, although not different among mother or cord blood samples on the basis of serostatus, were higher in maternal bloods (maternal=10.4% vs 3.3%; p<0.001). Activated T-cells (HLA DR*) were lower in cord compared to maternal blood (cord=3.4% vs maternal=26.4%; p=0.002), yet not different among cord bloods on the basis of serostatus. Increases in Leu8*UCHL1* in SPM vs. SNM (28.8% vs 20.5%) and differences in CD45R and TCS-delta subsets seen in seropositive mothers were not reflected in cord blood.
Conclusion: T-cell subsets which show perturbation in the face of HIV-1 infection in adults remain unchanged in cord blood, including samples from infants of mothers with advanced HIV disease. Since at least 30% of these infants will prove to be infected, this immunologic naivete may reflect immune unresponsiveness or lack of significant immunologic pathology at birth.

S.B.210 T-CELL PARAMETERS BY AGE IN NORMAL AND HIV-INFECTED CHILDREN

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Objective: To describe CD4 cell number, percent and CD4/CD8 ratios by age groups in HIV infected and normal control children.
Methods: Flow cytometry was used to determine T-cell parameters. Statistical differences were detected by T-tests.

Results: TABLE: T-CELL PARAMETERS (MEAN+SD) IN CHILDREN OF DIFFERENT AGES

	AGE	N=	CD4#	CD4%	CD4/CD8
Normal Children	< 18 mo	11	1803 ± 173	43.0 ± 10.3	2.72 ± 1.9*
	18mo-4yr	13	2144 ± 1212	39.8 ± 6.9	1.83 ± .45
	≥ 5yr	7	1543 ± 562	34.4 ± 6.6	1.32 ± .41*
CDC: P-1	< 18 mo	8	2603 ± 1623	38.9 ± 14.7	2.11 ± 1.76
	18mo-4yr	4	1374 ± 431	30.3 ± 3.5	.72 ± .14
	≥ 5yr	1	602	19	.45
CDC:P-2	< 18 mo	5	1245 ± 705	25.0 ± 12.0@	1.04 ± 1.02
	18mo-4yr	12	947 ± 528	21.8 ± 13.5	.54 ± .44
	≥ 5yr	17	263 ± 282	12.9 ± 11.7@	.36 ± .32

(*,@, < 18 mo compared to ≥ 5 yr, p ≤ 0.05)
Conclusions: Our results suggest that absolute CD4 numbers, CD4 percentages, or ratios as markers of HIV disease progression may be misleading in very young children. Further research is needed to establish T-cell ranges in children as related to their clinical immune status and thus initiation of therapy.

S.B.211 VIROLOGIC CHARACTERIZATION OF HIV INFECTION IN CHILDREN: A COMPARISON OF p24 ANTIGEN TO HIV CULTURES AND PCR

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Objective: Standard methods of diagnosis and staging among adult HIV patients have not been applicable to pediatric patients. The availability of anti-viral therapy presents a critical need for markers of disease progression. We explored the value of p24 antigen detection in comparison to other virologic methods in establishing diagnosis and identifying disease progression. Methods: Clinical staging was performed using CDC criteria. HIV co-culture was performed using the method of D. Gallo with modifications. Plasma co-cultures were performed using 0.3cc of plasma harvested by centrifuging whole, heparinized blood at 1400rpm x 15 minutes. PCR was performed using two primer pairs, GAG and ENV, and a positive result required reactivity to both primers. Quantitation of PCR was obtained by comparing patient GAG primer reactivity to a series of simultaneously analyzed controls with known quantities of HIV genome. P24 antigen capture ELISA was performed according to manufacturer's specifications. Results: A total of 72 patients have been evaluated and 28 have HIV infection by CDC criteria. P24 antigenemia was not associated with disease stage but high level antigenemia was associated with late stage (P=0.005). P24 antigenemia did not predict early positive cultures or plasma viremia. Both PCR and culture were sensitive methods of diagnosis (92.4% and 84.6% respectively) but p24 antigen assay was less sensitive (50%). Importantly, cultures established diagnosis in 9 infants who did not have diagnostic serology. Quantitative PCR of the GAG primer was associated with late stage disease (P=0.06). A striking association was noted between time to positive culture or plasma viremia and late stage (P=0.0005 and 0.000035). Conclusion: P24 Antigen detection had low sensitivity and was not predictive of early positive cultures or plasma viremia. High level p24 antigen, strongly reactive PCR, rapidly positive cultures and plasma viremia are associated with late stage disease.

S.C.212

RAPID AND SPECIFIC DIAGNOSIS OF HIV-1 AND HIV-2 INFECTIONS IN ABIDJAN, COTE D'IVOIRE

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Objective: To identify the most efficient testing strategy for diagnosis of antibody to HIV-1 and HIV-2 in Abidjan.
Methods: Serum from 1134 consecutive patients presenting at Tuberculosis Treatment Centres were tested by whole virus ELISA (WVE) for HIV-1 and HIV-2; specimens reactive on either WVE were tested by synthetic peptide ELISA (SPE) and by Western blot (WB) for HIV-1 and HIV-2. All specimens were also tested by rapid mixed antigen ELISA (RMAE; Abbott Testpack). The combination of WVE, virus-specific WB for WVE reactive specimens, and SPE on WVE and WB dual reactors was considered the "gold standard".
Results. Thirty percent of specimens reacted to HIV-1, 6% to HIV-2, and 9% to both viruses. The Table compares different testing strategies.

Screen/Supplemental Test	Sensitivity	Specificity	Predictive Value Pos	Neg
WVE/WB/SPE	(Reference)	(Reference)	(Reference)	
WVE/SPE	97.9%	99.7%	99.6%	98.5%
RMAE/SPE	97.5%	99.7%	99.6%	98.2%
RMAE/WVE *	99.4%	96.7%	95.5%	99.5%
RMAE *	99.4%	86.7%	84.2%	99.5%

(* Does not distinguish between HIV-1 and HIV-2)
Conclusions: (1) WVE/SPE, and RMAE/SPE are effective for specific diagnosis; (2) SPE used as supplemental ("confirmatory") test has equal positive predictive value as WB, but suffers from slight lack of sensitivity; (3) WVE/SPE and RMAE/SPE allow reductions in time and reagent costs by eliminating unnecessary WB.

S.C.213

OPERATIONAL CHARACTERISTICS OF COMMERCIALLY AVAILABLE ASSAYS TO DETERMINE ANTIBODIES TO HIV-1 AND/OR HIV-2 IN HUMAN SERA

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Objective: In order to advise Member States of WHO on the selection of the appropriate HIV antibody assays, a study was undertaken to obtain objective information on the characteristics of commercially available assays. The study focused mainly upon the comparative determination of operational aspects of these assays, such as ease of performance, suitability for use in small blood collection centres and sensitivity and specificity using a small panel of well-characterized sera.
Method: Most assays were performed on a panel of 361 to 518 sera (including anti-HIV-2) of African, European and South American origin. The tests were compared to western blot (WB) HIV-1, (Dupont) and a WB HIV-2 (New Lav blot II, Pasteur).
Result: The study evaluated 18 assays (9 ELISAs, 6 simple tests and 3 supplemental assays) with an emphasis of ascertainment of simple/rapid tests. Two ELISAs, 1 simple test and 1 supplemental assay are designed for detecting both anti-HIV-1 and anti-HIV-2 (combined assays). Performance (sensitivity and specificity) of the simple assays was as good as that of ELISAs regardless to the type of antigens used. First and second generation EIAs were comparable. The combined assays showed high sensitivity and specificity comparable to specific assays for HIV-1 or HIV-2. Other operational factors of these assays will be presented in detail.
Conclusion: The detailed information on these operational characteristics generated from this study was found to be very useful to health policy decision makers, directors of blood banks, managers of national AIDS control programmes and others. Reports will be made available periodically to keep Member States informed of recent developments on HIV diagnosis.

S.C.214

EVALUATION OF SCREENING U.S. BLOOD DONATIONS FOR HIV-ANTIGEN

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Objective: To evaluate whether HIV-antigen (Ag) screening would detect HIV-infected antibody (Ab)-negative blood donations.
Methods: In 1989, 13 geographically diverse regional blood centers routinely tested a random sample of 507,066 donations for HIV-Ab and with 1 of 2 HIV-Ag tests (Abbott Labs., Coulter Imm.). Specimens found repeatedly reactive (RR) for HIV-Ag were sent to a central laboratory for Western blot, repeat Ag testing, and confirmatory neutralization; 99 were sent to the FDA for polymerase chain reaction (PCR). On follow-up, Ag positive (pos.) donors, and a sample of donors of non-neut RR, or Ag- Ab neg. (control) specimens were interviewed, and tested by PCR and HIV culture (CDC).
Results The results of testing donations for HIV-Ag and Ab were as follows:

Total tested	HIV-Ag RR locally (%)	HIV-Ag RR central lab	HIV-Ag positive	HIV-Ab positive	HIV-Ab neg. HIV-Ag pos.++
507,066	406 (0.08)	222 (0.05)	5 (0.001)	111 (0.02)	0/5

++ All 5 Ag. pos. specimens were positive on Western blot.
PCR was pos. for the 5 Ag pos. units but for none of 94 non-neut RR units. On follow-up, Ag pos. donors had evidence of HIV on PCR (4/4) and culture (1/2), and 3 (75%) of 4 donors reported risks for infection. In contrast, none of the non-neut RR donors were pos. on PCR (0/75) or culture (0/81); 9 (11%) of 81 non-neut RR donors and 2 (3%) of 68 control donors had risks.
Conclusion: HIV-Ag screening did not identify infectious units negative for HIV-Ab. Other screening techniques will have to be considered to identify HIV-infected, Ab-negative persons who continue to donate blood.

S.C.215

WIDE DIVERGENCE OF DIFFERENT HIV WESTERN BLOT (WB) INTERPRETATION STANDARDS IN LOW-POSITIVE SERA

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Objective: The CDC has issued new guidelines for WB interpretation [MMWR 38/S7:1-7,1989]. We have seen increasing numbers of sera with *faint* antibodies against env+gag, env+pol, gag+pol, env+gag+pol, or pol or env alone. Study aims: (i) Comparison of different WB interpretation guidelines with such sera; (ii) determine the individuals truly infected with HIV.
Methods: Antibody tests: recomb. EIA, Envacor®, and HIV-1/-2 WB (DuPont; sera dil. 1/25). Antigen, PCR, and viral culture were additionally done on follow-ups. WB interpretations included 5: Association of State & Territorial Public Health Laboratory Directors/CDC, Consortium for Retrovirus Serol Standardization, American Red Cross, FDA/DuPont, SNCR.
Results: Approx. 10% of the sera seen at the SNCR in 1989 had WB of the above patterns, some for >2y. Of 220 such sera, 116 (52.7%) were positive by ASTPHLD/CDC, 96 (43.6%) by CRSS, 45 (20.5%) by ARC, but only 2 (0.9%) by FDA/DP). None was pos. for HIV-2. Envacor® was env-positive in 30 (13.6%) and gag-positive in 13 (5.9%). Serum antigen and virus cultures were negative in all instances. PCR results will be presented at the conference. WB analysis of 100 screening-negative, but otherwise unselected blood donors under analogous assay conditions showed p17 bands in 24%, p24 in 9%, and gp120/160 in 3%. The likelihood of a chance combination p24+gp120/160 (ASTPHLD/CDC- and CRSS-positive!) in a normal donor would thus be 0.09x0.03=0.0027, i.e. 1 out of 370.
Conclusion: PCR results pending, our data suggest that the WB interpretation guidelines endorsed by the ASTPHLD/CDC or CRSS, while they may be good for sera from symptomatic patients with clearly-positive screening results, are not stringent enough for their use in the testing of populations with low prevalence of HIV infection. They are dangerous when used for sera with border-line screening results and should be reconsidered.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER DISCUSSION: HIV TESTING—TEST PERFORMANCE

S.C.216 FULL-LENGTH RECOMBINANT ENV AND GAG PROTEINS SEEM TO BE SAFER THAN PEPTIDES FOR HIV TESTING

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Objective : use of synthetic peptides as screening reagents has been recently authorized. We carefully investigated the sensitivity and specificity of such reagents versus full-length vaccinia recombinant HIV proteins.
Methods : We have produced (in collaboration with Transgène) vaccinia recombinant full length HIV1 ENV GP 160, HIV2 ENV GP 140 and native E.Coli HIV1 P25. Purification of these proteins was performed by mild procedures, i.e. affinity chromatography using monoclonal antibodies or anionic exchange chromatography. A microplate immunoassay was designed based on a well equilibrated mixture of these proteins. This assay was compared with American and European licensed tests : specificity and sensitivity were determined with normal blood donors samples and HIV panels (including GRV, BBI-901) and African HIV1/2 positive samples.
RESULTS : SDS-PAGE analysis indicated purity levels greater than 90 %. Mild purification procedures offer maximal immunoreactivity. The major epitopes of interest for screening purposes are present on the solid phase as evidenced by the use of MAb's. Some MAb's reacted more or less with mixed peptides : more particularly, a MAb to GP 41 immunodominant epitope (AA 598 - 610) reacted more strongly with recombinant GP 160 than with the corresponding peptide, whereas they were coated at the same concentration. Lastly, P25 epitopes were often not included in similar tests.
Of the 3004 normal donors samples, only 3 were repeatably reactive. All HIV1 and HIV2 samples were found positive with an OD/cut. off ratio equal or superior to 3. On the opposite, peptides - based ELISAs missed some positive samples (one of an early seroconverter essentially presenting anti GAG antibodies and two of African HIV variant positive samples). Moreover, the ratios obtained were lower, especially for HIV2 positive samples.
Conclusion : The use of a mixture of full-length recombinant HIV proteins allows to achieve performance data as good as and often better than peptides in screening ELISAS.

S.C.217 LACK OF SHORT-TERM VARIATION IN HIV-1 PROVIRAL LOAD AND OTHER SEROLOGIC AND IMMUNOLOGIC MARKERS DURING ASYMPTOMATIC INFECTION

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Objective: Identify subclinical cycles of reactivation or dissemination of HIV-1 infection during asymptomatic disease.
Methods: Serially collected specimens (8 samples over 6 weeks) from 5 asymptomatic HIV-1-infected patients and 2 control donors were evaluated for: 1) proviral load by PCR on serial dilutions of peripheral blood mononuclear cells (PBMC); 2) in vitro kinetics of viral replication from PBMC; 3) serum HIV-1 antigen and antibody levels; 4) lymphocyte subsets; and 5) B-2 microglobulin and neopterin levels.
Results: HIV-1 proviral load ranged from 1 HIV-DNA+ cell in 10^4 PBMC to 1 in 10^6 PBMC among different infected persons. In contrast, serial samples from individual patients showed very stable DNA load over the six week collection period. Similarly, the kinetics of viral replication in vitro from serially collected PBMC, as well as the other serologic and immunologic markers, showed little short-term, intra-individual variation.
Conclusion: These results refute speculation that subclinical cycles of viral reactivation occur frequently. They also demonstrate baseline stability of various virologic and immunologic assays, and thus validate the interpretation of changes seen with clinical progression.

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S.C.218 SENSITIVITY AND SPECIFICITY OF GENE AMPLIFICATION (PCR) FOR HIV-1 DNA: A MULTICENTER STUDY.

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Objectives: To determine the sensitivity, specificity, and inter-laboratory reproducibility of large-scale PCR testing for HIV-1.
Methods: Each of 5 laboratories received 210 identical coded specimens of frozen lymphocytes for PCR analysis from 100 men HIV seropositive and culture positive and from 100 low risk seronegative persons. Five replicate samples from a single seronegative and 5 from a seropositive were included.
Results: To date, 3 laboratories have reported their findings:

Laboratory	Sensitivity	Specificity	% Indeterminate
1	98.0%	97.3%	1.4%
2	100.0%	100.0%	0
3	99.0%	89.2%	5.7%

Of the 15 indeterminate PCR tests, 14 were from "true" negatives. Agreement between laboratories varied from 91.4% to 97.6%.
Conclusions: Sensitivity of PCR testing is uniformly high in these laboratories. Specificity varies and was less than 90% in one laboratory where low specificity was entirely due to classification of "true" negatives as indeterminate. The occurrence of indeterminate reactions in HIV seronegatives emphasizes the need for caution in the interpretation of weak PCR reactions.

S.C.219 DETECTION OF HIV ANTIBODIES USING DRIED BLOOD SPOTS COLLECTED ON FILTER PAPER FROM NEONATES IS ACCURATE UNDER TROPICAL CONDITIONS IN ZAIRE.

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Objectives: To determine the accuracy of using dried blood spots (DBS) collected on filter paper from neonates to detect maternal HIV antibody and to assess the stability of DBS in various local storage conditions.
Methods: Neonates born to seropositive mothers delivering at a Kinshasa maternity have been enrolled in this ongoing study. DBS were obtained from newborns by heelstick and eluates were tested with ELISA (Genetic Systems). All positives have been confirmed by Immunoblot (Miniblot system). The results have subsequently been compared with maternal HIV serology. To assess stability, known seronegative, weak positive and strong seropositive DBS have been stored under 4 well-monitored, different (various temperatures, humidities and packaging) storage conditions and tested after 1,2,3,4,6,8 and 24 weeks. Results of the stored DBS have been compared with the initial DBS reactivities.
Results: Of the 269 neonatal DBS tested, 109 were positive from 111 infants with seropositive mothers (98.2% sensitivity); no false positive results have been found (100% specificity). The 2 babies with false negative DBS has no detectable HIV serum antibodies and were born to mothers with very low HIV antibody titers. After 6 weeks of storage, none of the known positive and negative DBS have shown reactivity changes.
Conclusions: In this ongoing study, detection of maternal HIV antibodies in neonatal DBS appears to be an accurate means of determining HIV seroprevalence in women of child-bearing-age (mothers with low-titer HIV antibodies may be missed). DBS can be stored for at least 6 weeks in various tropical conditions without affecting test reactivities.

S.C.220 HIV-1 AND OTHER ETIOLOGIES OF INDETERMINATE HIV-1 WESTERN BLOTS

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Objective: To determine the risk of seroconversion (SC), etiologies, and yield of supplemental tests in individuals reactive by HIV-1 EIA and indeterminate by Western blot (IWB).
Methods: 130 cases (with prior reactive HIV-1 EIA and IWB), 54 of their sexual partners (SP), and 88 EIA-negative controls (frequency-matched by site with cases) were referred from testing sites in Washington state for a case-control study. Subjects were tested by HIV-1 EIA and WB (Epitope & Dupont), polymerase chain reaction (PCR), HIV-1 culture, serum p24 antigen, HIV-1 recombinant peptides (ENV 9 & HIVAGEN), HTLV-1 & HIV-2 EIA, and for autoantibodies (ANA & rheumatoid factor). Cases were followed 9 mos to study the rate of SC.
Results: Four of 81 cases (4.9%) followed ≥ 6 mos seroconverted (95%CI= 1.4%,12.2%); 67% of the other 77 cases remained indeterminate by Epitope WB (91% by Dupont WB). All 4 seroconverters had HIV risk factors and p24 antibodies on initial WB. Specificity of HIV-1 culture, PCR, ENV 9, and serum p24 antigen were 100%, 98%, 97%, and 100% among the cases. Two SP were HIV-1 seropositive; the other 52 SP and all 88 controls were EIA negative, but 17% of the SP had IWB by Epitope (50% were IWB by Dupont) and 18% of controls had an IWB by Epitope (32% were IWB by Dupont). Conditional logistic regression for the first 94 cases and 74 controls identified independent risk factors for an IWB (with age and sex as covariates): prior positive tuberculin test (OR= 16.1, 95%CI=2.2, 118), fewer sexual partners in past 3 mos (OR=0.5, 95%CI=0.3, 0.8), less education (OR=0.8, 95%CI=0.7, 0.9), tetanus booster in past 2 yrs (OR= 4.6, 95%CI=1.4,14.8), and parity (OR=2.8, 95% CI=1.0, 7.9). No cross-reactivity was seen with HTLV-1 or HIV-2.
Conclusions: Risk of seroconversion was low (4.9%) among a cohort of low and high-risk cases with HIV-1 IWB, and was seen only among high-risk cases. Specificity of supplemental HIV-1 tests was high, confirming the lack of HIV infection in the nonseroconverters. Other factors, such as parity and immune stimulation by tetanus booster or TB exposure, were associated with IWB. The IWB were not due to cross-reactivity with HTLV-1 or HIV-2.

S.C.221 ANALYTIC SENSITIVITY AND SPECIFICITY OF ENZYME IMMUNOASSAY RESULTS IN TESTING FOR HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1) ANTIBODY

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Objective: The enzyme immunoassay (EIA) is a routinely used screening test to detect the presence of antibodies directed against HIV-1. In 1986, a performance evaluation program at CDC was implemented to evaluate the quality of performance of laboratories testing for HIV-1 antibody and to identify problems that occur during the testing process.
Methods: Laboratories participating in the CDC Model Performance Evaluation Program for HIV-1 antibody testing furnished EIA results after testing performance evaluation panels sent them in August and November 1989. Panels consisted of 10 individual samples consisting of negative, positive and weak-positive samples, some of which were duplicate. Sample reactivity was based on composite EIA and Western blot (WB) testing at CDC. Not all laboratories received the same panel of samples.
Results: Laboratories reported 18 (0.51%) false-positive interpretations for the negative samples, compared with 13 (0.4%) false-negatives for the positive samples, and 164 (3.5%) false-negatives for the weak-positive samples. Intra-shipment reproducibility was 99.30% for the 1145 negative duplicate sample pairs tested, 99.83% for the 1146 positive duplicate pairs, and 98.95% for the 1142 weak positive duplicate pairs.
Conclusion: Most laboratories experienced no difficulty in testing the negative or positive samples, while some experienced difficulty in testing the weak positive samples. In general, the sensitivity and specificity of the EIA screening tests were high, and there was good intra-shipment reproducibility in testing the duplicate samples.

S.C.222 DETECTION OF ANTIBODIES TO HIV-1 AND HIV-2 BY A SINGLE, RAPID PEPTIDE-BASED IMMUNOASSAY

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Objective: To develop a rapid (10 min.), synthetic peptide-based immunoassay for the separate and simultaneous detection of antibodies to HIV-1 and HIV-2 for diagnostic purposes.

Methods: Synthetic peptides representing highly conserved, immunodominant regions of HIV-1 gp41 and HIV-2 gp36 were adsorbed to latex beads. These beads and procedural control beads were individually spotted onto a nylon membrane in an asymmetrical 4-spot array. The membrane was incorporated into a plastic, molded device containing an absorbent pad (GENIE). Serum or plasma, diluted 1:15, was filtered and applied to the membrane, washed with buffer and the immunochemical reactions were visualized by the sequential addition of enzyme-anti-human Ig conjugate and chromogenic substrate. The large antigen surface area, high epitope density and sample flow-through allow for very rapid and efficient immunochemical binding.

Results: Summary of preclinical trial data.

HIV-1:	560 True Negatives	HIV-2:	560 True Negatives
	111 True Positives		8 True Positives
	1 False Positive		2 False Positives*
	0 False Negatives		0 False Negatives

* Western Blot Atypical (p26, p34)

Sensitivities of 100% and 100% and specificities of 99.8% and 99.6% for HIV-1 and HIV-2, respectively, were calculated using immunoblot as the reference.

Conclusion: This rapid, easily performed, peptide-based assay readily differentiates HIV-1 and HIV-2 seropositivity and is a useful diagnostic test.

S.C.223 FIELD EVALUATION OF TWO SIMPLE/RAPID TEST KITS FOR THE DETECTION OF HIV-1 ANTIBODIES.

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** Global Programme on AIDS, WHO.

Objective: To assess the performance and suitability of the DuPont HIVCHEK (Switzerland) and Recombigen HIV-LA (Cambridge Biosciences, USA) under field conditions in developing countries where the conventional ELISA method is not economically and technically feasible.
Methods: A total of 1950 serum samples from blood donors, risk behavior groups and suspected AIDS cases were collected and tested in five regions of Ethiopia and retested with ELISA and Western blot at the referral laboratory. The results were statistically analyzed.
Results:

Type of test	Sensitivity (%)	Specificity (%)	P.V+ (%)	P.V- (%)	Test eff. (%)
HIVCHEK	94.8	99.8	99.2	99.1	99.1
Recombigen	90.0	99.6	97.8	98.2	98.1

P.V+, P.V- represent predictive values for positive and negative results respectively; eff = efficiency.
Conclusion: From the results shown above and the ease of performance that was observed in the laboratories DuPont HIVCHEK seems to be a better test.

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TRACK A: BASIC SCIENCE

POSTER SESSION

Co-Factor Studies, in vitro

S.A.225 CYTOMEGALOVIRUS (CMV) INDUCES HIV TRANSCRIPTIONAL ACTIVITY IN HUMAN FIBROBLASTS.

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Objective: While CMV readily replicates in human foreskin fibroblast cells (SF) in culture, HIV does not. One theory suggests that SF cells are CD4 negative, therefore HIV cannot enter these cells. Others find by polymerase chain reaction (PCR) that HIV can enter SF cells but do not replicate. We propose that both CMV and HIV can infect the same cell and that HIV transcriptional activity is temporally regulated by CMV infection.
Methods: A RNA capture assay (GeneTrak Systems) was used to detect HIV pol transcripts and PCR was used to amplify HIV genomic DNA sequences. Reverse transcriptase assays (RT) and an HIV p24 ELISA were used to assess HIV activity in culture supernatants. CMV yield was quantitated by plaque assay. CMV DNA was detected by DNA dot blot hybridization.
Results: HIV infected SF lysates and lysates from cultures co-infected with pooled aliquots of CMV and HIV contained detectable HIV DNA by PCR. There was no evidence of RNA transcription out to 5 days postinfection (pi). Lysates from cells infected with CMV at 24, 48, or 72 hours (h.) prior to HIV infection yielded levels of HIV DNA by PCR similar to those above. Significant transcriptional activity was observed out to 5 days pi and the strongest transcriptional activity was seen at the 48 h. time point. All culture supernatants were negative for HIV by RT and ELISA. Finally, HIV infection neither altered levels of CMV DNA nor virus production.
Conclusion: We offer direct biological evidence suggesting that transcriptional activation in CMV/HIV infected cells is temporally dependent on CMV replication. This data supports the hypothesis that CMV can be an important co-factor in HIV pathogenesis.

S.A.226 **ACTIVATION OF HUMAN IMMUNODEFICIENCY VIRUS IN HUMAN MYELOID CELLS BY COCAINE**

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Objective: We determine the impact of cocaine on the course of infection by the human immunodeficiency virus (HIV), the causative agent of AIDS, because cocaine is being utilized intraveneously at increasing frequency by drug users. Recent epidemiologic data from the Center for Disease Control (CDC) also have shown that AIDS is appearing at increasing frequency among intraveneous (IV) drug users.
Methods: Impact of cocaine on HIV-1 was studied by transient transfection into human myeloid cell lines the pU3RIII plasmid that contains the HIV-1 LTR linked to the bacterial chloramphenicol acetyl transferase (CAT) reporter gene.
Results: As little as 0.1 µg/ml cocaine activated the HIV-1 LTR-driven reporter CAT gene expression in U937 and in HL60 cells by 11.0 and 4.5 fold, respectively.
Conclusion: HIV-1 infected cells in a contaminated syringe can be exposed to up to 1 gm/ml of cocaine prior to i.v. injection, and the plasma level of cocaine in users may reach 1 µg/ml, our finding that a physiologic dose of cocaine can activate the HIV-1 LTR suggests that cocaine can exacerbates HIV-1 transmission and infection in human drug users.

S.A.227 HETEROLOGOUS LEUKOCYTE-INDUCED REACTIVATION OF HIV-1: IMPLICATIONS FOR TRANSFUSION SUPPORT OF INFECTED PERSONS

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Objective: Evaluate possible cofactor role of heterologous blood components in reactivating HIV-1 infection.
Methods: Peripheral blood mononuclear cells (PBMC) from 3 asymptomatic anti-HIV-1-positive individuals were cultured and carefully monitored for HIV-1 proviral DNA titer using end-point dilution PCR and expression (RNA, p24 Ag) under the following conditions: 1) no stimulation (negative control); 2) phytohemagglutinin (PHA) stimulation (positive control); 3) coculture with 10^1 to 10^7 PHA-stimulated or non-stimulated, mitomicin C-treated (MCT) heterologous (HLA-matched and -mismatched) PBMC; 4) coculture with heterologous plasma, platelets, and RBC.
Results: MCT-heterologous PBMC induced a biphasic activation of HIV-1 expression: initial upregulation of viral gene expression in in vivo infected cells, followed by in vitro dissemination of infection to previously uninfected patent cells. Induction was dose-dependent; ratios of less than 1 stimulating cell to 10^3 patient PBMC were ineffective. Virus induction was enhanced by prior PHA-activation of the MCT heterologous PBMC. Both HLA-identical and mismatched PBMC induced reactivation. Enriched populations of activated monocytes were particularly effective inducers; 10% heterologous plasma showed slight induction; platelets and RBC showed no effect.
Conclusion: These in vitro results suggest transfused heterologous PBMC may upregulate HIV-1 expression/replication in infected recipients.

Supported by NHLBI grant PO1-HL36589.

S.A.228 HEPATITIS B VIRUS DNA IN MONONUCLEAR CELLS-A POTENTIAL CO-FACTOR OF HIV INFECTION

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Objective: This study examined the clinical significance of the *in vitro* phenomenon of *trans*-activation of the HIV long terminal repeat (LTR) by the X protein of the hepatitis B virus (HBV). The first objective was to determine the frequency of HBV deoxyribonucleic acid (DNA) in peripheral blood mononuclear cells (PBMC) in gay men. The second objective was to evaluate any possible relationship between HBV DNA in PBMC and the stage of HIV disease. The third objective was to detect evidence of HBV transcription and expression in PBMC.
Methods: Thirty-eight gay men participating in an HIV natural history study were enrolled. DNA was extracted from PBMC and subjected to polymerase chain reaction (PCR).
Results: PCR analysis of PBMC DNA revealed the presence of X gene as well as other HBV sequences. Further, Southern blot hybridization confirmed the PCR results. Nineteen of 19 HIV negative gay men had positive PCR results for HBV DNA in their PBMC. Both of the 2 AIDS patients had PCR results positive for HBV. Of 17 HIV positive gay men without AIDS, 15 were positive and 2 were negative for HBV DNA by PCR. Template negative control and patient controls were consistently negative.
Conclusion: A high percentage of gay men have detectable HBV DNA in PBMC. The high prevalence of HBV DNA in PBMC in this patient population precludes analysis of the relationship between HBV DNA in PBMC and HIV disease stage. Presence of HBV DNA in HIV-infected PBMC may have the potential for *in vivo trans*-activation of the HIV LTR by the HBV X protein.

S.A.229 THE ROLE OF DNA BINDING MOTIFS IN TRANSACTIVATION OF THE HIV LONG TERMINAL REPEAT (LTR) BY HERPES SIMPLEX VIRUS TYPE 1 (HSV-1).

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Objective: To examine the importance of the DNA binding sites for nuclear factor kappa B (NF-κB) and Sp1 in the molecular mechanism of transactivation of the HIV LTR by HSV-1.
Methods: Plasmids carrying the HIV LTR with deletions of NF-κB and/or Sp1 binding sites were constructed, and linked to a chloramphenicol acetyltransferase indicator gene. Vero cells were transfected with these constructs in combination with plasmids carrying the HIV tat gene and/or the HSV-1 immediate-early regulatory genes ICP 4 or 0. In addition some cells were infected with HSV KOS strain, rather than transfected with isolated HSV genes. As intracellular factors have been shown to effect HIV LTR expression differently between cell lines, the experiments were also performed using a mitogen-stimulated Jurkat T cell line.
Results: In Vero cells, deletion of the NF-κB regions did not signficantly alter the activation of the LTR by tat, ICP 4, 0, or HSV-1, while deletion of the Sp1 regions caused a slight but constant decrement in LTR activation. Deletion of both sites, however, abrogated the ability to activate the LTR. This may indicate a gross defect that is not directly related to transactivation, as such a deletion in whole virus results in replication incompetence (Leonard et al. J Virol. 63:4919, 1989). In mitogen-stimulated Jurkat T cells, however, HIV LTR was activated by HSV-1 and activation persisted despite deletion of both the NF-κB and Sp1 sites.
Conclusion: Our results do not support a critical role for the NF-κB or the Sp1 binding sites in the mechanism of transactivation of the HIV LTR by HSV-1.

S.A.230 THE EPSTEIN BARR VIRUS (EBV) BZLF1 GENE PRODUCT ACTIVATES THE HIV-1 5' LTR.

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Objective: To determine if the EBV BZLF1 transactivator can increase expression of the *lacZ* reporter gene when under control of the HIV-1 LTR.

Methods: HeLa cells were transfected by electroporation with 100 μg of the plasmid pLRON (containing the *lacZ* [ß-galactosidase] gene under the control of the HIV-1 5' LTR), or 100 μg pLRON with 1) 50 μg of the plasmid pTAT3 (*tat* gene expressed by the SR-alpha promoter [DNAX]) 2) 50 μg of the plasmid pBZdNael (EBV BZLF1 gene expressed by the SV40 early promoter), or 3) 50 μg of pTAT3 and 50 μg of pBZdNael. Reporter gene expression was monitored by fluorescent signal generated when 4-methylumbeliferyl-D-galactoside (MUG) was cleaved by ß-galactosidase.

Results: Results from HeLa cells transfected with pLRON alone were normalized to 1.0. The *tat* gene product (pTAT3) caused an increase in ß-galactosidase signal of 44 ± 2.3 over background, whereas the BZLF1 gene product (pBZdNael) caused an 18 ± 1.3 fold increase in the ß-galactosidase signal. When the HIV-1 LTR was activated by both *tat* and BZLF1 simultaneously, the ß-galactosidase signal displayed an 120 fold increase over background.

Conclusion: The EBV BZLF1 gene product activates HIV-1 LTR directed expression of the *lacZ* reporter gene. This effect has not been previously demonstrated. EBV BZLF1 does not activate the HIV-1 LTR as efficiently as the HIV-1 *tat* gene product, but upon cotransfection of HeLa cells with pLRON, pTAT3, and pBZdNael the ß-galactosidase reporter gene signal exceeds the additive effect of either the BZLF1 or the *tat* gene products in HIV-1 LTR activation. This result suggests that these transactivators synergistically activate gene expression from the HIV-1 LTR. We are now more closely examining the role of these transactivators in controlling HIV-1 gene expression, since the ability of EBV gene products to activate HIV gene expression may be of biological consequence in persons infected with both viruses.

S.A.231 DETECTION OF EPSTEIN-BARR VIRAL SEQUENCES IN BENIGN LYMPH NODE BIOPSIES FROM HIV INFECTED PATIENTS AND THE ASSOCIATION WITH LYMPHOMA

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Objective: To detect EBV DNA sequences in benign lymph node biopsies from HIV infected patients and determine if the presence of EBV was associated with higher rates of lymphoma.
Methods: DNA samples extracted from 53 benign fixed lymph node biopsies (37 HIV infected, 16 non-HIV infected) were amplified for HIV (gag gene) and EBV (EBNA 1 gene) DNA sequences by the polymerase chain reaction. The results were correlated with the developement or the concurrent presence of lymphoma.
Results: EBV was detected in 35% (13/37) and HIV was detected in 95% (35/37) of the benign lymph node biopsies from HIV infected patients. For the non-HIV infected patients, neither EBV nor HIV was detected. In the HIV infected patients, concurrent lymphoma or the subsequent developement of lymphoma occured at a higher rate (5/13) when EBV was detected in the benign biopsies compared to the absence of EBV (1/23).
Conclusion: The detectable presence of EBV in the histologically benign lymph node biopsies was associated with a significantly increased risk ($p<0.01$) for the developement or the concurrent presence of lymphoma. It is not known if the detected EBV sequences represent occult lymphoma and/or the activation of latent EBV infection. These studies support a role for EBV in the genesis of HIV related lymphoma.

S.A.232 INHIBITION OF PROTEIN KINASE C AND CD3-MEDIATED INTRACELLULAR CALCIUM INFLUX OF T LYMPHOCYTES BY A SYNTHETIC PEPTIDE WITH SEQUENCE IDENTITY TO HIV-1 TRANSMEMBRANE PROTEIN GP41

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Objective: The objective of this study was to elucidate the molecular mechanism by which a synthetic peptide containing env amino acids (aa) 581-597 from the HIV-1 transmembrane protein gp41 inhibits CD3/T-cell receptor mediated human lymphoproliferation.
Methods: The peptide aa581-597 was tested for its effect on intracellular calcium ($[Ca^{2+}]_i$) influx mediated by the CD3 complex of human T lymphocytes and for its effect on the enzymatic activity of protein kinase C (PKC).
Results: The peptide aa581-597 inhibited the anti-CD3 stimulated $[Ca^{2+}]_i$ influx in Jurkat T cells. aa581-597 also inhibited PKC in vitro (K_i=1.3 μM) and acted directly on the catalytic domain of the enzyme. PKC-mediated phosphorylation of the CD3 γ-chain was inhibited in Jurkat cells exposed to aa581-597.
Conclusion: The sequence aa581-597 of HIV-1 gp41 was shown to inhibit $[Ca^{2+}]_i$ influx and PKC enzymatic activity, both of which are early and critical events in T cell activation. These inhibitory activities of aa581-597 are consistent with the CD3 signal defect reported for lymphocytes of HIV-1-infected individuals.

Cellular Immunity: Host Abnormalities

S.A.233 PREFERENTIAL INFECTION OF CD4+ MEMORY T CELLS BY HIV-1 AND ITS ROLE IN SELECTIVE T CELL FUNCTIONAL DEFECTS

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Objective: CD4+ T cells of patients with AIDS exhibit a qualitative defect in the ability to respond to soluble antigen while responses to mitogens remain normal. CD4+ T cells can be broadly divided phenotypically into "naive" (CD45R high, 4B4-, 2H4+, UCHL1-) and "memory" (CDw29 high, 4B4+, 2H4-, UCHL1+) cell subpopulations which represent distinct maturation stages. In the present study, we determine the HIV-1 infectability of memory and naive CD4+ T cell subsets in vitro, and determine the in vivo preference of HIV-1 in these subpopulations. We also determine the relationship between functional abnormalities attributable to CD4+ T cells in HIV-infected individuals and the infectability of CD4+ T cell subsets.
Methods: PBMCs obtained from normal and HIV-1 infected individuals were stained with fluorescent monoclonal antibodies (MoAbs) to CD4 and to either CDw29 (anti-4B4), CD45R (anti-2H4), or CD45p180 (anti-UCHL1), and sorted by flow cytometry into CD4+/subset+ and CD4+/subset- cells at purities of 96-99%. Aliquots of purified CD4+ T cell subsets were studied by viral cultivation, functional assays and quantitative PCR.
Results: PCR studies show that the memory cell subset of CD4+ T cells is preferentially infected (4-10 fold) by HIV-1 in vitro, and these memory cells are the principle reservoir for HIV-1 within CD4+ T cells obtained from infected individuals. Functional abnormalities attributable to CD4+ T cells in HIV-infected individuals (failure to respond to tetanus toxoid, or to anti-CD3 MoAbs) reside primarily within these memory cells.
Conclusion: The selective functional defects present in the memory CD4+ T cell subset of HIV-infected individuals may be a direct result of the preferential infection and consequential greater viral burden within these cells.

S.A.234 CD4+2H4+ AND CD4+4B4+ LYMPHOCYTES IN DIFFERENT STAGES OF HIV INFECTION.

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Trasfusion Unit,°Infectious Diseases Clinic L.Sacco Hospital,Milan,Italy.

Objective: to evaluate the variations of CD4+ cells subsets in different stages of HIV infection.
Methods: a consecutive series of 71 HIV infected patients and 13 healthy controls (HC) was tested for CD4+,CD8+,and,by double labelling,CD4+2H4+ and CD4+4B4+ subsets employing Coulter Clone MoAbs. Patients were divided in 4 groups (G) on the basis of the absolute number of CD4+ cells/mm3 (G1:>400,n=18;G2:399-200,n=18;G3:199-100,n=13;G4:<100,n=22).
Results: the percentages of CD4+cells positive for 2H4 were 43.6±8.5 in HC,and 47.2±11.6;35.8±13.7;43±17.2;44.9±30.2 in the 4 considered patients groups. A significant reduction was observed in G2 vs G1($p<0.01$)only. The CD4+ cells positive for 4B4 were 51±7.8 in HC and 34.8±9.4;58.7±11.4;51.4±19.8;44.2±17.9 in the groups.Asignificant difference was present between HC and G1($p<0.001$) and G2($p<0.003$); G1 and G2 ($p<0.001$) and G3 ($p<0.004$) and G4($p<0.05$);G2 and G4 ($p<0.005$).
Conclusion: a CD4+2H4+ cell percentage reduction occours in the peripheral blood of patients with CD4+ counts < 400/mm3.The CD4+4B4+ cell percentage is significantly reduced in patients with higher CD4+ cell counts but it increases,with a reduction of CD4+2H4+ cell percentage, when CD4+cells were<400/mm3.

S.A.235 PHENOTYPIC AND FUNCTIONAL ANALYSIS OF AN ELEVATED SUBPOPULATION OF GAMMA DELTA (γδ) T CELLS IN THE PERIPHERAL BLOOD OF AIDS PATIENTS (PTS).

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Objective: To determine the phenotypic and functional characteristics of an elevated subpopulation of γδ T cells in the peripheral blood of AIDS pts.
Methods: Peripheral blood leukocytes (PBLs) separated from whole blood by Ficoll-Hypaque density gradient centrifugation were obtained from AIDS pts. The leukocytes were then stained using the following FITC- or PE-conjugated monoclonal antibodies: δTCS-1 (anti-δchain of the γδ T-cell receptor), Leu2a (anti-CD8), Leu3a+b (anti-CD4), anti-HLA-Dr, anti-IL2 receptor, 2H4 (anti-CD45R), and 4B4 (anti-CDw29). Lymphocytes were then analyzed by standard two-color flow cytometry. δTCS-1$^+$ lymphocytes were purified by cell sorting and cell lines were established in IL2-containing media. Cell lines were examined for non-MHC restricted cytotoxicity using the K562 cell line.
Results: PBLs from AIDS pts have previously been shown to contain an elevated subpopulation of γδ T cells (δTCS-1$^+$). Phenotypic analysis of δTCS-1$^+$ lymphocytes from ten pts with AIDS indicated that a significant number of δTCS-1$^+$ cells were CD8$^+$ (23%-47%), HLA-Dr$^+$ (37%-66%), CD45R$^+$ (98%-100%), CDw29$^+$ (67%-100%) and did not express CD4 or IL-2R. δTCS-1$^+$ cell lines were found to mediate strong cytolytic activity against an NK sensitive target K562 (29-966 lytic units), but only modest activity against an NK resistant target FeMEX (0-29 lytic units).
Conclusion: A significant portion of δTCS-1$^+$ γδ T-cells from AIDS pts bear a phenotype characteristic of activated cytotoxic/suppressor cells. Cell lines derived from δTCS-1$^+$ T-cells were capable of mediating NK-like cytotoxicity.

S.A.236 THE ONTOGENY OF UCHL1 EXPRESSION ON T-CELLS IN PAEDIATRIC HIV INFECTION

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Objective: The aim of this study was to measure the expression of the putative memory (UCHL1+) T-cell in neonates and children at risk of vertical HIV transmission.

Methods: Blood samples from 4 cords and 18 children aged between 3 months and 5 years were studied. UCHL1 and CD4 antigen expression on lymphocytes was measured by dual colour flow cytometry. The results were compared to the normal range established by Hayward et al (Eur J Immunol 1989, 19: 771-773).

Results: The percentage of UCHL1+ T-cells in children who are known to be HIV positive is markedly raised, (see below). One of 4 cord blood and 1 of 4 samples from infants under 12 months old, whose HIV status is not confirmed, are similarly elevated.

Age	UCHL1+ T-cells(%)	HIV status	Normal range(%)
0 (cord blood)	2,3,4,18	unknown	1 - 2
3-12 months	7,9,12,34	unknown	14 - 20
1-3 years	3,9,21,26,30,33	all negative	20 - 26
3-5 years	2,25,28,43*,55*, 76*, 95*,99*	*positive	27 - 33

The percentage of UCHL1+ T-cells. The results underlined are those which are substantially higher than the normal range.

Conclusions: Raised levels of UCHL1+ T-cells in neonates may be an early indicator of HIV infection. Longitudinal studies are required to confirm this observation and are in progress.

S.A.237 DISCORDANT EXPRESSION OF T CELL ACTIVATION MARKERS (HLA-DR, CD38, CD25, CD69) AS INDICATORS OF CELLULAR IMMUNE RESPONSE TO HIV INFECTION

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HIV infection results in a progressive depletion of the CD4 T-Cell compartment. However, it is clear that the host response to HIV infection is probably responsible for the variable kinetics of disease progression. We have studied the coexpression of several activation markers in a series of 21 seronegative and 23 seropositive individuals using lysed whole blood and a panel of two color antibody combinations; CD8/CD38(Leu 2/Leu 17); CD3/CD25(Leu 4/IL2R), CD3/CD69(Leu 4/Leu 23); CD3/HLA DR(Leu 4/HLA-DR). All data were acquired using LeucoGATE™, SimulSET™ software and a FACScan™ flow cytometer.

ANTIBODY COMBINATION	PATIENT STATUS	N	MIN VALUE	MAX VALUE	MEAN	SD	P VALUE
CD8+/CD38+	Normal	12	8	18	13	3.5	0.0001
CD8+/CD38+	HIV	16	2	68	42	19	
CD3+/DR+	Normal	21	2	20	9	4.5	0.0001
CD3+/DR+	HIV	23	24	77	45	15	
CD3+/CD25+	Normal	21	17	35	24	5	0.0001
CD3+/CD25+	HIV	23	1	15	7	4	
CD3+/CD69+	Normal	14	2	13	8	3	0.002
CD3+/CD69+	HIV	18	6	26	14	5.5	

The expression of three (CD38, CD69, HLA-DR) activation markers was clearly increased in HIV infected individuals while CD3/CD25 (Leu 4/IL2R) was markedly reduced. Displays of this data along three independent axes permitted clear separation of HIV infected and normal individuals. Such displays revealed clusters of patients described by the differential coexpression of marker pairs. Patterns of expression for these markers may be useful for longitudinal follow up of HIV infected patients and the identification of host response elements which effect disease progression.

S.A.238 FLOW CYTOMETRIC EVALUATION OF CD8+ CELL SUBSETS IN HIV-INFECTED INDIVIDUALS

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Objective: To determine if a predominant CD8+ cell subset in HIV-infected individuals is responsible for the observed suppression of HIV replication by CD8+ cells.

Methods: Peripheral blood was obtained from asymptomatic HIV seropositive individuals (n =12), asymptomatic HIV-positive long term survivors (LTS) (n =4), AIDS patients (n = 5) and heterosexual controls (n = 10). Multiparameter flow cytometric evaluation of CD8+ cell subsets was performed utilizing fluorescently labelled antibodies against activation antigens (HLA-DR, CD38) and cell adhesion molecules (C11b, CD18, CD44, CD54, CD57, and Leu 8). In parrallel studies, CD8+ cells were assessed for antiviral activity by cocultivation with autologous CD4+ cells. Virus production was measured by reverse transcriptase assays.

Results: Flow cytometric studies on CD8+ cells demonstrated a predominant CD8+ C11b-, DR+ CD38+ cell in asymptomatic seropositives and LTS, while AIDS patients had primarily a CD8+, CD11b+, DR-, CD38+ phenotype. Evaluation of cell adhesion molecules revealed reduced expression of CD54 on CD8+ cells in all three HIV-seropositive groups compared to heterosexual controls. Evaluation of CD44 expression showed AIDS patients had the highest density, asymptomatic intermediate, and LTS lowest. CD8+ cell antiviral activity was much lower in AIDS patients than in the other subjects.

Conclusion: Flow cytometric evaluation of CD8+ cell subsets among HIV-seropositive groups showed a general increase in activation antigens and a reduction in cell adhesion molecules. CD8+ cells from AIDS patients gave a distinct pattern characterized by CD11b+ DR-. A relative loss of antiviral activity by CD8+ cells from AIDS patients was also found and may reflect the difference in phenotype of this lymphocyte population as compared to that of the other subjects.

S.A.239 TAC INHIBITORY FACTOR (p29) PRODUCED BY HIV-INFECTED PATIENTS' ADHERENT CELLS: EFFECT ON T-CELL PROLIFERATION.

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Objectives: we have recently biochemically characterized a Tac inhibitory factor with a m.w 29kDa, produced spontaneously by adherent cells from HIV infected patients. p29 inhibitory protein has been shown to be distinct from α-γ-INF, TNFα, and viral protein gp120. Here we report on the effect of p29 on the proliferation of normal T cells. Methods: Normal PBMC were cultured in the presense of biochemically semi-purified p29 obtained from crude CM and were stimulated with various agents. Cell proliferation was determined by ^{3}HTdR incorporation. The function of IL2-R expressed on mitogen-activated PBMC was studied by binding of ^{125}I-rIL2. Expression of IL2-Rα and IL2-Rβ chains was evaluated by indirect immunofluorescence using appropriate moAbs. Results: p29 protein (2.5μg/ml) was shown to inhibit the expression of IL2-Rα but not IL2-Rβ chain, when the cells were stimulated with either PHA or alloantigens. Co-stimulation with PHA and PMA significatly enhanced the inhibitory effect of p29. The decreased expression of IL2-Rα on the cell membrane was due to a decreased accumulation of mRNA transcripts. p29 could also inhibit the mitogen-induced expression of MHC class II molecules but not the 4F2 and transferin receptor. Decreased expression of IL2-Rα was followed by a 2-3 fold decrease of the number of high affinity IL2 binding sites/cell. Moreover, p219 inhibited the mitogen-induced proliferation of normal PBMC. Conclusions: p29 inhibitory factor can block T cell activation and proliferation and could be involved in the pathophysiology of the immune dysfunctions during HIV infection.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.240 FUNCTION AND STRUCTURE OF IL2-R EXPRESSED ON HIV PATIENTS' T CELLS.

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Objectives: High affinity IL2-R are composed of two binding chains (IL2-Rα and IL2-Rβ). Since HIV infected patients present a decreased expression of IL2-Rα and low proliferative responses we studied the structure and function of IL2-binding chains expressed on patients' cells. Methods: Expression of IL2-Rα and IL2-Rβ on freshly isolated and mitogen-activated PBMC from HIV-infected patients was evaluated by indirect immunofluorescence and flow cytometry using appropriate moAbs. Cross-linking and binding of ^{125}I-rIL2 were used to study the structure and function of IL2-R. Results: PBMC from HIV-infected patients did not constitutively express IL2-Rα although the expression of IL2-Rβ is decreased in comparision to normal controls. The expression of both IL2-binding chains is decreased on mitogen-activated patients' cells because of a lower accumulation of IL2-Rα and IL2-Rβ mRNA transcripts. Cross-linking experiments revealed an heterogeneous pattern indicating in some patients absence of IL2-Rα, in others absence of IL2-Rβ and in some cases decreased signals corresponding to IL2-Rα and IL2-Rβ. Binding experiments also revealed a significantly decreased number of high affinity IL2-binding sites /cell and in some cases a complete absence of high affinity IL2-R. These abnormalities are less important in asymptomatic and more pronounced in ARC and AIDS patients. Conclusions: The results indicate for the first time both important abnormalities of the IL2-Rβ chain expression on cells from HIV-1 subjects as well as significant impairement of the function of IL2-R, explaining, thus, the low proliferative responses of patients' cells.

S.A.241 HIV-1 INFECTION OF HUMAN FETAL THYMOCYTES MAY ALTER EXPRESSION OF DIFFERENTIATION MARKERS.

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Objective: Some children with congenital HIV-1 infection are immunocompromised. This suggests that fetal thymocytes may be infected by HIV-1 resulting in immune dysfunction because of altered T cell differentiation. Therefore, this study examined the expression of T cell markers on human fetal thymocytes in vitro after HIV-1 infection.
Methods: Human fetal thymuses were obtained from abortuses of HIV-1 seronegative females. Thymocytes were isolated and cultured for 2 days with phytohemmaglutinin and thereafter cultured in medium containing interleukin-2 and either maintained in this medium or exposed to the RF strain of HIV-1 for 1 hour. Thymocyte infection by HIV-1 was determined by immunocytochemistry, in situ hybridization and an infectious cell center (ICC) assay using the CEM-SS cell line. Flow cytometry using monoclonal antibodies that bind to T cell differentiation markers was used to analyze cell cultures.
Results: The thymocyte cell lines have been cultured for 10 months without the addition of growth factors. The HIV-1 exposed thymocytes (E88/RF) produced infectious particles as shown by electron microscopy and ICC assay. Other positive indices of HIV-1 infection included p24 ELISA, immunocytochemistry for *gag* and *env* proteins, and in situ hybridization. In contrast, the non-HIV-1 exposed thymocytes (T412) were negative for infection by these criteria. E88/RF cells were positive for the early T cell marker, T10, and negative for CD4 and all other markers tested. However, T412 cells were positive for both T10 and CD4 while negative for the other markers.
Conclusions: HIV-1 infection of human fetal thymocytes in vitro may cause altered T cell differentiation although masking of the CD4 epitope cannot be discounted. If HIV-1 causes changes in normal fetal thymocyte differentiation in vivo, this may explain, in part, the immune dysfunction characteristic of pediatric AIDS.
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S.A.242 BINDING OF gp120 DOES NOT INHIBIT CD3 MEDIATED T CELL STIMULATION

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Objectives: Selective stimulation of gp120 bearing cells from HIV-1 infected individuals or of gp120 coated cells from uninfected individuals.
Methods: $CD4^+$ cells of healthy blood donors coated with recombinant HIV-1 gp120 envelope glycoprotein or PBMC of HIV-1infected individuals were stimulated with the anti-CD3 MoAb BMAO30 F(ab)2 fragment crosslinked to various anti-CD4 T cell MoAb (i.e. Clonab T4, OKT4 or MT151) or anti-gp120 MoAb in presence of monocyte supernatant and IL-2. Such dual MoAb-stimulation (Eur.J.Immunol. (1987), 17:873) enables to selectively stimulate only those cells (i.e. $CD4^+$ cells) which were recognized by the second Ab (i.e. anti-CD4 Ab).
Results: Crosslinking BMAO30 $F(ab)_2$ with an anti-gp120 MoAb failed to induce selective proliferation of gp120 coated cells (using both T cells passively coated with (10 or 100 ng/ml) gp120 or T cells of HIV-1 infected individuals). T cells of HIV-1 infected individuals could however, be stimulated by BMAO30 $F(ab)_2$ MoAb crosslinked to anti-CD4 MoAb. Addition of gp120 to PBMC of non-infected persons did not affect the proliferative response either, provided T cells were stimulated with a CD4 MoAb which does not bind to the gp120 recognition region on the CD4 molecule (i.e. OKT4). Proliferation was however reduced if an anti-CD4 MoAb which bind to the gp120 recognition region on the CD4 molecule (i.e. MT151) was used.
Conclusion: Altough selective proliferation of gp120 bearing cells using dual MoAb-stimulation could not be achieved, gp120 coated cells proliferated normally if stimulated via the CD3 complex.

S.A.243 CYTOLYTIC T CELLS TO PNEUMOCYSTIS CARINII INFECTED MACROPHAGES

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Objective: Pneumocystis carinii is a well recognized pathogen in the context of HIV infection. However relatively little is known about the immunological response to this organism. Recent studies have suggested that Cytotoxic T Lymphocyte (CTL) mediated killing of infected macrophages is important in immunity against intracellular organisms. We present our results in an attempt to further elucidate the cellular immune response to P. carinii.
Methods: Mononuclear cells isolated from peripheral blood were stimulated with cysts and trophozoites of P. carinii, obtained from the lungs of corticosteroid treated rats, to produce antigen specific activated lymphocytes. These lymphocytes were then used as effectors against antigen-primed, and chromium-labelled, autologous macrophages to measure antigen specific cytotoxicity in vitro. Electron microscopy was used to document the morphology of the interaction between the organism and the host macrophages.
Results: Electron microscopy showed human macrophages with intracellular cysts of P. carinii. A significant degree of antigen specific killing (20% at an effector-to-target ratio of 10:1) was obtained when the infected macrophages were exposed to CTL induced with pneumocystis antigen.
Conclusion: The data presented provides evidence that pneumocystis causes intracellular infection, and emphasizes the role of the macrophage, on its own or together with cytolytic T cells, as a major component of host defense to P. carinii.

S.A.244

TNF AND IL-1 RELEASE BY ALVEOLAR MACROPHAGES IS NORMAL IN HIV INFECTED PATIENTS.

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To evaluate the contribution of cytokine release by alveolar macrophages(AM) to the development of opportunistic infections(OI) in HIV disease we isolated AM from broncho-alveolar lavage(BAL) from 33 HIV+ patients (15 with and 18 without AIDS) and 15 seronegative patients. We compared their secretion of TNF and IL-1.
AM were cultured in the absence(-) and presence(+) of IFN or LPS, and the TNF and IL-1 content of the supernatants was assessed by Cr. release from U937 cells and thymocyte proliferation respectively. Results are expressed as the median and ranges of the stimulation index for IL-1, and the specific lysis of U937 (%) for TNF. AIDS patients were subdivided into those with (Inf+) and those without(Inf-) OI at the time of BAL.

	Controls	HIV+ (non-AIDS)	AIDS (Inf -)	AIDS (Inf +)
TNF(-)	25 (2-59)	27 (1-54)	26 (9-54)	39 (26-55)
TNF(+)	51 (21-65)	47 (19-72)	52 (35-61)	59 (40-77)
IL1(-)	2 (0-10)	2 (1-17)	2 (2-3)	1 (0-20)
IL1(+)	19 (3-24)	15 (0-33)	15 (3-18)	13 (0-24)

The spontaneous and induced TNF and IL-1 release was identical in controls and all HIV patients in the absence of OI. In OI, a spontaneous elevation of TNF release did occur. Conclusion: there is no impairment of cytokine release to explain OI.

S.A.245

HIV gp 41 SYNTHETIC PEPTIDES INFLUENCES NORMAL PRODUCTION OF CYTOKINES

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Objective: The effect of synthetic peptides corresponding to sequences 735-752 and 846-860 of HIV gp 41 and 304-328 of HIV gp 120 on the "in vitro" production of various cytokines have been evaluated in normal controls.
Methods: Normal PBMC were stimulated with PHA(for the induction of IL2), LPS (for IL1 and TNF), SEA and poly:IC (for alpha and gamma IFN, respectively) in presence or absence of 735-752, 846-860, 304-328 synthetic peptides. The "in vitro" production of the cytokines was evaluated in the stimulated supernatants using either biological or RIA assays. An HIV unrelated synthetic peptide (D pept) was used as control.
Results: In presence of HIV gp41 and gp120 peptides, the production of IL1 and TNF was significantly increased while the production of IL2 alpha and gamma IFN was decreased. Pept D did not affect the "in vitro" production of these cytokines.
Conclusion: Envelope peptides determine a significant alterations in the production of cytokines which are critical for cellular immune response. This event could contribute to the development of the immunologic alterations observed "in vivo" in HIV patients.

S.A.246

ALTERED PRODUCTION OF TNF α, β AND IFN-γ BY HIV INFECTED PATIENTS.

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Objective : To study TNF and IFN-γ production by HIV infected patients in response to mitogen and soluble antigen stimulation.
Methods : PBMC from HIV infected patients in CDC Group 0, Group II/III and Group IV were stimulated with the mitogens PHA + PMA, anti-CD3 antibody and the soluble antigens tuberculin (PPD), inactivated preparations of herpes simplex (HSV) and cytomegalovirus (CMV) and HIV gag-P24 30 amino-acid peptides. Cytokine production was measured by ELISA assays using specific anti-cytokine antibodies.
Results : CDC Group II/III and Group IV patients secreted significantly higher levels ($p = <0.01$) of all three cytokines compared to controls when exposed to PHA+PMA or anti-CD3 antibody. Furthermore the kinetics of TNF α and IFN-γ production was altered with TNF α being secreted as early as 4 hours and both TNF α and IFN γ were produced 48 hours after activation. When stimulated with soluble antigens, patients responded differently to controls only in the production of TNF α. All the soluble antigens and the 30 amino acid gag P24 peptides induced 2-10 fold higher levels of TNF α by patients. However, both patients and controls secreted TNF β or IFN-γ to CMV, HSV stimulation but only weakly to the peptides.
Conclusion : The altered production of TNF and IFN-γ by early disease stage patients may be important in pathogenesis.

S.A.247

INCREASED SPONTANEOUS ENZYME DEGRANULATION OF NEUTROPHILS IN HIV-1 INFECTED PATIENTS.

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In addition to the T-cell mediated immunodeficiency in ARC and AIDS patients,defects of polymorphnuclear neutrophils (PMN) effector functions in HIV infected patients (pts.) have been reported.
Objective: To study the release of the lysosomal enzymes, lysosome (LYS) and ß- glucuronidase (GLU) and the cytosolic enzyme lactat-dehydrogenase (LDH), in PMN of HIV-infected pts. compared to healthy volunteers (vol.).
Method: PMN of 32 male homosexual pts. (median age 36 y, 14 AIDS, median CD4+ lymphocytes 318/ul, range 14-910/ul) and 35 vol. (31 m, median age 27 y) were separated by Ficoll-Paque gradient. $1x10^7$ PMN/ml of pts. and vol.,resp., were stimulated in duplicate with FMLP 10^{-6} M/ml and opsonized zymosan 4 mg/ml over 30 min. Enzyme activities were measured in the supernatant of stimulated and unstimulated cells, related to the total amount of enzymes in the lysed (Triton-X 1.0%) PMN, and expressed as % of total amount. LYS-activity was determined photometrically at 436 nm (substrate M. lysodeicticus), GLU-activity at 405 nm (substrate p-nitrophenyl-ß-D-glucuronide), and LDH-activity at 366 nm (substrate NADH2, pyruvate).
Results: LYS-release (median) of unstimulated PMN was moderate but significantly increased ($p < 0.001$, Wilcoxon-unpaired test) in PMN of pts. (6.2%) compared to PMN of vol. (4.6%). Likewise, the GLU-release in unstimulated PMN of pts. was slightly higher than of the PMN of controls (4.1% versus 3.5%; $p < 0.05$). No difference for LYS-release could be seen between PMN of pts. and controls in FMLP stimulated cells (18.8% versus 18.9%, n.s.), in zymosan stimulated cells (9.3% vs. 9.1%,n.s.), and for GLU-release (FMLP: 22.2% vs.23.7%; zymosan: 7.1% vs. 5.8%). LDH could not be measured in the supernatant. The number of CD4+ lymphocytes of the pts. was related to the amount of spontaneous enzyme release: CD4+ <200/ul LYS 6,7%, CD4+ >200/ul LYS 5,2% ($p < 0.05$); GLU-activity: CD4+ <200/ul 6,1%, CD4+ >200/ul 3,7% ($p < 0.05$). No relation was found to the number of CD8+ lymphocytes, t4/t8-ratio or stage of HIV infection.
Conclusion: These results indicate increased basal enzyme degranulation of PMN in HIV-infected patients correlating to the degree of CD4+ lymphocyte depletion. Enzyme release of stimulated PMN of pts. was unchanged compared to controls.

S.A.248

HIV-1 BLOCKS MONOCYTE-MEDIATED LYSIS OF HIV-INFECTED CELLS: ROLE OF THE HIV ENVELOPE PROTEIN.

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Objective: Peripheral blood monocytes (PBM) can selectively lyse malignant or virus-infected cells. The CD4 glycoprotein, which is expressed on both T4 lymphocytes and monocytes, facilitates cytotoxic-target cell interactions, modulates several monocyte functions, and is the primary cellular receptor for HIV. We assessed the effects of HIV-1, and other ligands which bind CD4, on human PBM-mediated lysis of a variety of target tumor cell lines.
Methods: PBM, isolated from normal human donors by gradient separation and plastic adherence, were activated with IFN or IL-2, and their ability to lyse ^{51}Cr labeled tumor cell targets was measured.
Results: Activated PBM effectively lysed HUT-78, U937, and H-9 cells, but lysis of all 3 tumor cell lines was substantially reduced ($p < 0.05$) or abolished by infection with either the SF2 (ARV) or $HTLV_{III-B}$ strains of HIV-1. This effect was not due to impaired PBM viability. Furthermore, VPE-16, a recombinant vaccinia virus that induces target cell expression of the HIV-1 envelope protein, or the addition of anti-CD4 antibodies (Leu3a or OKT4) to uninfected target cells significantly inhibited PBM-mediated lysis. VSC-8, the control vaccinia vector, did not block target lysis, even at concentrations 1000 fold higher than VPE-16. Neither soluble rgp120, nor the Fab' fragment of Leu3a inhibited target cell lysis, indicating that multivalent, but not monovalent, ligand-CD4 interactions impair PBM cytolytic function.
Conclusions: Our results indicate that binding of the HIV envelope protein expressed on target cells to monocyte-CD4 may block immune-mediated destruction of host cells infected with HIV-1. Furthermore, they suggest a novel mechanism of immunosuppression by HIV-1: interaction of the viral envelope protein with its cell surface receptor may disrupt immune functions mediated by that receptor.

S.A.249

HIV INFECTED MONOCYTE-MACROPHAGES (MØ) PHAGOCYTOSE CANDIDA ALBICANS LESS EFFICIENTLY THAN UNINFECTED MØ.

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OBJECTIVE: To examine the effect of HIV infection of MØ on phagocytosis of Candida albicans.
METHODS: MØ from 9 donors were isolated by Ficoll-hypaque centrifugation, purified by glass adherence. Cells were infected with HIV-DV at MOI of 0.1. After 7 days infected and uninfected MØ were incubated with opsonized propydium-iodide labelled C.albicans for 1-24 hours. The proportion of MØ containing C.albicans and the number of yeasts were MØ were assessed by FACS analysis, con-focal microscopy, and light microscopy. HIV infection was assessed by immunocytofluorographic analasys using HIV p24 monoclonal antibody, HIV RNA slot blot, and supernatant HIV p24 (Abbott HTLV III EIA).
RESULT The optimal time of incubation for phagocytosis was 2-5 hours. A mean of 81% uninfected MØ(n=9) and 53% of infected MØ (n=9) from paired donors were found to phagocytose C.albicans. Results by FACS analysis and light microscopy were concordant. 35-40% of MØ contained HIV p24 antigen by FACS analysis, with HIV RNA and supernatant p24 antigen confirming productive infection. Con-focal laser microscopy and EM defined the intracytoplasmic localization of C.albicans. Kinetic studies to correlate surface Fc receptor epxpression and phagocytic capacity are in progress.
CONCLUSION: Phagocytosis of C.albicans by HIV infected MØ is less efficient than by uninfected MØ, from same donor and of same age in culture.

Virus-Specific Cellular Immunity

S.A.250

CYTOTOXIC IMMUNE RESPONSES IN RHESUS MONKEYS AFTER HIV-1 INFECTION

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OBJECTIVE: To study HIV-1 specific Cytotoxic T Lymphocyte (CTL) activity and Antibody Dependent Cellular Cytotoxicity (ADCC) in Rhesus Monkeys (RM).
METHODS: Four juvenile RM were inoculated intravenously with 2.5×10^6 $TCID_{50}$ of cell free HIV-1 (CFV). Two of these also received homologous PBL infected with HIV-1 (IPBL) in-vitro one month later. At intervals after infection PBL were assayed for CTL on RLA-matched or mismatched, ^{51}Cr labeled, EBV-transformed B cell targets infected with vaccinia virus expressing gp160. Primary responses from freshly isolated PBL or secondary after a 10 day in-vitro incubation with UV treated autologous HIV-1 infected PBL blasts were measured. Sera were assayed by a ^{51}Cr release HIV-1 specific ADCC assay, and a binding antibody ELISA.
RESULTS: One RM given CFV only, and 1 RM given CFV and IPBL sero-converted (>1:1280 ELISA) and titers remained stable for >18 months as did ADCC activity. CTL specific activity ($p<.001$) was detected in PBL at 4 and 6 months post-inoculation but not later, from both of these RM, as well as in the PBL of another RM (also receiving infected PBL but not seroconverting).
CONCLUSION: We found that HIV-1 can induce in RM significant levels of humoral and cell mediated immune responses. These results may be relevant to understanding the pathogenesis of AIDS and serve as a model for study of the immune response to HIV-1.

S.A.251

CHARACTERIZATION OF SIV-SPECIFIC T CELL PROLIFERATIVE RESPONSE OF INFECTED RHESUS MACAQUES

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Objective: To determine the optimal conditions for T cell proliferation responses specific for primate lentivirus.
Methods: 2 groups of 4 rhesus macaques were infected with SIV and tested monthly for T cell proliferative responses.
Results: T cell proliferative responses were demonstrated as early as 2 weeks post-infection. T cells from SIV-infected monkeys failed to proliferate in response to SIV added directly to the culture. However, when SIV is processed by autologous antigen presenting cells (APC) prior to culture with purified T cells, proliferative responses can be uniformly demonstrated by SIV-infected monkeys but not uninfected controls. Proliferation in response to heat-inactivated SIV is demonstrated to be mediated by $CD4^+$ T cells and is MHC (major histocompatibility complex), class II-restricted. However, the proliferative response to infectious SIV is mediated by both $CD4^+$, MHC class II-restricted and $CD8^+$, MHC class I-restricted T cells.
Conclusion: T cell proliferation assays have been established which can assess the cellular immune response of rhesus macaques to SIV. These assays will be essential in defining immunodominant epitopes of SIV.

S.A.252 SIV-SPECIFIC CYTOTOXIC T LYMPHOYCTE RESPONSE OF INFECTED RHESUS MACAQUES

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Objective: To determine the optimal conditions for cytotoxic T lymphocyte (CTL) responses specific for primate lentivirus.
Methods: 2 groups of 4 rhesus macaques were infected with SIV and tested monthly for cytotoxic T cell (CTL) responses.
Results: CTL responses were demonstrated as early as 2 weeks post-infection. The highest level of CTL activity is mediated by CD8+, MHC (major histocombatibility) class I-restricted T cells. However, CD4+, MHC class II-restricted CTL have also been demonstrated. In addition, experiments show that CTL are CD16 negative. CTL target cells are $CD4^+$ since target cell generation could be blocked with CD4 monoclonal antibody specific for the SIV binding site. Incubation of target cells with leupeptin prior to the cytotoxic assay inhibited target cell generation suggesting that active processing is required. As disease progresses, a decline in the CTL response has been observed.
Conclusion: Cytotoxic T lymphocyte assays have been established which can assess the cellular immune response of rhesus macaques to SIV. These assays will be essential in determining the immunobiology and natural history of SIV in a non-human primate model of AIDS.

S.A.253 CHARACTERIZATION OF THE HIV-SPECIFIC CYTOTOXIC T LYMPHOCYTE RESPONSE IN HUMANS

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Objective: To identify some of the HIV-infected cells that are targets to cytotoxic T lymphocyte attack in humans, and to determine the factors that control the intensity of the HIV-specific CTL response.
Methods: HIV-infected cells were collected by various procedures, including broncho-alveolar lavage. These cells were tested as targets to HIV specific, HLA restricted CTL. Various donors were used as a source of CTL, including HIV infected patients under AZT treatment, and seronegative individuals living in sexual contact with HIV-infected individuals.
Results: Various HIV-infected cells were shown to be good targets to HIV-specific CTL, including lung fibroblasts and macrophages, and CD4 T lymphoblasts. The specificities of these CTL reactions were defined with target cells transfected with cloned HIV genes. Follow-up of HIV-infected donors showed that AZT had an immuno-stimulatory effect at the beginning of treatment, but gradually dropped back to ground levels in most patients. The "resistance" to HIV infection detected in seronegative contacts could not be ascribed to an increased CTL response.
Conclusion: The HIV-specific CTL response is effective in destroying a number of infected cells of divergent origins. This CTL response might be effective in prolonging survival of infected individuals, although our data are not indicative of protection by CTL against infection.

S.A.254 CTL RESPONSE TO P24(GAG) IN LONG-TERM ASYMPTOMATIC SEROPOSITIVE INDIVIDUALS INFECTED WITH HIV-1.

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Objective: To determine whether individuals who have been consistently HIV-1 seropositive and completely asymptomatic for longer than six years can be distinguished from a group of AIDS patients by their CTL response to p24.
Methods: We studied the CTL response to the p24(gag) antigen in long-term survivors from the San Francisco cohort who have been seropositive and completely asymptomatic for an average of nine years. This group was compared with a group of AIDS patients from the same cohort who had also been infected for an average of nine years. The assay was performed using freshly isolated PBL as effector cells and autologous EBV-B cells infected with a p24 vaccinia construct were used as target cells.
Results: Eight out of nine (89%) long-term survivors studied had detectable killing directed against the gag protein. This killing was MHC-restricted. In contrast, only one of five (20%) AIDS patients tested had any gag-specific CTL ($p<0.01$).
Conclusion: These data suggest that MHC-restricted CTL specific for the p24 protein may be important in controlling progression from an asymptomatic state to expression of symptoms.

S.A.255 SELECTIVE LOSS OF HIV-SPECIFIC CYTOLYTIC ACTIVITY IN PATIENTS WITH AIDS DESPITE A NORMAL BROAD CYTOLYTIC FUNCTION. HIV-SPECIFIC CTL BELONG TO THE CD8+DR+ SUBSET WITH DECREASED CLONOGENIC POTENTIAL.

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Objective: To investigate the mechanism(s) responsible for the decrease and ultimately the loss of HIV-1 specific cytolytic activity in patients with AIDS.
Methods: HIV-1 specific cytolytic activity as well as the cytolytic potential of sorted $CD8^+DR^+$ and $CD8^+DR^-$ cells were assessed in a cytotoxicity microassay. Using EBV transformed autologous cell lines infected with recombinant vaccinia vectors expressing envelope, gag, pol and nef proteins of HIV-1_{NB}. Broad cytolytic potential was assessed by a redirected killing assay using as target cells the P815 cell line and by adding α-CD3 mAb.
Results: In asymptomatic seropositive patients studied with in vivo expansion of the $CD8^+DR^+$ subset (30-60%) we demonstrated that the HIV-1 specific cytolytic activity was restricted to the $CD8^+DR^+$ subset, whereas no consistent cytolytic activity was displayed by $CD8^+DR^-$ cells. Analysis over time of HIV-1 specific cytolytic activity and of cytolytic potential showed that HIV-1 specific cytolytic activity was present in the early stages of HIV-1 infection, whereas $CD8^+DR^+$ cells were not cytolytic in the advanced stages of disease (AIDS). On the contrary, no major changes in the cytolytic potential between the early and the advanced stages of disease were detected within either the $CD8^+DR^+$ or $CD8^+DR^-$ subsets. Finally, compared to $CD8^+DR^-$ lymphocytes, $CD8^+DR^+$ cells from the same patient showed a severe reduction in the ability to proliferate in vitro in response to different stimuli and in their clonogenic potential.
Conclusion: The loss of HIV-1 specific cytolytic activity may result at least in part from a progressive decrease in the pool of HIV-1 specific CTL belonging to the $CD8^+DR^+$ subset with decreased clonogenic potential at the same time that the broad cytolytic capability of $CD8^+$ T cells remains intact.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.256 ANALYSIS OF HIV-SPECIFIC CYTOTOXIC T CELL RESPONSES IN LUNGS AND LYMPHOID ORGANS

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Objective : HIV specific T cells have been characterized both in lungs and peripheral blood, with distinct types of primary cytolytic effector cells. To further define the virus specific cytolytic response in various infected organs, we have analysed the HIV-specific CTL activities in lungs and lymphoid organs : lymph-nodes and spleens, from seropositive patients.
Methods : CTL specificities were studied in standard ^{51}Cr release assay and limiting dilution analysis using recombinant vaccinia viruses expressing Env., Nef, Gag, Tat or Vif proteins (Transgene). HLA restriction was analysed with allogeneic and autologous EBV cell lines.
Results : Alveolar CTL have been studied in 15 patients. A primary CTL response detected in 10 patients was directed against the Env., Gag and Nef proteins. Those 3 specificities were HLA-restricted. Similar studies were performed in lymph-node and spleen cells from 6 patients. CTL mediating an HLA restricted primary cytolysis specific for the Env glycoprotein were also detectable in lymph-nodes. In contrast, the primary Env-specific cytolytic response could be mediated by both HLA restricted and non restricted effector cells in the spleen. Primary and secondary HLA restricted CTL activities could be also evidenced against the Nef and Vif proteins in lymph-node and spleens cells.
Conclusion : Lymphoid organs and lungs contain distinct cytolytic effector cells detectable in primary responses against the constitutive and regulatory proteins of HIV.

S.A.257 DEFINITION OF THE IMMUNOMODULATORY POTENTIAL OF REGIONS OF THE HUMAN IMMUNODEFICIENCY VIRUS SURFACE GLYCOPROTEINS.

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Before designing a vaccine to prevent infection with the Human Immunodeficiency Virus (HIV), we believe it is necessary to define the immunomodulatory epitopes of the HIV surface glycoproteins. Previous experiments with other CD4 ligands, such as anti-CD4 antibodies, have shown that these ligands inhibit the function of the T-cells with which they interact. As whole gp120 binds the CD4 molecule, we examined the immunosuppressive potential of purified recombinant gp120 on T-cell function. Gp120 does not inhibit PHA, CD3 or CD2 induced proliferation of normal T-cells, whereas whole, inactivated virus inhibited CD3 and antigen induced T-cell proliferation. These results suggest that HIV and gp120 inhibit T-cell activation via steric hindrance rather than delivering a negative signal to the cell. Thus it is necessary to define the immunostimulatory epitopes within gp120 rather than consider whole gp120 as an ideal T-cell immunogen. We tested 4 peptides of the C terminus end of gp120 (kindly provided by Dr. T.J. Palker, Duke University Medical Centre, North Carolina) and whole gp41 (kindly provided by Dr. S. Jones, Commonwealth Serum Laboratories, Melbourne, Australia), for their ability to stimulate T-cells from patients infected with HIV. 32% of well seropositive individuals tested were able to mount a T-cell proliferative response to one, or more, of the HIV peptides. These patients responded to peptides which a) failed to be predicted by algorithms for T-cell immunogenicity and b) failed to generate significant antibody responses. These results suggest that the T-cell immunodominant epitopes of HIV surface glycoproteins in humans can only be determined by examining the ability of various peptides to stimulate human T-cells.

S.A.258 IDENTIFICATION OF CONSERVED HIV ENVELOPE SEQUENCES RECOGNIZED BY HUMAN CYTOTOXIC LYMPHOCYTES

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Objective: To define the HIV gp160 (env) conserved epitopes recognized by human cytotoxic T lymphocyes (CTL) from HLA-A2 patients.
Methods: Peptides were synthesized according to the env gene sequence of HIV-1 (Bru), and incubated at various doses (i.e., 0.03 to 11 uM) with P815-A2 target cells (HLA-A2). Peptide-covered targets were further incubated with HIV-specific CTL lines from HLA-A2 patients and assayed for cytotoxicity. Peptide results were confirmed by two alternative approaches: (1) Peptide-specific rabbit sera and monoclonal antibodies were used to inhibit recognition by CTL; (2) The HIV-1 env gene was deleted in two fragments and then transfected into P815-A2 target cells.
Results: Six highly conserved peptidic epitopes were detected on the gp120 protein, recognized by human HIV-specific CTL in strict association with HLA-A2 transplantation antigen. The same peptides were not recognized on incompatible P815-A3 cells (HLA-A3). Peptides corresponding to the gp41 (env) sequence were not recognized by the same CTL. These results were confirmed by blocking with peptide-specific antibodies.
Conclusion: These results confirm the recognition of highly conserved env sequences by human HIV-specific CTL. The lymphocyte donors studied here were all positive for HLA-A2 transplantation antigen, and peptide recognition was HLA-A2 restricted. Since 20 to 30 percent of European populations are positive for HLA-A2, eventual application of these peptides to vaccination or immunotherapy can be considered in a large proportion of individuals assuming that CTL play a protective role in HIV infections.

S.A.259 INTRA AND EXTRACELLULAR LOCATION OF VACCINIA RECOMBINANT HIV-1 GAG PROTEINS EXPRESSED IN HUMAN B CELLS.

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Objective. To determine if HIV-1 gag proteins produced in the cytoplasm by a gag recombinant vaccinia virus were transported to the cell surface, and if extracellular gag antigen levels correlated with host cell permeability.
Methods. Epstein-Barr virus transformed B cell lines were infected with vaccinia virus recombinants containing the gag gene of HIV-1 or the influenza A matrix protein gene, or wild type vaccinia virus. Monoclonal antibodies and human sera recognising HIV p15/17, p24 or p55 antigens were used to detect cytoplasmic and cell surface HIV antigen expression. Indirect immunofluorescence was analysed by FACSCAN. Cell permeability was monitored by propridium iodide staining. HIV gag p24 antigen levels were measured in the extracellular medium. Cell surface antigens were also measured by ADCC using HIV+ and HIV- negative human sera. T cell killing was tested on autologous targets with effectors from HIV+ donors.
Results. HIV gag antigens were found in the cytoplasm <4hours after host cell infection, but no gag specific staining was detected at the cell surface for up to 24 hours. HIV gag antigen levels in the extracellular medium increased over a 24 hour observation period to 4.9 ng/ml, while cell permeability increased in parallel. No cytoplasmic expression of HIV gag proteins was detected after 24 hours. ADCC showed that vaccinia related antigens were expressed, however no HIV gag related antigens were detectable. Gag specific MHC restricted T cell cytotoxicity was detected at 4 hours.
Conclusion. HIV gag antigens are not detectable serologically at the cell surface, but are recognised by cytotoxic T cells in this expression system.

S.A.260 HIV NEF, GAG AND ENV PEPTIDE EPITOPES IMPLIED IN PROLIFERATIVE AND CYTOLYTIC T CELL RESPONSES IN MICE

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Objective: To determine epitopes of nef, gag and env HIV-1 proteins implied in proliferative and cytotoxic T lymphocyte responses in mice immunized with vaccinia virus (VV) recombinants.
Methods: Mice from different strains were inoculated intravenously with VV recombinants expressing the nef (p27), gag (p55) and env (gp160) genes. Proliferation of CD4 T lymphocytes was induced with HIV-1 recombinant proteins or with synthetic peptides. Seventeen peptides were tested for nef, 5 for gag and 10 for env. Cytotoxic assays were performed with P815 murine mastocytoma cells pre-incubated with peptides. Cytotoxicity was controlled using P815 cells transfected with the HIV nef, gag or env gene.
Results: 1) HIV-specific T cell lines were generated by repeated stimulation with recombinant proteins. They were mainly CD4-positive, but also contained CD8-positive cells. These T cell lines had proliferative and cytolytic activities. (2) Using synthetic peptides, proliferative and cytolytic responses were observed with bulk spleen cells and T-cell lines. It was interesting that the same peptides were positive in both types of assay. So far, we have identified two double-positive peptides for nef, one for gag, and three for env.
Conclusions: The nef, gag and env peptides described here may be of interest in the eventual vaccination or immmunotherapy of humans and other primates.

S.A.261 PROPAGATION AND ANALYSIS OF HIV-1 GAG-SPECIFIC CYTOTOXIC T CELL CLONES.

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Objectives: Cloning of HIV-1 specific cytotoxic T lymphocytes (CTL) reactive with the gag protein and characterization of HLA restriction and epitopes recognized by these clones.
Methods: Peripheral blood mononuclear cells (PBMC) were cloned using the same strategy previously employed to generate CTL reactive with the HIV-1 envelope and reverse transcriptase proteins (Walker et al., PNAS 86:9514, 1989). Briefly, PBMC were obtained from HIV-1 seropositive subjects with significant bulk gag-specific CTL activity and cloned by limiting dilution in the presence of IL-2, irradiated PBMC feeder cells from seronegative donors, and a CD3-specific monoclonal antibody as a stimulus to lymphocyte proliferation. Bulk PBMC and clones were tested for cytotoxicity using as target cells EBV-transformed lymphoblasts infected with recombinant vaccinia viruses expressing the HIV-1 p55, p24 and p17 gag proteins, as well as a control vaccinia virus. HLA restriction was defined using allogeneic EBV lymphoblasts expressing the full length gag protein. Overlapping synthetic peptides corresponding to the gag protein were used to further define CTL epitopes.
Results: Bulk CTL activity against p55 gag ranged from 18.1 to 82.1% in the subjects from whom cloned CTL were derived. Analysis of bulk CTL activity in one patient against subunit vectors revealed 82.1% cytotoxicity versus p55, 84.3% against p24, and 14.6% versus p17, with 8.1% lysis against the control target cell Two CTL clones have been characterized: one specific for the p17 protein is restricted by HLA Bw62; the other is specific for p24 and restricted by HLA B52.
Conclusions: Gag-specific CTL clones isolated to date are HLA class I restricted and recognize epitopes in the p24 and p17 proteins. The highly conserved gag protein should be considered in the design of a vaccine with broadly cross-reactive immunity.

S.A.262 RESISTANCE TO HIV REPLICATION IN LYMPHOCYTES OF ASYMPTOMATIC HIV CARRIERS

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Objective: To evaluate anti-viral defense mechanisms of HIV-infected individuals, we assessed viral replication in their peripheral blood lymphocytes (PBL), following exogenous HIV infection *in vitro*.
Methods: PBL of HIV-1-infected individuals at various stages of disease were exposed to HIV-1 *in vitro*, then cultured in the presence of interleukin-2. Viral replication in these lymphocytes was evaluated by measuring reverse transcriptase activities in the supernatants and detection of extrachromosomal HIV-1 proviral DNA in the cells.
Results: PBL of asymptomatic carriers tested, following exogenous infection with HIV-1, did not produce significant amounts of reverse transcriptase, nor accumulated unintegrated proviral DNA. This was a striking contrast to PBL of uninfected individuals, which efficiently supported HIV-1 replication. PBL of asymptomatic carriers lost the resistance when $CD8^+$ lymphocytes were removed from the culture. Such resistance to viral replication was not seen in PBL of patients with progressed disease.
Conclusion: These observations suggest that certain populations of $CD8^+$ lymphocytes of asymptomatic HIV-1-carriers operate on the target cells in PBL to block HIV-1 replication. Although the precise mechanism(s) of how $CD8^+$ lymphocytes induce such interference is still to be defined, the effect of these cells could play an important role in the maintenance of the period of disease latency.

S.A.263 RELATIONSHIP BETWEEN CD8+ CELL ANTIVIRAL ACTIVITY AND CLINICAL STATUS

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Objective: To determine if the extent of CD8+ cell antiviral activity in HIV-infected individuals correlates with their clinial status.
Methods: Using immunomagnetic beads to purify T cell subpopulations, CD8+ cells from 25 asymptomatic (Asym), 6 ARC and 6 AIDS patients were assayed for their ability to inhibit HIV replication in autologous CD4+ cells, as measured by reverse transcriptase (RT) assays. In each subject, the antiviral activity was assessed by titrating input CD8 to CD4 ratios ranging from 4:1 to .25:1.
Results:

Number of Individuals Exhibiting CD8+ cell Antiviral Activity* at the Indicated CD8:CD4 Ratios

	10	25	5	1	2	4
Asymp	11	6	7	1	0	0
ARC	3	2	0	1	0	0
AIDS	0	0	1	4	1	0

*The extent of CD8+ cell activity is reflected by the lowest ratio giving ≥90% reduction of RT activity compared to control.

68% and 83% of the asymptomatic individuals and ARC patients, respectively possess CD8+ cells which suppress HIV replication from their own autologous CD4+ cells at a ratio as low as .25:1, whereas none of the AIDS patients possess CD8+ cells which can control at this ratio. In 83% of the AIDS patients, a CD8:CD4 ratio of 1:1 or greater was required to achieve the same degree of CD8+ cell antiviral activity.
Conclusion: AIDS patients exhibit 1/4 to 1/2 the CD8+ cell antiviral activity as do the asymptomatic or ARC patients studied. This finding suggests that this type of antiviral control diminishes as one progresses to AIDS and could be an important feature of the pathogenic process.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.264 LACK OF CLEARANCE OF A CTL EPITOPE *IN VIVO*.

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Objectives : To analyse whether a HLA-B27 restricted HIV-1 *gag* epitope could be cleared by immune responses *in vivo*.

Methods : DNA encoding a HLA-B27 restricted *gag* epitope was amplified by PCR directly from the PBMC DNA of four HLA-B27 HIV-1 seropositives. PCR products were cloned and twenty clones sequenced. Cytotoxic T-cell activity from two patients was tested using a HLA-B27 transfected P815 clone and a synthetic target peptide. Activity was measured by the ^{51}Cr lysis assay.

Results : All four patients harboured proviruses encoding the restricted epitope as the major form. Yet these individuals had active CTL responses to the target peptide *in vitro*.

Conclusions : These data show that despite the presence of CTL activity *in vitro* the target sequences could not be successfully eliminated *in vivo*. This may indicate that resting lymphocytes harbouring HIV proviruses are not cleared.

S.A.265 CYTOTOXIC T LYMPHOCYTE-MEDIATED LYSIS OF rM-CSF-TREATED MACROPHAGES EXPRESSING HIV ANTIGENS

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Objective: To assess cytotoxic T lymphocyte (CTL) activity in HIV seropositive homosexual men against rM-CSF-treated macrophages expressing individual HIV antigens.
Methods: Monocytes from peripheral blood mononuclear cells (PBMC) were cultured in vitro in Teflon-coated jars with 1000 U/ml of rM-CSF. After 5 days, monocyte-macrophages were infected for 18 hr with recombinant HIV-vaccinia viruses (courtesy B. Moss) and used as target cells in ^{51}Cr-release assays. Effector cells were freshly-isolated autologous PBMC or PBMC stimulated for 5 days with UV-inactivated HIV antigen plus rIL-2.
Results: Freshly-donated PBMC mediated HIV-specific lysis of 14.2 ($\pm$3.3, n=8), 18.7 ($\pm$5.4, n=5) and 30.2 ($\pm$5.1, n=8) against gag, pol, and env expressing autologous macrophages, respectively. The CTL were $CD3^+$ $CD8^+$ $CD16^-$ and MHC Class I-restricted. HIV antigen-stimulated PBMC also lysed autologous macrophages expressing HIV antigens; both $CD8^+$ and $CD4^+$ CTL were present as well as $CD3^+$ $CD16^-$ CTL that could not be depleted by either OKT4 or OKT8. When autologous macrophages expressing HIV antigens were cultured with rM-CSF, their susceptibility to CTL-mediated lysis was 8-20 fold greater than macrophages cultured without rM-CSF.
Conclusions: Macrophages expressing HIV specific antigens can be lysed by in vivo circulating and in vitro antigen-stimulated CTL. Incubation of macrophages with rM-CSF greatly enhances their susceptibility to CTL-mediated lysis. We are currently examining the mechanisms of enhanced lysis as well as CTL populations generated during HIV antigenic stimulation.

S.A.266 HIV SPECIFIC LYMPHOCYTE PROLIFERATION TO AUTOLOGOUS CELL LINES INFECTED WITH RECOMBINANT VACCINIA VIRUSES (rVAC) EXPRESSING HIV PROTEINS.

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Objective: To generate lymphocyte proliferative responses to HIV proteins expressed by rVAC infected, autologous cell lines.
Methods: Six rVAC were utilized, producing HIV gp160, p24, reverse transcriptase, tat, or rev proteins to infect autologous Epstein-Barr virus (EBV) transformed B cell lines. Stimulator cells were prepared by infecting EBV lines with rVAC, followed by fixation and washings. Five and 7 day proliferation experiments were done with 2 X 10^5 peripheral blood mononuclear cells (PBMC) and 5 X 10^4 stimulator cells per culture well. Titration of stimulator cells were performed. Indomethacin at 10^{-6}M was added to parallel cultures to inhibit prostaglandin production.
Results: PBMC from 3/5 HIV+ asymptomatic and 0/3 HIV- individuals responded to one or more of the rVAC. Responses appeared at day 5 and increased by day 7 of culture. Titration of stimulator cells showed increased responsiveness at the lowest dose (25,000) for all 5 antigens. Indomethacin slightly enhanced HIV specific responses in 2 HIV+ subjects. Responses to gp160 rVAC were the highest in all three positive subjects. High background stimulation to the control rVAC was seen in several subjects and may represent responses to vaccinia or EBV.
Conclusions: Stimulation of lymphocytes with rVAC infected autologous B cell lines provides a method for increasing numbers of HIV antigen reactive cells and may prove valuable in antigen specific T cell cloning (work in progress).

Virus-Specific Humoral Immunity

S.A.267 HUMAN MONOCLONAL ANTIBODIES TO HIV GLYCOPROTEINS 120 AND 41

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Objective. In Vitro HIV neutralization and antibody dependent cellular cytotoxicity (ADCC) studies have demonstrated type-specific and group-specific immune responses in humans and chimpanzees infected with HIV. Our goal is to characterize antibodies and viral sites involved in these anti-viral responses.
Methods: Novel cell lines producing human monoclonal antibodies (mabs) to HIV proteins were produced by cell-driven Epstein-Barr virus transformation of B-lymphocytes obtained from healthy HIV seropositive donors. Cross-reactive mabs were screened by enzyme linked immunoassay (EIA) and functionally assessed for HIV neutralization, ADCC, and infected cell surface binding. Antibody specificity was determined by radioimmune precipitation (RIP) of HIV polypeptides.
Results: 1) Fifteen human cell lines secreting anti-HIV mabs have been generated and stabilized. 2) 15/15 mabs cross-react with diverse HIV-1 isolates. 3) 15/15 mabs specifically recognize HIV envelope glycoprotein (gp) 41 (8/15) or gp 120 (7/15) by RIP. 4) 2/5 gp 41 and 6/7 gp 120 mabs bind to the HIV infected cell surface. 5) One gp 41 and one gp 120 mab mediate ADCC. 6) Several of the mabs demonstrate weak neutralizing activity in HIV plaque reduction assays.
Conclusion: We are currently purifying antibody from these cell lines in order to further investigate their immunotherapeutic potential.

S.A.268 PRODUCTION OF MN NEUTRALIZING MONOCLONAL ANTIBODIES

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Monoclonal antibodies capable of neutralizing one or more HIV-1 field isolates have been produced following immunization with synthetic peptides derived from the principal neutralizing determinant (PND) of the V3 loop.

Research efforts at Repligen Corporation have identified the sequence of the PND from HIV strains prevalent among a random sample of seropositive individuals in the United States. These sequences demonstrate a high degree of variability. Serological analysis of the immunogenicity of synthetic peptides based on the sequence of PND regions has enabled the selection of appropriate peptides as immunogens in the production of monoclonal antibodies.

Monoclonal antibodies have been produced which neutralize HTLV-III_{MN}. Ability to neutralize has been confirmed in both an assay in which a recombinant vaccinia virus expressing the gp160 of MN is used to induce syncytia in CEM cells, and in an assay in which HTLV-III_{MN} replicates in CEM-SS cells. The epitopes recognized by these monoclonal antibodies have been mapped by direct binding and competition analysis.

S.A.269 A HUMAN MONOCLONAL ANTIBODY WHICH RECOGNIZES THE V3 REGION OF HIV gp120 AND WHICH NEUTRALIZES HTLV-III MN

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We describe a human IgG_1 monoclonal antibody (N701.9b) derived by EBV-transformation of B cells from an HIV-seropositive asymptomatic donor. This antibody recognizes the principal neutralizing domain (PND) of gp120 of the MN strain of HIV, as determined both by binding to PB-1 fragment of MN gp120 and to synthetic peptides corresponding to various regions of the PND of MN. Furthermore, we show that antibody neutralizes the MN, but not the IIIB or RF strain of HIV in two different assays. These findings demonstrate that the V3 region of gp120 is a neutralizing epitope in natural HIV infection in humans and confirm that a segment of this region containing at least 7 amino acids is the active site to which neutralizing antibody binds. The potential clinical utility of this antibody is discussed.

S.A.270 OPTIMIZING PRODUCTION OF HUMAN MONOCLONAL ANTIBODIES TO HIV-1

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Objective: To examine the optimal conditions for establishing cell lines producing human monoclonal antibodies (HumAb) against HIV-1.
Methods: Peripheral blood lymphocytes (PBL) derived from 5 asymptomatic HIV seropositive individuals were transformed with Epstein-Barr virus (EBV). Cultures producing antibodies to HIV were expanded and cloned several times on irradiated GK5 cells by doubling dilution (5000 to 10 cells/well). Simultaneously, the same lymphoblastoid cells from expanded cultures were fused with heteromyeloma SHM-D33; anti-HIV positive hybrids were cloned at 100 to 1 cell/well. The specificity of the HumAb was tested by ELISA, Western blot and radioimmunoprecipitation.
Results: The immortalization of PBL by EBV alone gave rise to 2 cell lines synthesizing HumAb but when EBV-transformed cells were fused to SHM-D33, 5 hybrid lines making HumAb were obtained. All cell lines have been in culture for 6-12 months.

Pt. Code	Stable EBV lines	Stable Hybrids	Isotype	Specificity
167	None	167-7-D	IgG1λ	gp41
181	None	181-1-D	IgG2λ	gp41
240	None	240-1-D	IgG1k	gp41
238	238-2	238-2-D	IgG1λ	p24
241	241-1	241-1-D	IgG1λ	p24

Conclusion: EBV transformation of PBL followed by fusion to a heteromyeloma appears to be the most effective method for the generation of HumAb to HIV-1 and is more efficient than EBV transformation alone.

S.A.271 EPITOPE MAPPING OF NINE HUMAN MONOCLONAL ANTIBODIES TO gp41

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Objective: To map the epitope specificity of human monoclonal antibodies (mAb) to gp41 and to define, thereby, immunogenic regions of gp41.
Methods: Nine human mAb to gp41 were produced by EBV transformation of mononuclear cells from HIV-infected patients (PNAS, 86, 1624, 1989). Each mAb was labelled with biotin. Unlabelled mAb were tested for their ability to inhibit the binding to HIV-lysate of biotin-mAb. mAb were also tested for binding to synthetic peptides spanning the extracellular portion of gp41.
Results: By inhibition studies, all mAb to gp41 were found to fall into two, mutually exclusive categories. By peptide binding studies, 4 of 9 mAb were found to bind to peptides of gp41. Reactivites were noted with peptides which represented amino acids 579-604 and 644-663 (Los Alamos numbering). mAb non-reactive with peptides are thought to possess conformational or discontinuous epitopes. On the basis of the inhibition and peptide studies, two epitope clusters were identified, located in the regions of the two peptides noted above. mAb to these two epitope clusters could easily be distinguished by their ability or inability to react with the p121 peptide from Centocor (AA 560-641).
Conclusions: Using human mAb to gp41, two immunogenic regions have been mapped to the extracellular portion of gp41: one, mapping around the disulfide bond at position AA 598-604 and the other, in the vicinity of AA 644-663, located in an extended glycosylated region containing an alpha helical portion near the membrane-spanning domain.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.272 GENERATION OF TWO ANTI-HIV P24-kDa HUMAN IgG MONOCLONAL ANTIBODIES (HuMAbs).

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Objective: To evaluate the binding characteristics of two anti-p24 HuMAbs.
Methods: HuMAb were generated by fusion of HIV sero-positive patient lymph node lymphocytes with the P3X63AgU1 murine myeloma cell line. Screening and subcloning of hybridomas was done using ELISA with HIV lysates. Protein-A purified supernates were characterized by Western blot (WB), radioimmunoprecipitation (RIP), indirect cell surface immunofluorescence (IF) and binding to recombinant HIV antigens.
Results: Two anti-p24 HuMAb producing hybridomas were generated. One (U7-2), recognized HIV p24 by WB, RIP using HIV-IIIB, MN, and RF and also recognized recombinant p24 (rp24). The other (V7-8), recognized both p24 and gp120 in WB and also rp24 and rgp120 in dot blot. In flow cytometry, both V7-8 and affinity purified anti-p24 pooled polyclonal antibody (αp24 PCA) bound to HIV infected cell surfaces while U7-2 did not. αp24PCA also showed the same gag/env cross reactivity in WB, RIP and dot blots.

AB	WB	RIP	IF	IgG	rp24	rl20
U7-2	p24,p55	p24	-	IgG1	+	-
V7-8	p24,p55,gp120	p24,gp160	+	IgG3	+	+
α-p24 PCA	p24,p55,gp120	p24,gp160	+	N/A	+	:

Conclusion: We have characterized a HuMAb with cross-specificity to both gag and env gene products and demonstrated that HIV positive human sera possesses similar characteristics.

S.A.273 VARIABLE REGION GENE UTILIZATION AND MUTATION IN A GROUP OF NEUTRALIZING MURINE MONOCLONAL ANTI-HIV ANTIBODIES

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Objective: We studied 4 neutralizing murine monoclonal antibodies that are specific for the LAV strain of HIV (Thomas et. al., AIDS 2:225.1988). Our goal was to identify the molecular structure of these antibodies in order to determine the role of somatic mutation in the generation of high affinity neutralizing anti-HIV antibodies.
Methods/Results: The 4 antibodies are all of the IgG1 subclass: 3 use a kappa light chain; one a lambda light chain. The structure of these antibodies was elucidated by sequencing their heavy (VH) and light chain (VL) variable regions from messenger RNA. The lambda antibody uses the L1 VL gene and a J558 VH gene. All 3 of the kappa antibodies use JK2 and the same VK21 VL gene. The two highest affinity kappa antibodies both use JH2, an identical D gene, and the same 3660 VH gene, SB32. The other kappa antibody uses JH4 with a truncated 7183 VH gene.
Conclusions: Our data suggest that somatic mutation occurs in both VH and VL genes. The VH used by our two highest affinity antibodies has also been identified in another murine monoclonal antibody that neutralizes HTLV-111B (Liou et. al., JI 143:3967.1989). This suggests that the neutralizing response to HIV may involve specific conformational epitopes which elicit a highly restricted antibody response regardless of viral strain specificity. This may provide potential strategies for generating passive antibody therapies for HIV infection or for the development of vaccines.

S.A.274 CHARACTERIZATION OF ANTI-HIV-2 CORE PROTEIN MONOCLONAL ANTIBODIES WHICH ARE CROSS-REACTIVE WITH HIV-1

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Objective: To produce monoclonal antibodies (MAb)which are cross-reactive with HIV-1 and HIV-2 core proteins which may be useful in mapping conserved and divergent epitopes.
Methods: BALB/c mice were immunized with HIV-2 viral lysate. Protein-A purified antibody from thrice-cloned hybridoma cells were tested on ELISA plates coated with either HIV-1 or HIV-2 viral lysate, or recombinant HIV-1 p24 core protein. Western blot analysis utilized Epitope HIV-1 and HIV-2 Western blot strips. HIV-1 infected H9 or HUT-78 cells were stained with the MAb following fixation with acetone:methanol.
Results: Seven MAb were produced which were reactive with HIV-2 core protein. Four of these MAb were found to be cross-reactive with HIV-1 core protein (p18 and p24) by both ELISA and Western blot analysis. Multiple bands were developed on HIV-2 Western blot strips with all seven MAb. In addition, these MAb were reactive with a recombinant HIV-1 p24 core protein fragment (19 Kd). Lastly, only the cross-reactive MAb were capable of staining HIV-1 infected H9 or HUT-78 cells.
Conclusions: MAb were produced which recognize conserved and divergent epitopes on HIV-1 and HIV-2 core proteins. These MAb will be useful in future mapping studies of these proteins.

S.A.275 IDIOTYPIC EVIDENCE OF gp41-gp41 BINDING SITES WITH NEUTRALIZATION POTENTIALS

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Objective: In order to investigate the potentials of an idiotypic vaccine, we have raised antiidiotypic responses against a neutralizing anti-gp41 monoclonal antibody in mice and rabbits and analysed them in terms of specificity and neutralizing activity.
Methods: We evaluated the neutralizing activity (inhibition of syncythium formation of MOLT-3 cells) of a panel of 12 monoclonal antibodies raised against a gp41-beta-galactosidase fusion protein (H3, residues 601-755). Only one antibody, A2E4 (IgM) was neutralizing. Polyclonal Ab2 responses were raised in mice and rabbits.
Results: Ab2 sera proved to contain antiidiotypic antibodies which are, at their turn, neutralizing and reactive with gp41. The fine mapping of the epitopes involved is in course, but preliminary data indicate that the monoclonal Ab1 and the polyclonal Ab2's react with different regions of the external part of gp41. No cross-reactivity with human antigens could be demonstrated.
Conclusion: The results suggest that antiidiotypic antibodies could mimick an interaction between distinct gp41 sites with neutralization potentials. Should this kind of antibody responses be elicitable in man, this finding could be a starting point for the development of an idiotypic vaccine.

S.A.276

NEUTRALIZATION EPITOPES ON HIV-1 APPARENTLY INCLUDE SPECIFICITIES OUTSIDE VARIABLE REGION 3.

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Objective: To determine whether neutralization of HIV-1 by human sera is mediated only by antibodies directed against variable region 3 (V3) epitopes.
Methods: Neutralizing antibodies (NA) were measured using a syncytial focus inhibition test employing the IIIB and MN strains of HIV-1. Synthetic peptides corresponding to the V3 region of IIIB and MN were prepared by automated solid phase synthesis, purified by high performance liquid chromatography and adapted for use as antigens in ELISA and for blocking assays.
Results: The NA titers of the 10 sera tested varied from 1:16 to 1:512 against the IIIB strain, and 1:3,200 to 1:512,000 against the MN strain. The IIIB and MN V3 peptides were bound by 4/10 and 10/10 sera, respectively, in ELISA. Titers ranged from 1:1,000 to 1:10,000 against IIIB peptide, and from 400 to 1:102, 400 against the MN peptide. Inhibition of NA against MN by addition of MN peptide to sera was complete in four, partial in five, and absent in one case. There was no significant correlation between MN and IIIB ELISA titers, between MN ELISA and NA titers, or between MN or IIIB ELISA or MN NA and degree of peptide blocking of MN NA. There was a strong correlation between NA titer against MN in the presence of optimal blocking concentrations of peptide and the NA titers of unblocked sera against IIIB. MN peptide did not block IIIB NA.
Conclusions: The V3 domain is an important neutralization epitope on HIV-1, but a cross-reactive epitope exists which is commonly recognized and is apparently outside the V3 region.

S.A.277

PERIODIC CHANGES IN NEUTRALIZATION EPITOPES OF HIV-1 INVOLVE VARIABLE REGION 3.

Vujcic, Luba; Carrow, E.; Seamon, K.; Quinnan, G. CBER, FDA, Bethesda, MD, USA.

Objective: To determine whether changes in HIV-1 neutralization epitopes occurring periodically during infection are related to alterations occurring in variable region 3 (V3).
Methods: Sequential serum samples from five homosexual men collected over a 1.25-4 year period were tested for neutralizing antibodies (NA) and antibodies binding to synthetic peptides representing V3. NA were tested in a syncytial focus inhibition assay using nine strains of HIV-1. Peptides homologous to the V3 regions of the IIIB and MN strains of HIV-1 were used. Peptides were synthesized by solid phase techniques, purified by high performance liquid chromatography, and adapted for use as antigens in ELISA.
Results: There were nine time periods during which fourfold or greater increases in NA titers against one or more strains of HIV-1 were observed. There were increases in titer against 1-6 strains per response, including the MN strain in three cases, the IIIB strain in four cases, and neither strain in four cases. Increases in binding to the IIIB V3 peptide occurred coincident with (twice) or during the following sampling interval (twice) in association with all four NA responses recognizing IIIB. Increases in MN peptide binding occurred coincident with increases in NA against MN in 2/3 cases. No other increases in binding of these peptides were observed during periods of NA response to other strains.
Conclusion: Periodic antigenic variation of neutralization epitopes of HIV-1 occurs during chronic infection, and these changes appear to be associated with changes in the V3 region.

S.A.278

CHANGES IN A NEUTRALIZATION DOMAIN OF SEQUENTIAL ISOLATES IN EXPERIMENTAL AND NATURAL HIV INFECTION

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Objective: To study changes in the coding region (gp120 V3) for a neutralization epitope of non-syncytium-inducing (NSI) and syncytium inducing (SI) isolates.
Methods: Sequential samples from 2 men were studied in whom HIV-1 virus changed from NSI to SI virus. From these, DNA was obtained both before and after co-cultivation. Two chimpanzees were infected with an inoculum grown from an SI stock (IIIB) consisting of HXB2, HXB3 and HX10 infectious clones. This stock was also studied after passage in both human and chimpanzee cells. In all cases, the V3 domain (approx. 105 nucleotides) was sequenced.
Results: Sequences from cocultivated material of 7 samples from 1 man showed a distinct change from the NSI (sample 1 to 4, yearly rate 2.5% change) to the SI virus (samples 5 to 7, yearly rate 0.7%). Between samples 4 and 5 the phenotype shifted (yearly rate 23%). The 3 samples available from the other man showed a comparable change. When clustered, the SI and NSI sequences were distinct from each other. Sequences before and after co-cultivation were similar in 3 out of 4 cases studied. Chimpanzee V3 sequences from 6, 16 and 32 weeks post infection, diverged from the inoculum by 3 to 4 nucleotides of 108, parallel to escaping V3 specific antibodies, and 0-2 nucleotides from each other. Cluster analysis lumped the inoculum with the in vitro passaged sequences and HXB3, possibly reflecting speed of growth, whereas the in vivo passaged sequences resembled HX10, HXB2 and the IIIB stock.
Conclusion: The V3 domain of SI virus does not change faster than that of NSI virus. Transition from NSI to SI is reflected in an abrupt change in the V3 domain. Genomes analyzed prior to culture show the same pattern as those analyzed after culture. In experimental infection the highly passaged inoculum itself resembled sequences resulting from in vitro passage of the IIIB stock. Sequences resulting from the in vivo experiment became similar to the stock from which the inoculum was grown.

S.A.279

INDIVIDUAL SELECTION FOR GENETIC VARIANTS OF THE V3 MAJOR NEUTRALIZING DOMAIN

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Objective: To examine the genomic variation in the coding region for the major neutralizing domain gp120 V3 (amino acids 296-331).
Methods: Six newborn children infected by a single plasma donor and 2 non-related individuals who suffered from acute HIV-infection were studied. Polymerase chain reaction (PCR) was performed on PBL's and cloned PCR products were sequenced.
Results: Upon acute infection a very homogeneous sequence population was found. In one case, in which the transmitter was known, this sequence was identical to the most dominant strain of the transmitter. In the group of children a large diversity of V3 sequences was found within each child and between them. All of these resembled the SC-isolate and were less MN-like. Distance to the donor sequence (as examined 4½ year after blood donation) increased with time. At individual amino acids (308, 316 and 319) the inter-child variation exceeded the variation found in sequential samples of 1 child. The reverse also occurred for other amino acids. As of 1989 (8 years after infection) 1 child is still healthy, 3 developed a persistent lymphadenopathy and 2 died with AIDS. The number of unique amino acid changes in the 2 children who progressed to AIDS was as low or lower than in the others. Nucleotide substitution rate of the V3 region was highest shortly after infection and was lower and comparable to the adjacent 5' region in the children, who were studied 1 to 8 years following infection.
Conclusion: Genetic variation of the V3 coding region is host-specific and might be determined early in infection. Considering that the substitution rate of specific amino acids is different inter- and intra-individually, population studies based on sequences should be feasible.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.280 BIOLOGICALLY FUNCTIONAL HIGH AFFINITY/AVIDITY ANTIBODIES TO THE HIV GP120 PRINCIPAL NEUTRALIZING DOMAIN (PND).

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Objective: To determine the research and clinical utility of an immunoassay which biases detection of HIV anti-gp120 PND to the higher affinity/avidity subpopulation. Methods: Plates were coated with synthetic peptides contains HIV env amino acid sequences 307-319 derived from 24 HIV isolates. Each peptide was coated at decreasing concentrations from 5ug-500pg per well. Bound antibodies were detected by the addition of an enzyme labeled conjugate.
Results: Various mouse monoclonal and goat polyclonal antibodies directed toward the PND showed strong immunoreactivity at high coating concentrations. Only the antibodies binding at low antigen concentrations, showed HIV neutralization ability. In contrast, HIV-inoculated chimpanzees and HIV-infected humans showed broad neutralizations, in addition to those predicted by the assay.
Conclusion: The PND ELISA described here biases antibody detection to the high affinity population. We hypothesize that it is this population of antibodies responsible for virus neutralization. The site directed serology, combined with the antigen limitation provides a rapid quantitative assessment of biologically functional antibodies. Assay limitations due to neutralization domains outside the PND domains as well as non-linear antibody specificities may complicate the predictive quality of the assay. The potential utility of the PND ELISA in pediatric diagnosis, vaccine development, and immunotherapeutics will be discussed.

S.A.281 GEOGRAPHICALLY DIVERSE ANTIBODY RESPONSES TO THE VARIABLE REGION 3 (V3) NEUTRALIZING EPITOPE OF THE HIV-1 ENVELOPE

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Objective: To compare strain-specific neutralizing antibody (NA) and binding antibody (BA) responses to an antigenically variable epitope on the envelope glycoprotein of HIV-1 in sera from Africa and the Americas.
Methods: At least 20 sera each from the U.S., Zaire, Haiti, and Brazil were titered for NA to HIV-1 strains IIIB and MN in a MOLT-3 syncytium inhibition assay, and for BA to a sequence in the V3 region of the HIV-1 envelope by ELISA utilizing HPLC-purified synthetic peptides corresponding to IIIB and MN.
Results: Overall there was a higher frequency of peptide BA reactivity to MN (88%) compared to IIIB (38%) and higher NA titers to MN (median 1:1280) than IIIB (median 1:64). Results of NA and BA titers are summarized below.

	% WITH NA		% WITH BA	
	MN	IIIB	MN	IIIB
U.S.	100	96	95	42
ZAIRE	100	100	96	50
HAITI	100	100	95	62
BRAZIL	N.D.	85	72	15

Conclusions: The prevalence of NA to either virus is higher than BA directed against the homologous V3 epitope, suggesting that BA to this epitope probably account for some but not all neutralization of HIV-1. Sera from all three continents had a high frequency of reactivity to the MN V3 region.

S.A.282 ANTIGENIC DRIFT OF HIV-1

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Objective: Serological and molecular characterization of HIV-1 mutants resistant to neutralization by gp120 V3 specific monoclonal antibodies and study of the ability of broadly neutralizing human sera to neutralize such HIV-1 mutants.
Methods: HIV-1 strains were isolated from PBLs of 2 chimpanzees at 6, 16 and 32 weeks post infection with a HIV-3B stock. Neutralization experiments were performed with the HIV-1 infectious clones HX10, HXB2 and HXB3, with the in vivo passaged viruses and with the reference strain MN. The gp120 coding sequence of the chimpanzee viruses and of the inoculum stock virus was determined.
Results: Monoclonal antibody to the carboxyl terminus of the KSIRIQRGPGRAFVT sequence neutralized HXB2 or HXB3 less than HX10 and none of the in vivo passaged isolates. Monoclonal antibody to the amino terminus of this sequence showed the same. Monoclonal antibodies to the mid-portion of the sequence neutralized all infecting clones, but also later in vivo passaged isolates, although at much lower titres than the inoculum. Sequential sera of seroconverters that develop neutralizing antibodies to MN and 3B at seroconversion, showed the first titres (10-20) of antibodies neutralizing the in vivo chimpanzee passaged isolates more than a year later (HX10 titre 160, MN titre 320). Sequence analysis of the gp120 coding sequence of the neutralization resistant variants showed non-silent mutations in the V2, C2 and V3 domain of gp120, relative to the sensitive parent virus. The sequence of the monoclonal antibody binding domain was the same for neutralization sensitive and resistant mutants.
Conclusion: The tip of the loop composing the V3 neutralization domain remains accessible to neutralizing antibodies over a longer period of time relative to the stem. This effect appears to result from sequence changes in the envelope (V2, C2?) outside the antibody binding domain, indicating conformation dependence. The experiments with human sera indicated V3-dependent antigenic drift, as we have previously shown for experimentally infected chimpanzees.

S.A.283 CHARACTERIZATION OF NEUTRALIZING ANTI-gp41 ANTIBODIES IN HIV-POSITIVE SERA

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Objective: A recombinant gp 41-beta-galactosidase fusion protein (H3, residues 601-755) induces neutralizing antibodies in both mice and rabbits. Human antibodies with similar specificity were searched for in HIV-positive sera which exhibited neutralizing activity.
Methods: HIV-positive sera were screened for both anti gp-41 antibodies and neutralizing activity (inhibition of syncythium formation of MOLT-3 cells). High-titer sera were preadsorbed on solid phase beta-galactosidase and then affinity purified on H3-Sepharose.
Results: High-titer anti-gp 41 antibodies are recovered from H3-Sepharose columns. Preliminary experiments have shown that, at least in some cases, such affinity purified antibodies also exhibit syncytium neutralizing activity.
Conclusion: This kind of analysis allows to discriminate, among neutralizing sera, those with specificity towards gp 41 neutralizable epitopes. and therefore to study a possible correlation between such antibodies and disease progression. Further characterization of such antibodies (epitope mapping and idiotypic restriction) could lead to the development of an idiotypic vaccine.

S.A.284 ANALYSIS OF OLIGOCLONAL ANTIBODIES IN CEREBROSPINAL FLUID AND SERUM SAMPLES OF PATIENTS INFECTED WITH HIV.

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Objective: To determine the specificity of oligoclonal antibodies in cerebrospinal fluids and serum samples of patients infected with HIV.
Methods: The specificity of CSF and serum anti-HIV was determined using western blot analysis and radioimmunoprecipitation. Immunoprinting techniques were used to determine the specificity of oligoclonal bands seen by isoelectric focussing.
Results: Samples from 20 asymptomatic patients and 24 symptomatic patients were investigated for intrathecal IgG synthesis. The majority of patients (both asymptomatic and symptomatic) showed a higher titre of HIV antibody per unit of total IgG in CSF than in serum. CSF and serum from 12 patients (AIDS and ARC) and 10 assymptomatic patients were analysed to determine the specificity of oligoclonal bands against RT, gp160 (env), and p-24 (gag) antigens. Oligoclonal viral-antigen-specific antibody could be demonstrated in CSF from all patients through the reactivity in serum and CSF was inconsistent for env and gag proteins. All specimens from 10 asymptomatic patients reacted consistently with RTAg.
Conclusion: The presence of oligoclonal antibody is regarded as an useful indicator of early events in immune response. Specific oligoclonal antibodies against RT antigen are quite consistent in all asymptomatic patients and offer an indicator for the investigation of CSF antibody changes in the logitudinal study of patients.

S.A.285 QUANTITATIVE HUMORAL RESPONSE TO HIV ANTIGENS IN UGANDAN SUBJECTS INFECTED BY HIV-1.

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Objective: To study the quantitative immune responses to HIV gag and env antigens and the prevalence of p24 antigenaemia (p24Ag) at different clinical stages of HIV-1 infection in Uganda.
Methods: 1092 cross-sectional sera from Ugandan subjects infected by or at risk of HIV-1, and at different clinical stages of infection, were examined for antibodies to p24(gag) and gp120(env) using in-house assays and recombinant antigens; antigen capture assays were developed using African HIV isolates. P24 antigen was sought by DuPont assay; immune complexes were prepared, disrupted, and examined for presence of viral antigens.
Results: Anti-p24 abs are maintained in 93% of all subjects, irrespective of clinical status; quantitation of anti-p24 shows that AIDS patients have significantly lower median anti-p24 antibody titres compared to asymptomatic subjects (p=0.05). P24Ag was found in 13/261 (5%), and no increase seen in immune complexes.
Conclusion: Although p24Ag and complete loss of anti-p24Ab is uncommon in African sera, this study shows a reduction of anti-p24 titre with more advanced clinical stage. Neither presence of non-specific anti-p24, nor use of African HIV isolates, explains the African serological pattern, which may reflect shorter duration of HIV infection before stage IV disease occurs.

S.A.286 QUANTITATIVE HUMORAL RESPONSES TO gag AND env PROTEINS AT SEROCONVERSION DEFINE OUTCOME OF HIV INFECTION.

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Objective: To quantify the humoral response to HIV proteins at sero-conversion, and to examine the relationship between the titre and function of the antibodies to clinical outcome at 84 months.
Methods: 88 HIV seroconverting haemophiliacs were examined by ELISA assays for titre of antibody to p24(gag), p27(nef) and gp120(env). Antibody function was examined by HIV neutralisation and blocking, srCD4/gp120 binding inhibition and for FcR mediated enhancement. Subjects were classified clinically by CDC stage at October, 1989.
Results: Subjects who sero-convorted with a high titre anti-p24 at first sero-positive sorum showed a prolonged survival time by the Kaplan-Meyer analysis, p= 0.008. Anti-nef antibodies were non-discrimatory. High titre anti-gp120 antibodies at sero-conversion were associated with more rapid progression to AIDS p = 0.025. The high titre anti-gp120 did not correlate significantly with neutralisation titre, or with CD4/gp120 binding inhibition and there was no evidence of FcR mediated enhancement.
Conclusion: Quantitation of the primary humoral reponse to gag and env proteins at seroconversion defines the clinical outcome of HIV infection at 84 months, in haemophiliac subjects. This suggests that immune containment of HIV infection is possible, although the mechanism is unknown and breakthrough seems to occur.

S.A.287 SIGNIFICANCE OF ANTIBODIES TO MULTIPLE VIRAL COMPONENTS IN THE PREDICTION OF HIV DISEASE PROGRESSION.

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Objective: To measure the ability of antibody levels to multiple viral components to predict the development of AIDS.
Methods: The Antibody Specific Quantitation (ASQ) assay (Beckman Diagnostics) consisting of recombinant fusion proteins corresponding to p24, p31/66, gp41, p55, N-terminal gp120, C-terminal gp120 with IgG and background controls was performed on sera obtained at entry from 130 seropositive men from the San Francisco Men's Health Study, 64 of whom subsequently developed AIDS between 1 and 4 years after entry.
Results:

	Protein	AIDS	Non-AIDS	t value	p value
	p24	2.462	2.835	2.102	.037
	gp41	3.480	3.237	4.260	.000
mean	p55	2.849	3.196	2.302	.023
O.D.	p66/31	2.776	3.051	1.646	>.1
	gp120n	0.664	0.434	2.052	.042
	gp120c	1.126	1.500	2.419	.017
	IgG	2.110	1.849	5.367	.000
	Background	0.124	0.117	0.939	>.1

Conclusion: In multivariate discriminant analysis, these data were 76% accurate in predicting outcome. Low responses seen in progressors was not restricted to gag proteins but was widely represented. Paradoxically elevated responses to envelope components were seen as a result of hyperglobulinemia.

S.A.288 ANTIBODIES TO P17, AND ITS CORRELATION WITH OTHER SEROLOGICAL MARKERS DURING HIV-1 INFECTION

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Objective: To study the occurrence of antibodies to the core protein p17 in clinical samples and evaluate their significance in HIV-1 pathogenesis.
Methods: HIV-1 p17 was molecularly cloned and expressed in E.coli. An ELISA was developed for the detection of antibodies to HIV-1 p17, using the p17 as serological target in patient serum samples (284) from asymptomatic seropositive, with ARC or AIDS.
Results: Analysis of samples indicated that antibodies to HIV-1 p17 decline during the progression of disease, with decline being more significant as patients moved from asymptomatic to ARC. Patient specimen deficient in p24 antibody, but having detectable levels of antibody to p17 were positive for p24 antigen in majority of samples evaluated.

			Core Antibody Profile in p24 Ag + Samples			
Categ.	#Tested	# Ag +	$p17^+p24^-$	$p17^-p24^+$	$p17^+p24^+$	$p17^-p24^-$
ASYM	105	15	8	0	3	4
ARC	57	22	8	3	7	4
AIDS	92	53	20	1	21	11

Conclusions: Antibodies to p17 is an important and consistent serological marker for core antigens during HIV-1 infection. In addition, p17 antibody EIA could provide a confirmatory tool for western blot indeterminant samples showing reactivity to only core antigens of HIV-1.

S.A.289 IDENTIFICATION OF HIV2 TRANSMEMBRANE GLYCOPROTEIN HOMODIMER IN WESTERN BLOTTING : RELATIVE VALUE OF THIS TARGET ANTIGEN IN HIV2 ANTIBODY DETECTION

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Objective : To identify the HIV2 GP 36 homodimer in HIV2 western blots and to estimate its value for HIV2 antibody detection. This knowledge is useful to interpret serological patterns.

Methods : Western blot strips were prepared from HIV2 ROD purified stock lysate by different dissociating treatments : mild (in SDS-Page buffer) and strong (in SDS-Page buffer with heating up to 100 °C, 3 min) dissociating conditions before electrophoresis. ENV glycoproteins were identified using a panel of monoclonal antibodies. The value of each ENV target antigen with regard to HIV2 antibody capture was estimated using a panel of HIV2 positive samples and different dilutions.

Results : The panel of monoclonal antibodies used demonstrates the presence of HIV2 ENV monomeric proteins (precursor GP 140, external glycoprotein GP 125 and transmembrane glycoprotein GP 36-41) on the Western Blot strips. Moreover, GP 36 monoclonal antibodies showed the presence of smeared protein of about 80 kDa. This band was not identified when HIV2 particles were dissociated in strong conditions, and the GP 36 band was then more intense.
HIV2 positive sera presented ENV-antibodies of different avidity and specificity. GP 36 antibodies seemed to be dominant. Dilution tests showed that the GP 36 homodimer, i.e. GP 80, is an important structure antigen for antibody capture.

Conclusion : Partial denaturation of viral particles avoids total dissociation of viral structures. The band developed at about 80 kDa should correspond to the GP 36 homodimer. This dimeric protein, by its conformation, seems to be the best target for the capture of corresponding antibodies. These observations tend to favour the mild dissociating treatment for HIV2 preparation before electrophoresis.

S.A.290 EXPRESSION AND IMMUNOLOGICAL CHARACTERIZATION OF THE ENDONUCLEASE PROTEINS OF HIV-1 AND HIV-2

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Objective: To define the major immunoreactive epitopes of the HIV-1 and the HIV-2 endonuclease proteins.
Methods: 85% of the reading frame of the endonuclease protein from HIV-2 and a subclone representing the C-terminal part were cloned into the tryptophan regulated procaryotic expression vector pATH. After expression two fusion proteins of 64 kD and 41 kD, respectively, were obtained and used for the production of specific polyclonal antisersa (41 kD recombinant protein) or as antigens in the reaction with HIV-2 and HIV-1 positive sera in an immunoblot or in an ELISA. The polyclonal antisera against the C-terminal part of the HIV-2 endonuclease were also used in the reaction with recombinant HIV-1 endonuclease proteins representing the entire endonuclease, the N-terminal, central or C-terminal parts of the protein. The complete HIV-1 and HIV-2 endonuclease proteins have been synthesized as overlapping peptides and were used in a Pepscan-ELISA with human HIV-1 and HIV-2 positive sera.
Results: All HIV-2 positive sera tested (2) reacted with the recombinant HIV-2 endonuclease proteins. All HIV-1 endonuclease positive sera tested (27), which predominantly reacted with the C-terminal part of the recombinant HIV-1 endonuclease protein also reacted with the recombinant HIV-2 endonuclease proteins in the immunoblot. In an ELISA using the recombinant HIV-1 and HIV-2 endonuclease proteins the homologous reactions (HIV-1/-2 sera against HIV-1/-2 proteins) were clearly higher than the crossreactions between HIV-1 and HIV-2. The Pepscan-ELISA with HIV-1 and HIV-2 peptides has not yet been completed. Results mapping the immunodominant epitopes of the HIV-1 and HIV-2 endonuclease proteins will be presented.
Conclusions: The HIV-1 and HIV-2 endonuclease proteins share common epitopes in the C-terminal part of the proteins and might be usefull tools to detect HIV-1 or HIV-2 infections. (Supported by the BMFT grant No. II-074-88).

S.A.291 LOSS OF GP120 IMMUNOREACTIVITY UNDER REDUCING CONDITIONS.

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Objective: To determine the stability and antigenicity of gp120 by evaluating the reactivity of anti-HIV polyclonal sera to gp120 after exposure to reducing conditions.
Methods: ^{35}S-Methionine labeled HIV-IIIB and HIV-RF infected cell lysates were treated with 0.25mM, 0.5mM, 1.0mM, 5.0mM and 10.0mM dithiothreitol (DTT) for 30 minutes at 37C. The reduced HIV antigen was immunoprecipitated with 4 different anti-HIV sera and 3 different anti-HIV human IgG anti gp120 monoclonal antibodies, one of which neutralizes HIV in vitro.
Results: Three individual patient anti-HIV serum samples and one pool of anti-HIV polyclonal antibodies failed to bind to gp120 that was treated with 5mM or higher concentrations of DTT for 30 minutes in radio-immunoprecipitation analysis. However, the anti-HIV sera tested bound other HIV proteins including gp160, gp41 and p24. Three human monoclonal antibodies specific for gp120 also lost the ability to recognize reduced gp120. Both HIV-IIIB and HIV-RF strains demonstrated gp120 instability under reducing conditions.
Conclusions: This study suggests that the disulfide bonds in gp120 are critical for the secondary or tertiary structure of the molecule and that antigenicity and immunoreactivity of gp120 is lost under reducing conditions. The results also suggest that HIV gp120 subunit vaccines utilizing linear synthetic peptides may not elicit protective antibodies and that only vaccines which mimic the tertiary structure of gp120 would be effective.

S.A.292 ANTIBODIES TO A CARBOXY TERMINAL FUSIONPROTEIN (CTF) OF HIV GP41: RELATION TO CLINICAL AND IMMUNOLOGICAL FINDINGS

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Objective: To evaluate if antibodies (ab) to a fusionprotein comprising the carboxy terminal 105 amino acids (aa758-863) of gp41 behave like ab to the core protein p24 or like ab to the immunodominant epitopes of gp120/gp41, i.e. declining versus stable levels during the the course of infection.
Methods: Patients: 76 HIV ab positive homosexual males of which 53 (groups ABCD) were asymptomatic (CDC-II/III) and 23 (group E) had symptoms (CDC-IV). A was 29 with CD4 ≥500/ul and pokeweed mitogen (PWM) response ≥20% of normal controls, B 5 with CD4 <500/ul and PWM ≥20%, C 6 with CD4 ≥500/ul and PWM <20%, and D 13 with CD4 <500/ul and PWM <20%. Fusionprotein: Nucleotides 8053-8474 of the proviral clone BH10-2 were expressed as a cro-beta-galactosidase fusionprotein by a pEX expression plasmid. Antibodies were measured by standard ELISA technique, and positive reactions were two-fold titrated.
Results: Frequencies of ab to CTF in the various groups were: A=0.86, D=0.38, E=0.39, AC=0.86, BD=0.50, and ABCD=0.74. Ab to CTF were associated with CDC-II/III versus CDC-IV infection (p=0.009) and normal versus low CD4 count (p=0.015). The median CTF ab titer of A versus BCD was higher (p=0.018), as was the median titer of A versus E (p<0.001). The CTF ab titer was correlated to the levels of CD4 counts (p<0.001) and PWM response (p<0.001). Finally, the median CTF ab titer was higher among CD4 count ≥500/ul versus <500/ul (p<0.001) and among PWM response ≥20% versus <20% (p<0.001).
Conclusion: The presence and level of ab to CTF are associated with asymptomatic clinical status, normal CD4 count, and normal lymphocyte reactivity.

S.A.293 EXPRESSION AND IMMUNOLOGICAL CHARACTERIZATION OF THE NEF PROTEIN OF HIV-1

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Objective: We investigated the immunological epitopes of the nef protein of HIV-1 and determined anti-nef antibodies in human sera of AIDS patients and members of high risk groups.
Methods: We expressed the complete sequence and two different overlapping parts of the nef gene of HIV-1 by means of the procaryotic TrpE-fusion vector pATH. The entire nef gene was also expressed in the eucaryotic Baculovirus system as a fusion- and nonfusion-protein. These nef proteins were used as probes in the immunoblot (IB) to determine anti-nef antibodies in human sera.
Results: We observed specific anti-nef antibodies in 23 of 64 sera from AIDS patients. Most of the anti-nef antibody positive sera also clearly exhibited antibodies directed against HIV-1 structural proteins. However, we also found two groups of sera that harbored anti-nef antibodies but were antibody negative concerning the viral structural proteins: 1.) 4 sera from a panel of 10 persons with high risk; 2.) sera from the early stage of HIV-1 infection. These latter sera belonged to a collective consisting of 7 samples, which were taken from one patient during an intervall of 7 months before and 3 months after onset of illness. Furthermore, we compared the immunoreactivity of different procaryotic TrpE-nef fusion proteins with human sera containing anti-nef antibodies. These fusion proteins commonly shared the complete C-terminus but consisted of different 5' parts of the nef gene. We found that in opposite to the truncated nef fusion proteins the complete nef protein was always recognized and showed the strongest immunoreactions.
Conclusions: 1.) The N-terminal region of the nef protein was shown to carry major immunodominant antigenic sites. 2.) Antibodies against nef protein could be found in some cases of early stage of HIV-1 infection, although the detection of nef specific antibodies usally coinceded with the detection of antibodies directed against viral structural proteins.
These studies were supported by BMFT grant No.: 03188371.

S.A.294 ANTIGENIC DETERMINANTS SYNTHESIZES IN LIBRARY OF RANDOMLY CLONED FRAGMENTS OF HIV-1 GENOME

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Objective. To search of antigenic determinants of HIV-1 proteins.
Methods. DNA expression library of randomly selected fragments of HIV-1 genome (BH10 isolate) was constructed in E.Coli. A large segment of the HIV-1 provirus DNA was sonicated, and 150-250 bp long DNA fragments were cloned in system of expression vectors developed to obtain high yields of recombinant proteins in E.Coli. The expressed library was transferred to nitrocellulose filters and immunoscreened with sera of AIDS patients.
Results. 11 immunoreactive clones were indentified. Four clones correspond to immunodominant regions of gp41 (amino acids - 598-643, 589-665, 559-660, 561-635) and two of p24 (a.a. - 291-355, 329-395). Weaker immunogenic regions were found in p66 (a.a. - 324-390 and 425-490) and in gp41 (a.a. - 752-813, 752-811, 752-815).

S.A.295 VIRION-ASSOCIATED PROTEINS OF HIV-1

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Objective: Characterization of previously unrecognized virion-associated proteins of HIV-1.
Methods: HIV-1 infected cells were metabolically labeled with [35S]-cysteine/methionine. The radiolabeled culture supernatant was filtered through 0.45μm filters to remove cell debris and then subjected to ultracentrifugation. Virus pellets solublized in RIPA lysis buffer (0.15M NaCl/0.05M Tris-HCl, pH7.2/1% Triton X-100/1% Sodium deoxycholate/0.1% SDS) and virus-free supernatant treated with Triton X-100, were used as antigens for radioimmunoprecipitation analysis.
Results: The proteins encoded by the gag gene(p24, p17 and p7/p9), by the pol gene(p64, p53 and p34), and by the env gene(gp120 and gp41) are known to be present in most of the HIV-1 virus preparations. Radioimmunoprecipitation analysis using a panel of sera from HIV-1 seropositive and HIV-1 seronegative people revealed that there are at least 3 previously uncharaterized virion-associated proteins. They are detected only by HIV-1 positive sera, but not by HIV-1 negative sera. Antibody reactivities to some of these previously uncharacterized virion-associated proteins show temporal changes, suggesting that these proteins may not be expressed continuously during the entire course of natural infection.
Conclusion: HIV-1 viruses package at least 3 previously uncharaterized proteins that are recognized specifically by sera from some HIV-1 seropositive individuals. The coding sequences of these virion-associated proteins and their roles in viras life cycle will be addressed.

TRACK A: BASIC SCIENCE

POSTER SESSION

Humoral Immunity: Host Abnormalities

S.A.296 **PERIPHERAL BLOOD MONONUCLEAR CELLS INFECTED IN VITRO WITH HIV ACTIVATE COMPLEMENT BY AN ANTIBODY DEPENDENT PATHWAY.**

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Objective: To determine 1) if peripheral blood mononuclear cells (PBMC), infected with HIV in vitro, are capable of activating complement (C); and 2) to define the relationship between intracellular HIH antigen (Ag) expression and C activation.
Methods: Peripheral blood was drawn from healthy volunteers and PBMC isolated on ficoll-hypaque gradients. The PBMC were then resuspended in IL-2 medium and incubated overnight in the presence of PHA. The PBMC were then washed and infected with HTLV-IIIB and cultured in IL-2 medium. After 14 days of culture, the PBMC were incubated with anti-HIV antibody and C and stained for the presence of C3. The PBMC were then either co-stained for the presence of CD4 or CD8, or permeabilized with cold methanol and co-stained with monoclonal antibodies specific for p17 or p24. The cells were then analyzed by dual-color flow cytometery.
Results: When HIV-infected PBMC were incubated with anti-HIV antibody and C, increased C3 deposition could be found only on cells that were $CD4^+$ or $CD8^-$. C3 binding was not seen when irrelevant antibody was used or when uninfected PBMC were tested. C3 binding was seen primarily on intracellular Ag positive PBMC.
Conclusions: We have demonstrated that complement activation, as measured by C3 binding, occurs only on $CD4^+$ or $CD8^-$ PBMC from infected cultures. Complement activation is antibody mediated, most likely by the classical pathway. The majority of the PBMC that bound C3 contained detectable p17 or p24. However, some Ag negative cells bound C3. This may be due to Ag present at undetectable levels or differential expression of core vs. envelope antigens.

S.A.297 DETECTION OF ANTI-CORE PRODUCING B CELLS IN HIV-1 INFECTED INDIVIDUALS WITH A HIGH OR LOW ANTI-CORE SERUM TITER

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Objective: A decline in core antibody serum titer and the persistence of circulating p24 antigen are associated with disease progression in HIV-1 infected individuals. In order to define whether the decline is due to immune complex formation and/or immune dysfunction, we have analysed the *in vitro* spontaneous production of anti-core, anti-env, or anti-RT IgG of PBMC, of HIV-1 seropositive male homosexuals with different levels of serum core antibody titers.
Methods: 38 HIV-1 seropositive male homosexuals and 10 seronegative control individuals volunteered in this study. PBMC were either tested in a core-, env-, or RT-specific spot ELISA, or were cultured for ten days after which culture supernatants were collected and tested in ELISA.
Results: The data of both assays, showed that of 13 individuals with a low anti-core serum titer and circulating p24 antigen, 9 (69%) produced anti-env, 1 (8%) anti-core and 3 (23%) anti-RT IgG *in vitro*. Of 10 individuals with a low anti-core serum titer with no detectable circulating p24 antigen 8 (80%) produced anti env, 1 (10%) anti-core and 4 (40%) anti-RT IgG. Of 15 individuals with a high anti-core serum titer 8 (53%) produced anti-env, 9 (60%) anti-core and 3 (20%) anti-RT IgG.
Conclusions: The results suggest that a decline in serum anti-core titer is not merely due to immune complex formation, but also to an impaired core-specific antibody synthesis.

S.A.298 PRE B CELLS IN HIV INFECTION.

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Lab.Immunol. and *Dpt.Inf.Dis., CHU Nancy, France.

Objective: B cell abnormalities have been described in HIV infection: hypergammaglobulinemia, increased autoantibodies levels... We investigated this disorder at the B cell level by looking for peripheral pre B cells.
Methods: Density gradient centrifugation was used to isolate lymphocytes from 151 blood samples. CD3, CD4, CD8, CD11a and CD57 positive cells were enumerated by flow cytometry. Each sample were spun down with a cytocentrifuge, fixed in cold ethanol and stained with FITC monospecific anti human u chain serum (Behring, Marburg, FRG). The samples were obtained from 86 asymptomatic HIV+ patients (CDC II), 43 AIDS patients (CDC IVC1 or IVD), and 22 HIV controls. Student T test and linear regression were used to compare membrane and cytoplasmic (Cμ) labellings of the cells.
Results: Cμ+ cells were found in 46% of the patient's samples, ranging between 1 and 30% (mean 2.6 +/ 5%) of PBL. No significant difference was observed between the control group, asymptomatic patients and AIDS patients (respectively 1.90, 2.15, 3.60). AIDS patients were subdivided in 2 groups: group 1 with less than 6% Cμ+ cells, group 2 with 6% or more. In both groups, absolute number of lymphocytes /mm3 (1190, 1576), CD3+ (830, 1134), CD8+ (34, 39), and CD57+ (273, 470) cells were positively correlated with Cμ+ cells. No correlation was observed between Cμ+ cells and CD4+ cells. In group 2 the number of lymphocytes, CD3, CD8, and CD57+ cells were significantly higher than in group 1.
Conclusion: Adding to the well known mature B cells dysregulations, our data indicate a significant increase of pre B cells in peripheral blood of HIV+ patients. Moreover, these pre B cells in AIDS patients are positively correlated with a persistant high level of lymphocytes, and could be a positive prognosis factor.

S.A.299 **FAILURE OF ADCC TO PREDICT HIV ASSOCIATED DISEASE PROGRESSION OR OUTCOME IN A HAEMOPHILIAC COHORT**

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Antibody dependant cell mediated cytotoxicity (ADCC) has been reported in HIV infected patients. A strong ADCC response against HIV is thought to be necessary for effective control of disease and therefore ADCC epitopes may be necessary for an effective vaccine. However ADCC responses can also be deleterious. In order to assess the functional significance of the ADCC response in HIV infection, 24 of 40 HIV exposed haemophiliac patients who all became infected at the same time (early 1984) with the same blood products were monitored for clinical and serological responses including ADCC. During this time 9 patients advanced to CDC stage 4, 3 to CDC 3, and 13 to CDC 2. Using a highly sensitive and specific assay (Sinclair et al,AIDS 1988,2,465-472) serial samples were studied for the mean specific lysis and mean titre of ADCC against isolates of HIV manifesting both clonal and polyclonal characteristics. There was no significant difference between the asymptomatic and progressive disease patients by any of the ADCC assays, and neither was there any predictive value in any group of patients. The only patients who gave lower titres as disease progressed were 2 who developed lymphoma.

This study questions the need to include ADCC epitopes in HIV vaccines, however, effector cell function was not examined in this study.

S.A.300 THE PERCENTAGE (%) OF C3d-COATED LYMPHOCYTES IS MARKEDLY INCREASED IN HIV-SEROPOSITIVE (SP) HAEMOPHILIACS (H)

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Objective: Considering the frequent occurrence of lymphocyte autoantibodies in the HIV-SP patients, we have studied whether these antibodies bind to peripheral blood mononuclear cells (PBMC) and activate complement (C) in vivo. This activation was assessed by measuring the % of C-coated cells.
Methods: SP H (17) and 21 seronegative (SN) subjects (10 H, 11 healthy persons) were tested. PMBC were isolated on Ficoll-Uromiro gradient and the % of cells coated with C3-fragments was measured by direct (C3c) and indirect (C3d) immunofluorescence. Other T cell subsets (CD3, CD4, CD8) as well as C3d-CD8 double-labelled cells were also determined by flow cytometry. The extent of in vivo alternative C pathway activation was measured by an ELISA method as the plasma level of the C3bBbP complex.
Results:

	C3c+ %	C3d+ %	C3d+CD8+ %	C3d+CD8- %	C3d-CD8+ %	C3bBbP units/ml
			mean ± S.D.			
SP group	16.0±22.6	27.3±15.0	13.6±6.6	19.6±7.9	20.1±4.9	12.2±5.6
SN group	13.2±20.0	14.7±9.5	1.4±1.3	10.0±6.1	14.6±4.8	11.1±5.0
p=	n.s	0.00053	0.0007	0.04	n.s.	n.s.

Conclusion: SP patients had markedly higher % of C3d-coated PMBC than the SN controls. Both CD8+ and CD8- cells are coated with C3d. Increased phagocytosis of the C3d-coated lymphocytes can contribute to the destruction and shortened survival of lymphocytes in HIV-infected patients.

S.A.301 IMMUNE COMPLEXES (IC) CONTAINING A HIV GP120 PEPTIDE AND HUMAN POLYCLONAL ANTI-HIV IgG ACTIVATE THE ALTERNATIVE PATHWAY (AP) OF COMPLEMENT (C)

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Objective: Binding of different types of antibody (ab) to gp120 markedly influences biological properties of the HIV virion and the isolated gp120. In order to study the effect of the C system on the in vivo handling of HIV gp120-ab complexes, the C activating ability of ICs containing a gp120 peptide was measured.
Methods: A synthetic peptide, C58 representing one of the immunodominant epitopes of HIV envelope gp120 protein was used as antigen (ag). HIV IgG fraction was prepared by QAE-Sephadex chromatography from sera of 5 HIV-seropositive haemophiliacs with high level of anti-gp120. Ag and ab were mixed at different ratios and incubated at 37°C for 5 min. Fresh normal human serum (NHS was added, followed by a further incubation at 37°C for 60 min. Controls: ab + NHS, ag + NHS, buffer + NHS. C-activation was assessed by measuring by ELISA the level of C3bBbP in the IC-treated NHS.
Results: Incubation with ICs formed at different ag-ab ratios markedly increased the C3bBbP level in NHS. By contrast, no significant AP activation was observed in the samples containing ag or ab alone.
Conclusion: The observed C activation by the artificial gp120-containing ICs may occur in vivo as well. Binding of fragments of activated C proteins can affect the fate of the IC and in this way the whole virion or isolated gp120 in the body.

S.A.302 INCREASED LEVELS OF SERUM IL-6 CORRELATE SERUM IL-2R LEVELS IN HIV INDUCED DISEASES

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Objective: Since immune competent cells such as monocytes/macrophages are stimutated by HIV continuously, it seems possible to detect cytokines from these infected mononuclear cells, which might account for the immune dysfunctions.
Methods: We have used a luminescence sandwich ELISA(LS-ELISA) for the quantitation of human IL-6, and the detection limit was 50 fg/ml of test samples. By using the LS-ELISA, low but measureble levels of IL-6 (12.5±7.5 pg/ml, p<0.001) are found in sera from normal individuals.
Result: The serum levels of IL-6 were elevated in HIV seropositive asymptomatic carriers, and the IL-6 levels were reflective of the degree of HIV-disease progression. Further, a significant correlation was observed between the serum IL-6 levels and soluble IL-2R(sIL-2R) levels. IL-6 immunoreactivity in the sera of AIDS patients eluted at m.w. 25,000 of major peak and m.w. 250,000 of minor peak. In vitro, HIV infection to PHA-activated peripheral blood mononuclear cells led to enhanced release of IL-6 into the culture supernatants. Moreover, soluble IL-2R release was markedly increased by adding exogenous IL-6, whereas decreased sIL-2R release was observed by adding the neutralizing monoclonal anti-IL-6 antibody to the cultures.
Conclusion: Increased IL-6 levels were significantly associated with sIL-2R levels and reflective of the stage of HIV-induced diseases.

S.A.303 SOLUBLE INTERLEUKIN-2 RECEPTOR (SIL-2R) LEVELS IN INFANTS BORN TO HIV(+) MOTHERS. Prieto, Cecilia, Hanson, C.G., Orson, F., Shearer, W.T.

Baylor College of Medicine, Houston, Texas, USA.

Objectives: Elevated levels of SIL-2R have been documented in patients with symptomatic HIV infection and may reflect a stage of HIV induced illness. We assessed SIL-2R levels in infants born to HIV(+) mothers to determine its use as an early predictor of HIV infection.
Methods: Using a sandwich enzyme immunoassay to quantitate SIL-2R, we studied 17 infants born to HIV(+) mothers and 6 children with CDC designation P-2 were positive controls. Data was expressed as U/ml ± standard deviation:

	Positive Controls		SIL-2R	Normal Range
	HIV(+)	n = 6	1044.1 ± 179	600 ± 75 (age matched)
Group I	HIV(+)	n = 2	1402.50	
Group I	HIV(-)	n = 9	538.7 ± 109	435 ± 115 (age matched)

Results: Two of 12 infants (16.6%) had HIV infection with (+) culture of peripheral blood lymphocytes and positive HIV serology. These results mimed those of P-2 HIV(+) controls. Nine of 12 infants showed persistent seroreversion (negative ELISA, Western Blot after 12 mo.), negative serum p24 Ag and PBL culture, and normal immune function.
Conclusions: SIL-2R are released from activated MNC in the presence of in vivo HIV-1 infection in neonates and children. SIL-2R may be a helpful marker distinguishing the HIV infected seropositive neonate from those uninfected seropositive infants with maternal passive immunization only.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.304 COMPLEMENT-MEDIATED NEUTRALIZATION OF HIV REQUIRES ACTIVATION OF C5b-9 COMPLEX.

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Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois, USA.

Objective: The ability of complement (C) to neutralize HIV was assessed both with and without HIV-specific antibody (Ab). The mechanism by which neutralization occurred was also determined.
Methods: HIV was treated with C and/or Ab and then titered on the C-receptor negative H9 cell line. Viral lysis was assessed by release of reverse transcriptase (RT).
Results: While C alone had no effect on HIV titer, C (1:12 dilution) with sub-neutralizing levels of Ab resulted in from 0.3 to 1.4 log(10) reductions in titer depending on the strain of virus and the antibody source. Higher levels of C (1:3) with Ab reduced HIV titer more while lower levels (1:48) did not detectably neutralize. C5- and C8-deficient sera had no effect on Ab-treated HIV suggesting that neutralization occured via lysis. This was investigated by assessing RT release. Anti-RT Ab, which interferes in the RT assay, was removed from the Ab source on an RT affinity column. Ab and C but neither reagent alone released RT from HIV in a dose dependent manner with no measurable release occuring with higher than a 1:27 dilution of C. Release steadily increased from 10 to 60 min. Release did not occur with C2-, C5-, or C8-deficient sera but could be reconstituted with the appropriate purified components.
Conclusions: These studies show that C can neutralize HIV via the classical C pathway and that this neutralization occurs via C5b-9 mediated viral lysis.

S.A.306 The Study of Cellular Immunity of HIV-infected people.

Saidov M.Z., Pinegin B.V., Borisova A.M., Andreev S.N. Institute of Immunology, USSR Ministry of Public Health.

Aim The investigation aim was to study ARC patient cell immunity to HIV envelope protein gp-120 synthetic peptides.
Methods We used original spectrophotometric testing method of leucocyte adhesion inhibition to plastic surface by mieloperoxidase isolation out of adhered cells and capillary method of migration cell evaluation under N-formil-methyonil peptides influence to evaluate cellular immunity. As antigen we used synthetic peptide MC-338, which is HIV-1 envelope protein gp-120 immunodominating fragment copy.
Results We studied 5 ARC patients. Synthetic peptide MC-338(H-Cys-Tre-His-Gly-Ileu-Arg-Pro-Val-Val-Ser-Tre-Glu-Leu-Leu-Asp-Gly Ser-Leu-Ala-Glu-OH) with 10^{-6} 10^{-7} 10^{-8} concentration induced patient adhered cell adhesion inhibition to plastic surface while healthy people showed no inhibition. Migrating cell locomotor function study revealed that 10^{-6} 10^{-7} concentration peptide MC-338 inhibit this process in ARC patients.
Conclusions The results presented show that HIV-1 infected people possess specific cell sensibility to protein gp-120 synthetic fragment, detected by adhesion inhibition and hemotaxisis inhibition tests.

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Immunopathogenesis and Autoimmunity

S.A.305 ACTIVE CYTOTOXIC T CELLS IN HIV INFECTION BEFORE AIDS ONSET

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Objective: To measure the activity of cytotoxic T lymphocytes (CTL) in an OKT3-dependent lysis-assay in relation to immuno-phenotypical and clinical parameters of HIV-infection.

Subjects: 44 HIVab(+) patients; 27 HIVab(-) blood donors and 24 HIVab(-) high risk persons with various sexually transmitted diseases.
Methods: CTL activity was measured in a ^{51}Cr-release-assay of HL-60 targets coated with OKT3 and separated lymphocytes as effectors.
The immunophenotype was analyzed by FACScan.
Lymphocyte subpopulations were eliminated with an immunomagnetic system.
HIVab(+) patients were classified according to a newly proposed WHO clinical staging system.
Data were analyzed using Mann-Withney test and Spearman's rank correlation.

Results: 1. CTL activity was significantly enhanced ($p < 0.001$) in 20 out of 44 HIV(+) patients and in only 1 of the high risk controls. Median CTL activity increased from WHO stage 1 to 3 and returned to control levels in stage 4.
2. CTL function correlated positively with HLA-DR(+) CD3(+); CR3(-) CD8(+) and CD57(+) CD16(-) lymphocytes. It was strongly reduced after elimination of CD8(+) or of HLA-DR(+) cells.
Conclusion: The data show that circulating CD8(+) HLA-DR(+) T cells in HIV(+) patients are activated CTL and point to progressive (over)activation of this T cell compartment until the onset of clinical AIDS (stage 4).

S.A.307 INHIBITION OF CD4(+) T CELL ACTIVATION AND ADHESION BY PEPTIDES OF THE HIV ENVELOPE gp160 to CD4.

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**Pasteur-Vaccins

It has been previously demonstrated that the HIV envelope glycoprotein gp160 can inhibit the activation of T cells by phytohemaglutinin, anti CD3 antibody and antigens, this effect being due at least to the modulation of the expression of CD4. Herein we show that gp160 is also able to inhibit the antigen-independant, LFA-1/CD2 dependent adhesion of CD4(+) T cells to B cells as anti CD4 antibodies do. In addition, synthetic peptides (14 to 21 mer) derived from the gp160 sequence and analogous to the putative binding site of gp160 to CD4 (residues 418 to 460), and also covering residues 460 to 478 disclose inhibitory capacity of both CD4(+) T cell proliferation and adhesion. These inhibitory activities are specific since a) CD4(+) T cells but not CD8(+) T cells are susceptible to their effects, b) soluble CD4 neutralizes the inhibitory activities. Peptides are however about 1000 fold less. Potent inhibitors that the native gp160 and they do not induce CD4 modulation. It is therefore thought that at least part of the gp160 inhibitory activity is not secondary to CD4 modulation but may rely upon steric hindrance of CD4-major histocompatibility complex (MHC) class II interaction or of CD4/CD3 T cell receptor complex interaction or upon negative signalling through binding to CD4 as suggested by the inhibition of the antigen and T cell receptor-independent adhesion of CD4(+) T cells.

S.A.308 MECHANISMS ON THE DECLINE OF MACROPGAGE CYTOTOXICITY DURING THE COURSE OF HIV-1 INFECTION

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a)I. Med. Klinik und Poliklinik, c)Institut für Virologie, d)Institut für Physiologische Chemie, Johannes-Gutenberg Universität, Mainz, FRG, b)Zentrale Forschungseinheit, Hoffmann La Roche, Basel, Schweiz.

Objective: Since macrophages are known to play a major role in harbouring HIV-1, we have asked if macrophages from HIV-1 infected patients are altered in their capacity to lyse tumour target cells.
Methods: We have examined 158 HIV-1 positive patients on the dysfunction of macrophage cytotoxicity in the peripheral blood by using standard 18-h Cr-release assay and P 815 cells as targets. Cytokines such as Tumor Necrosis Factor-α (TNF-α) and Interferon-α (IFN-α) were measured in Enzymimmunoassays (ELISA).
Results: Specific lysis of tumor targets decreased with the progression of the disease and was almost absent in patients suffering from full blown Aids. Stimulation of macrophages with IFN-α or Il-2 could not restore macrophage mediated cytotoxicity. However, failure in tumor lysis was not a result of absent or defect macrophages, since macrophages that were collected after plastic adherence were esterase positive, showed marked phagocytosis when latex was added and produced significantly higher titers of TNF-α.
Conclusion: We believe that a specific HIV-1 mediated mechanism is responsible for the observed effect and we are presently investigating the role of TNF as a regulating cytokine of cytotoxicity in HIV-1 positive patients.

S.A.309 HIV ENVELOPE PROTEIN (gp120) DECREASES THE ANTI-CRYPTOCOCCAL EFFECT OF HUMAN BRONCHOALVEOLAR MACROPHAGES.

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Objective. To study the effect of HIV envelope protein (gp 120) on bronchoalveolar macrophages (BAMs) co-cultured with the MP-415 encapsulated strain of Cryptococcus neoformans (CN).
Methods. BAMs, obtained from healthy volunteers by bronchoalveolar lavage, were cultured with CN alone and in the presence of gp120, rabbit anticryptococcal IgG (CN-IgG), gp120 with CN-IgG, gp120 with anti-gp120 crosslinking antibody, or gp120 with recombinant soluble CD4 (rsCD4). Cultures were incubated 24 hours at 37° C, sonicated to disrupt macrophages which might contain viable CN, and diluted 1:10 in sterile water. Aliquots were cultured on Sabouraud plates. Colonies were counted after three days and expressed as colony forming units per ml.
Results. Mean colony counts for BAMs alone were normalized to 100±9 (mean ± standard error). Counts for the gp120, CN-IgG, gp120 with CN-IgG, crosslinked gp120, and gp120 with rsCD4 groups were 118±5, 88±5, 135±13, 162±18, and 89±18 respectively. The difference between BAMs alone and BAMs with CN-IgG was statistically significant (P<0.001) as were the differences between the BAMs alone or CN-IgG groups and BAMs treated with gp120, gp120 plus CN-IgG, and crosslinked gp120 (P<0.05). A trend for increased colony counts in the crosslinked gp120 group vs. gp120 alone did not reach significance.
Conclusions. Handling of CN by BAMs is enhanced by CN-IgG and impaired by treatment with gp120, even in the presence of CN-IgG. The gp120 effects are absent when rsCD4 is used to bind the gp120, but may be amplied by crosslinking. HIV gp120 may alter the anti-cryptococcal function of BAMs.

S.A.310 THE HIV ENVELOPE INHIBITS ANTIGEN SPECIFIC T CELL RESPONSES BY INTERACTION WITH THE MEMORY T CELL

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Antigen presenting cells (APC) may transmit HIV to T lymphocytes which are therefore susceptible to infection when specifically activated, during antigen presentation. By using T cell lines specific for tetanus toxoid (TT) and purified protein desivative (PPD) we show that HIV specifically inhibits antigen specific T cell proliferation and that this mechanism is independent of the IL-2 signalling pathway. As the inhibition can still be seen at low (5-10 TCID) virus concentrations the experiments were repeated with soluble gp120 with similar results. Clonal anergy induced with gp120 was highly specific, reversible and could be prevented with soluble CD4.

Pre-incubation of gp120 with APC's and the T cell lines clearly shows that gp120 masks the CD4 molecule on the T cell and does not affect the function of the APC. These experiments suggest that specific T cell clones can be rendered anergic by the presence of gp120 at doses which are non-toxic to the cells. This suggests that gp120 can induce signal changes which may lead to unresponsiveness. The interaction of gp120 with CD4 may be the main mechanism of HIV pathogenesis and may in part explain the clinical picture whereby indiginous organisms are more likely to cause disease than new antigens. Furthermore, the specificity of the response blocked by gp120 raises the questions as to whether T cell receptor recognition of self is not pertubated by gp120 which could lead to a chronic allogeneic disease resemblant of graft versus host.

S.A.311 INTRACELLULAR GLUTATHIONE LEVEL CONTROLS DNA-BINDING ACTIVITY OF NFκB-LIKE PROTEIN(S)

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Objective: The LTR region of the HIV-1 genome contains enhancer sequences including the κB-sequence that is known to regulate light chain expression in B-cells. Since we have previously found that HIV-1 infected persons have generally reduced plasma cysteine concentrations and decreased intracellular glutathione levels, we have now investigated the influence of the intracellular glutathione concentration on the regulation of HIV-1 gene expression. Here we report the effect of intracellular glutathione levels on DNA-binding proteins that bind to one of the enhancer sequences of the HIV-1 genome.
Methods: The intracellular glutathione level was experimentally elevated by administration of glutathione to the medium and decreased by administration of buthionine sulfoximine, a specific inhibitor of the glutathione biosynthesis. Band shift assays were used to determine the DNA-binding activity of nuclear protein extracts to radioactively labeled κB-sequences.
Results: In several different human and murine cell lines we observed that even a moderate decrease of the intracellular glutathione level increases strongly the DNA-binding activity of NFκB-like proteins.
Conclusion: Our studies suggest strongly that the reduction of intracellular glutathione levels in HIV-1 infected persons contributes to the regulation of viral activity in these patients.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.312 HIV INHIBITS THE EARLY STEPS OF LYMPHOCYTE ACTIVATION, INCLUDING INITIATION OF INOSITOL PHOSPHOLIPID METABOLISM.

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Objective: To define the mechanisms accounting for HIV-associated suppression of lymphocyte proliferation.
Methods: Inactivated HIV was added to cultures of peripheral blood mononuclear cells. Inositol phospholipid metabolism was measured as ^{32}P-incorporation in phospholipids separated with thin layer chromatography.
Results: Impaired lymphocyte blastogenesis (decreased size and granularity and decreased expression of receptors to IL-2 and transferrin) in response to PHA indicated an effect of inactivated HIV on the early steps of activation. This was confirmed by time studies where i) a 2 minutes HIV-pretreatment followed by washing before stimulation was sufficient to inhibit PHA induced proliferation of normal lymphocytes and ii) addition of HIV to PHA prestimulated lymphocytes failed to inhibit proliferation, e.g. there was no effect on preactivated lymphocytes. HIV inhibited lymphocyte proliferation induced by PHA or monoclonal antibodies to the CD3 receptor. In contrast to the effect on the CD3/Ti receptor, responses via the CD2 receptor were not suppressed, e.g. stimulation with the monoclonal antibodies $T11_2+T11_3$. Since responses by direct A23187+PMA stimulation of intracellular pathways were also inhibited, it appears that the HIV-induced defect was not (or not only) membrane receptor mediated. HIV associated suppression acted in the early steps of activation to inhibit the incorporation of radiolabeled phosphorus into PIP_2 and PA.
Conclusion: Pretreatment of mononuclear cells with inactivated HIV resulted in a decreased inositol phospholipid turnover as judged from decreased ^{32}P incorporation into PIP and PIP_2. This led to decreased generation of DAG as reflected in the reduced radiolabeling of its metabolite PA. Reduced availability of DAG presumably interferes with pkC activation and leads to decreased expression of receptors for IL-2 and transferin and impaired proliferation.

S.A.313 ACTIVATED B-LYMPHOCYTES INDUCE HIV EXPRESSION IN CHRONICALLY INFECTED CELL LINES.

Rieckmann, Peter; Poli, G.; Pantaleo, G.; Kehrl, J.H.; Fauci, A.S. LIR, NIAID, NIH, Bethesda, Maryland, USA.

Objective: To investigate the role of activated B-lymphocytes in the induction of HIV expression in chronically infected U1 (promonocyte) and ACH-2 (T lymphocyte) cell lines.
Methods: Tonsillar B-lymphocytes from HIV negative donors were stimulated in vitro with a polyclonal B cell activator, Staphylococcus aureus Cowan strain I, in the presence of IL-2. Activated B cell supernatants or direct coculture experiments were used to assess the effects of activated B-lymphocytes (ABL) on virus production by ACH-2 and U1 cells. Virus production was measured by reverse transcriptase (RT) activity. Neutralizing experiments were performed with polyclonal and monoclonal abs against IL-6 and TNF-α. The amount of secreted cytokines from activated B cells was determined by ELISA. Similar experiments were done with peripheral blood B cells from an HIV infected patient.
Results: Both cocultivation with in vitro ABL and incubation with supernatants from ABL induced HIV expression in U1 and ACH-2 cells as measured by RT production while in the absence of in vitro activation of the B cells no RT production was detected. Significant amounts of IL-6 (125 pg/ml) and TNF-α (160 pg/ml) known to induce HIV expression in these cell lines, were released from ABL but not from unactivated cells. Up to 85% of the HIV inducing activity of supernatants from ABL on ACH-2 cells could be neutralized by anti-TNF-α antibodies. A combination of anti-IL-6 and anti-TNF-α antibodies reduced the HIV induction in U1 cells to baseline levels. In contrast to normal B cells, peripheral blood B-lymphocytes obtained from an HIV positive patient induced HIV expression in coculture experiments with U1 and ACH-2 cells in the absence of any in vitro stimulation.
Conclusion: In vivo and in vitro activated B cells secrete cytokines such as TNF-α and IL-6 which induce HIV expression in chronically infected U1 and ACH-2 cells. Since B cell hyperactivity is a prominent feature in patients with HIV infection, the production of cytokines by these activated B cells may enhance HIV production in vivo.

S.A.314 ANTI-CD4 ANTIBODIES IN VOLUNTEERS IMMUNIZED WITH rgp160 ASSOCIATED WITH RAPID DECLINE IN ANTI-rgp160

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Objective: To determine whether rgp160 vaccination induces anti-idiotype antibodies which antigenically mimic gp160 and therefore bind to CD4.
Methods: Sera from 10 low risk, seronegative, polymerase chain reaction-negative volunteers were studied (AIDS Vaccine Clinical Trials Network); 5 received 3 doses of rgp160 (MicroGeneSys, Inc.) (days 1, 30 and 180) and 5 received 3 doses of hepatitis B vaccine or alum. Sera were assayed for anti-CD4 before and 12 times during 18 months follow-up using the following methods: indirect fluorescent antibody binding to transfected HeLa+CD4 cells; fluorescence activated cell scanning using a CD4+ human T cell line (CEM); and enzyme-linked immunosorbent assay (ELISA) using recombinant CD4 as the solid phase.
Results: Anti-CD4 antibodies were detected in the sera of 3 of 5 rgp160 recipients at days 270 or 365, at a time when anti-rgp160 responses were rapidly falling. Anti-CD4 antibodies were also detected in 1 of 5 controls at every time point tested; this volunteer was found to be infected with HIV-1 by Western blot analysis at 18 months.
Conclusion: Anti-CD4 antibodies appear to be generated in response to rgp160 vaccination and are associated with a dampened anti-rgp 160 response in the vaccinees. Anti-CD4 antibodies were detected 18 months before anti-HIV-1 antibodies in the infected individual, suggesting that measurement of anti-CD4 antibodies may indicate HIV-1 infection earlier than current serologic methods.

S.A.315 HIV gp41 SYNTHETIC PEPTIDES EFFECT THE NATURAL IMMUNE RESPONSE

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Three different synthetic peptide homologous to the amino acid sequences 567-648, 735-753 and 846-860 of HIV gp41 were tested for their role in effecting the natural immune response of normal individuals. First, highly purified human neutrophils (PMN) were preincubated with 1000, 100, 10, ng/ml of the 80 amino acid peptide or control media prior to assay in standard migration (stimulant: FMLP 10^{-8}M) and bactericidal assays (target: *Staphylococcus aureus*). Chemotaxis was impaired by 33±5% and 24±4% at the two lower doses (n=4). Bactericidal activity was severely inhibited at the highest dose and a dose response was demonstrated (Control killing, 46±4%, 1000 ng/ml, 3±9%, 100 ng/ml, 27±8%, 10 ng/ml, 33±5%; n=4). To assess Natural Killer (NK) cell activity, peripheral blood mononuclear cells were preincubated with various concentrations of peptides 735-753 and 846-860 prior to assay in a short term ^{51}Cr cytotoxicity assay (target: K562 cells). Significant inhibition of NK cell activity was induced without altering the effector/target cell recognition (1 μg/ml; 59-66%, 5 μg/ml; 79-84%, 10 μg/ml; 87% inhibition, n=7) while remaining unchanged with control synthetic peptides. These results taken together indicate that these epitopes of HIV gp41 are critical for effecting certain immune function and that HIV immunodepression may not only be the result of a direct viral effect on $CD4^+$ cells but is also mediated through viral products.

S.A.316 PHENOTYPIC MARKERS OF IMMUNE ACTIVATION IN RHESUS MONKEYS INFECTED WITH SIV

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Objective: To determine whether or not immune activation was present during SIV infection by studying the expression of phenotypic markers of activation on T and B cells.
Methods: Phenotypic evaluation of lymphoid antigens was conducted with dual antibody 2 color flow cytometry. In vitro stimulation of PBMC was done with PHA and PWM in 4-day cultures. Peripheral blood from control and SIV-infected monkeys was tested 2, 7 and 14 months after infection.
Results: In vitro stimulation by mitogen substantially increased expression of activation markers DR, IL-2 receptor, transferrin receptor on simian CD4 and CD8 T cells and CD20 B cells. Rhesus monkeys infected with SIV expressed 5 times more CD78 (Leu 21) on circulating B cells by 7 months than control animals. CD8 T cell activation was highest at 14 months after infection with 100% increase in expression of DR and transferrin receptor (CD71). CD4 T cells, however, showed reduced levels of the activation markers DR and IL-2R.
Conclusion: Immune activation was evident in SIV-infected rhesus monkeys with increased expression of phenotypic activation molecules on peripheral blood CD8 T and B lymphocytes.

S.A.317 INHIBITION OF HIV-1 REPLICATION IN CD4+ T CELL SUBSETS WITH ANTI-TNF NEUTRALISING ANTIBODIES.

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Objective : To study the association between TNF and HIV replication in CD4+ T cell subsets.
Methods : CD4+ T cells were enriched from PBMC and fractionated into CD45RA (naive) and CD45RO (memory) cells with specific antibodies and magnetic beads. Cells were cultured in the presence and absence of neutralising anti TNF antibodies with HIV-1 isolates and virus replication monitored by syncytium assays and by measuring p24 antigen levels. Secreted TNF α, TNFβ and IFN-γ were measured by ELISA assays.
Results : HIV-1 induced the secretion of TNF α, β IFN-γ in CD4+ T cells, and all three cytokines could enhance HIV-1 replication. The addition of recombinant (r) TNF α, rTNF β or rIFN-γ enhanced syncytium formation with rTNF α being most potent. Furthermore, neutralising anti TNF α, anti TNF β and to a lesser extent anti IFN-γ inhibited HIV-1 replication in the absence of exogenously added cytokines demonstrating a feed-back loop between HIV induced TNF production and virus replication. Anti-TNF antibodies also inhibited HIV replication in memory but not virgin T cells. We are now testing if this is due to differential infection of memory versus virgin cells by PCR.
Conclusion : TNF regulation of HIV replication may depend on the differentiation stage of CD4+ T cells.

S.A.318 INTERLEUKIN-6 (IL-6) INDUCES HIV EXPRESSION AND SYNERGIZES WITH OTHER CYTOKINES AT TRANSCRIPTIONAL AND POST-TRANSCRIPTIONAL LEVELS.

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Objective: To determine the effect of IL-6 and other cytokines on HIV expression.
Methods: The effect of IL-6 on the expression of HIV was studied in the chronically infected promonocytic cell line U1 which is characterized by low constitutive HIV production, and which is upregulated by phorbol esters, tumor necrosis factor-α (TNF-α) and granulocyte-macrophage colony stimulating factor (GM-CSF). Virus induction was studied by reverse transcriptase (RT), p24 ELISA, western blot, northern blot, and nuclear run-on analysis. IL-6 effects were also investigated in monocytes and T lymphocytes acutely infected with HIV.
Results: IL-6 induced expression of HIV in U1 cells. Synergistic induction of virus production was observed when U1 cells were simultaneously stimulated with multiple cytokines (i.e. IL-6 + TNF-α, IL-6 + GM-CSF, TNF-α + GM-CSF). Unlike TNF-α, IL-6 and/or GM-CSF stimulation of HIV protein synthesis or RT was not associated with accumulation of HIV RNA as determined by northern blot analysis. In contrast, a synergistic accumulation of HIV RNA occurred when U1 cells were stimulated with IL-6 or GM-CSF in the presence of TNF-α, and this effect was due, at least in part, to an increased transcription of new viral RNA, as established by nuclear run-on analysis. Inductive effects of IL-6 on HIV expression were recently observed in other chronically infected monocytic cell lines and in primary monocytes infected in vitro with HIV, whereas no effect was observed on acutely or chronically infected T lymphocytes.
Conclusion: HIV expression is inducible in chronically infected monocytic cells by multiple cytokines, such as TNF-α, GM-CSF and IL-6. At the molecular level, IL-6 and GM-CSF alone or in combination induce HIV production by a post-transcriptional mechanism, whereas these cytokines synergize with TNF-α in the transcriptional induction of HIV expression.

S.A.319 OPPOSITE EFFECTS OF TRANSFORMING GROWTH FACTOR-β (TGF-β) ON HIV EXPRESSION IN CHRONICALLY VERSUS ACUTELY INFECTED MONOCYTIC CELLS.

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Objective: To study the effect of TGF-β on HIV infection of monocytic cells.
Methods: The chronically infected U937-derived promonocytic cell line (U1) constitutively expresses low to undetectable levels of HIV, which are inducible by phorbol esters (PMA). Furthermore, tumor necrosis factor-α (TNF-α), granulocyte-macrophage stimulating factor (GM-CSF), and interleukin-6 (IL-6), alone and in synergy, upregulate virus production in U1 cells. The effect of TGF-β (0.2-2.0 ng/ml) on the constitutive and inducible levels of virus was determined by reverse transcriptase (RT) or p24 antigen production, Western blot and Northern blot analysis. The effect of TGF-β on HIV replication in the acutely infected parental cell line U937 was also tested.
Results: TGF-β completely suppressed HIV expression in U1 cells stimulated with IL-6 and GM-CSF, both alone and in synergistic combination, as measured by RT and Western blot. TGF-β also partially (50-75%) suppressed PMA induced viral RT, protein and RNA, but did not affect TNF-α induction of virus in U1 cells. In contrast, when the parental U937 cells were infected in the presence of TGF-β we observed a significant (up to 100 fold) enhancement of HIV replication, as measured by RT or p24 antigen production. We observed no significant effect of TGF-β on HIV expression in either chronically or acutely infected T lymphocytic cells.
Conclusion: HIV expression in monocytic cells is regulated by TGF-β in a dichotomous fashion. In chronically infected cells TGF-β selectively suppresses induction of virus by PMA and certain cytokines, such as IL-6 and GM-CSF. In contrast, during the acute phase of infection HIV expression is significantly enhanced by treatment with TGF-β. These data indicate that cytokines can potentially exert multiple and complex regulatory effects on the levels of virus expression in HIV infected patients.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.320 TUMOR NECROSIS FACTOR-α PRODUCTION IN HIV-1 INFECTION

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Objective: Tumor Necrosis Factor-α (TNF-α) is mainly produced by macrophages in response to Sendai virus or bacterial products and might be involved in replication of HIV-1. We have previously been able to demonstrate Corynebacterium parvum (C.p.) as a potent inducer for TNF-α in cultures of human peripheral blood mononuclear cells (PBMC). We therefore tested 135 HIV-1 positive patients on the capacity of PBMC to produce TNF-α.
Methods and Results: Levels of TNF-α were measured using a specific enzyme-immunoassay as well as Northern Blot analysis. Serology of HIV-1 infection were examined in an Abbott-ELISA and the data were proofed by using Western Blot Analysis (Dupont). It turned out that TNF-α levels in the supernatants of cultured PBMC from patients at Walter Reed stage 2 were already enhanced, compared to healthy controls. PBMC of patients at stage 3-6 produced significantly higher titers of TNF-α than those of healthy donors or symptomless patients at stage 2. Enhanced TNF-α production was paralleled by reappearence of p24 antigen and disappearence of antibodies recognizing this core-protein. Enhanced TNF-α production was confirmed using Northern Blot Analysis. More over it turned out that TNF-α transcripts, which are usually present in two bands, differing in molecular weight, were only present in the 1.4 kb band, indicating posttranscriptional modulation.
Conclusion: Clinically enhanced TNF-α production might contribute to the immunodysregulation and pathogenesis in HIV-1 infection.

S.A.321 DIFFERENTIAL GENE EXPRESSION OF IFN-α AND TUMOR NECROSIS FACTOR-α IN MONONUCLEAR CELLS FROM PATIENTS WITH HIV-1 INFECTION

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Objective: Human PBMC from HIV-1 infected individuals produced ex vivo in response to vesicular stomatitis virus (VSV) only low amounts of IFN-α. In order to define if a decrease of the level of transcripts is also observed for TNF-α, transcriptional regulation of TNF-α was studied in HIV-1 infected patients at various stages of disease.
Methods: PBMC from 142 HIV-1 infected individuals were stimulated with LPS for TNF-α production. Northern blot analysis was used to define TNF-α transcripts and for detection of the protein a TNF-α ELISA was conducted.
Results: Almost parallel with the increase of the level of the transcripts for TNF-α, the level of TNF-β increases as well. Data are presented which show that the increased TNF-α production is due to a longer half-life of TNF-α transcripts in PBMC from infected individuals.
Conclusions: The results let us suggest that the upregulation of TNF-α gene expression in PBMC from HIV-infected individuals is controlled predominantly on the posttranscriptional level, wheras transcriptional events reguate the level of IFN-α transcripts. This assumption is supported by run-on experiments which revealed that the extent of transcription of TNF-α gene is almost identical in nuclei from stimulated PBMC of noninfected and HIV infected donors, wheras the transcription of IFN-α gene is strongly suppressed in nuclei from HIV-infected individuals at WR stages 3-6.

S.A.322 GLUCOCORTICOIDS ACT SYNERGISTICALLY WITH RECOMBINANT CYTOKINES TO INDUCE HIV EXPRESSION IN CHRONICALLY INFECTED PROMONOCYTE CELLS.

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Objective: To investigate the effect of glucocorticoids on HIV expression in chronically infected cells.
Methods: A promonocyte cell line (U1.1) chronically infected with HIV was cloned from an acute infection of U937 cells. U1.1 cells constitutively produce low levels of HIV as measured by reverse transcriptase (RT), Western blot and Northern blot analysis, but virus expression can be induced by PMA or cytokines, such as TNF-α, IL-6 and GM-CSF. In this study both dexamethasone and hydrocortisone were tested, alone and in combination with cytokines, to determine their effect on HIV expression in U1.1 cells.
Results: No significant change in HIV expression was observed in U1.1 cells treated with either dexamethasone or hydrocortisone in a large (10^{-5}M to 10^{-10}M) concentration range. However, when dexamethasone (10^{-8}M) was used in combination with TNF-α (100 u/ml), IL-6 (100 u/ml), or γ-IFN (100 u/ml) the levels of RT production increased by 5 to 11 fold over the additive values. Similar effects were observed with hydrocortisone. These synergistic effects were reflected in increased protein synthesis as assessed by Western blot analysis and were confirmed in a second chronically infected U937 derived cell line (U33). Recently we have observed upregulation of HIV expression by corticosteroids in primary infected monocytes.
Conclusion: Physiologic concentrations of glucocorticoids when combined with various cytokines can synergistically upregulate HIV expression in chronically infected promonocyte cells, suggesting a potential role of these hormones in HIV expression in vivo.

S.A.323 IN VITRO PRODUCTION AND SPECIFIC CELLULAR SOURCES OF NEOPTERIN AND BETA2-MICROGLOBULIN (B2m)

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Objective: To determine the specific cellular sources of neopterin and B2m production in normal peripheral blood mononuclear cell (PBMCs) subsets.
Methods: Pure subsets of T cells (>95%), B cells (>95%), and monocytes (>95%) were stimulated with mitogens (PHA and PWM), lymphokines (IL-2, gINF, and TNF), or inactivated HIV.
Results: The production of neopterin in PBMCs was increased 2 times by addition of mitogens or TNF and increased 3-4 times by addition of gINF or IL-2. The subsets responsible for the production were monocytes and B cells. Activation of monocytes with mitogens or lymphokines increased the production of neopterin 3-6 times and activation of B cells increased the production 8-25 times. Inactivated HIV increased neopterin production 2 times in PBMCs, in particular, in B cells.
The production of B2m was increased 2 times by either stimulation with mitogens or IL-2 but not by TNF and gINF. The subsets responsible for the production were activated T and B lymphocytes. In contrast to neopterin production, B2m production was not increased by addition of inactivated HIV.
Conclusion: Lymphokines, and in particular IL-2 and gINF are important enhancers of the production of both neopterin and B2m. This indicates that elevated serum levels of B2m and neopterin may reflect increased production of cytokines, including IL2 and gINF, during immune activation. The finding, that inactivated HIV directly enhances the production of neopterin by PBMCs, indicates that HIV stimulation may contribute to the increased serum level in HIV infected individuals.

S.A.324

CD4 AUTOANTIBODIES WITH DIFFERENT SPECIFICITIES IN HIV-INFECTED HEMOPHILIA PATIENTS

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Recently we reported on the occurrence of membrane bound autoantibodies on CD4+ T lymphocytes (mCD4) in HIV+ asymptomatic and AIDS patients but not in HIV- hemophilia patients or healthy controls. To characterize these autoantibodies further, we tested 151 sera of 20 hemophilia patients with AIDS/ARC, 250 sera of 89 asymptomatic HIV+, 110 sera of 76 HIV- patients, and 173 sera of 151 healthy controls for antibodies against 2 different recombinant CD4 (rCD4) constructs using an ELISA technique. Both the 4- and the 2-domain proteins were conjugated with Fc fragments of IgG. Anti-Fc was studied in parallel. 2 AIDS/ARC, 3 asymptomatic HIV+, 6 HIV- hemophilia patients, and 11 healthy controls had anti-Fc. When these patients were excluded from further analysis, 22% (4/18) of AIDS/ARC, 10% (9/86) of asymptomatic HIV+, 17% (12/70) of HIV- hemophilia patients, and 1% (2/140) of healthy controls had antibodies against the 4-domain rCD4. Some sera were only reactive with the 4-domain but not with a 2-domain rCD4 protein. Comparing the anti-rCD4 results with our recent anti-mCD4 results in 113 HIV-infected patients, 3% of the patients had both anti-rCD4 and anti-mCD4, 76 had neither, 19% had only anti-mCD4, and 2% only anti-rCD4. 114 patients were followed for 20±9 months. 11/18 patients with anti-rCD4 lost the antibodies during the observation period. Occurrence or loss of anti-rCD4 did not correlate with CD4+ cell counts. Anti-rCD4 was isolated from one HIV+ serum by adherence to rCD4-coated Sepharose beads. The anti-rCD4 eluate was strongly reactive in an ELISA against rCD4, however, it did not react with allogeneic or autologous CD4+ PBL using flowcytometry and double fluorescence. From these data we conclude that HIV+ patients produce a variety of different antibodies reactive with CD4+ lymphocytes and the CD4 receptor. Their clinical relevance remains unclear.

S.A.325

ANTI-IgG AUTOANTIBODIES IN HIV-INFECTED HEMOPHILIA PATIENTS

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Objective: We have previously shown that IgG autoantibodies directed against the constant part of IgG are induced during the normal immune response and are strongly immunosuppressive both "in vivo" and "in vitro". We now investigated whether such regulatory autoantibodies appear in HIV infected hemophiliacs.
Methods: In specific ELISA assays, sera of 70 HIV-, 104 HIV+/AIDS-, and 21 HIV+/AIDS+ hemophilia patients were tested for four different anti-IgG activities.
Results:

	IgG-a-F(ab')2	IgM-a-F(ab')2	IgG-a-Fcγ	IgM-a-Fcγ
HIV-	167±54	460±235	481±301	395±249
HIV+/AIDS-	240±89	500±332	664±418	313±159
HIV+/AIDS+	420±262	655±361	706±414	326±164
{HIV- - HIV+/AIDS+:	p<0.0005	p<0.01	p<0.05	p=n.s.}

By using synthesized peptides, we furthermore investigated whether the IgG-a-F(ab')2 activity was directed against the constant CH1 domain of IgG with known structural homology to gp-120:

IgG-a-F(ab')2	anti-CH1 peptide	anti-gp120 peptide
high (>260)	552±275	625±269
low (<260)	275±130	332±137
	p<0.0003	p<0.0001

Conclusions: IgG-a-F(ab')2 activity is associated with HIV infection and is due to cross-reaction of the anti-viral antibody with the constant CH1 domain of IgG. Crossreactivity of the anti-viral antibody with self IgG can be the cause of immunosuppression or polyclonal B cell activation by crosslinking mechanisms.

S.A.326

ANALYSIS OF HLA ALLOANTIGEN FREQUENCIES IN PATIENTS WITH HIV-1 RELATED KAPOSI'S SARCOMA

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Objective: To evaluate the role of the major histocompatibility complex as a contributing factor in disease progression and outcome in HIV-1 infected individuals. *Methods*. HLA typing was performed by standard microcytotoxicity techniques on peripheral blood lymphocytes from 278 homosexual men in the following categories/diagnosis: 87 HIV-1 seronegative; 83 HIV-1 seropositive, disease free; 44 seropositive Kaposi's sarcoma (KS); 50 seropositive, opportunistic infection (OI); 14 seropositive, OI and KS. Frequencies of 16 alleles at the HLA-A locus, 31 alleles at the B locus, 7 at the C locus, 10 at the DR locus, and 3 at the DQ locus were determined and compared for differences (Chi square) in the above groups. *Results*. Individual HLA antigen frequencies in the entire cohort did not differ from the frequencies of HLA antigens in the North American Caucasian populations. Likewise, no significant differences were found in HLA antigen frequencies between the seronegative and seropositive groups. Differences were found comparing HLA antigen frequencies in individuals with KS with antigen frequencies in the HIV-1 seropositive disease-free and HIV-1 seronegative individuals. HLA-B35, C4, DR1 and DQ1 antigens were increased in frequency in the KS population with the most significant differences (p<0.001) DQ1. While HLA-DR3 was decreased in the KS patients (8%) compared to controls (27%)(p<0.005), HLA antigen frequencies in KS patients also differed from frequencies found in OI; DR3 (8% vs 23%), and HLA-DR14 (16% vs 0%). *Conclusions*: These results suggest that disease outcome of HIV-1 infection may be influenced by gene/gene products that are known to play a critical role in the regulation of the immune response.

S.A.327

FUNCTIONAL ANALYSIS OF CR1 ON ERYTHROCYTES FROM AIDS AND ARC

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Objective: Decremental loss of erythrocyte(E) CR1 activity was associated with progression of clinical illness from asymptomatic to ARC and towards to AIDS. The mechanism resulting in decreasing CR1 activity has not been fully understood. We studied the distribution of CR1 site on E from AIDS and ARC patients(pts) and characterized activity of IgG eluted from pt's E.
Methods: Each E specimen was coated with anti-CR1 monoclonal(Mo; 31D, 44D, 57H, 57F, To) or polyclonal(Po) antibody(Ab), radiolabelled immune complexes (IC) and/or anti-human Ig or anti-human complement Ab, followed by the Coil Planet Centrifuge System for fractionation of E according to their membrane osmotic fragility. IgG was isolated from E surface using glycine-HCl buffer.
Results: The youngest E(less fragile) of heterosexual controls have more functional CR1 sites/E than older E(more fragile). Functional CR1 sites are linearly lesser depending on the age of E. In pts, their younger or the youngest E showed markedly low functional CR1 sites/E. CR1 antigen detected by Mo or Po Ab generally correlated with ageing of E, but did not correspond to the functional binding sites of CR1. Distribution of IgG, IgM, C3c and C3d detected by direct Coombs' test showed a strong negative correlation with the functional CR1 distribution but not with that of anti-CR1 Ab binding sites. Ab activity of IgG eluted from 10 AIDS E specimens was assayed for HIV, CMV and HSV. 7 of 10 eluates showed the presence of Ab activity to HIV but none of eluates reacted with CMV and HSV, although all of serum specimens from corresponding patients revealed Ab activity to HIV, CMV and HSV. Both serum and eluate specimens did not show any Ab activity against E surface antigens.
Conclusion: In addition to physiological loss of CR1, presence of anti-HIV Ab and complement components on younger or the youngest E(presumably have CR1 function in normal) from HIV infected subjects indicates, in part, acquired blockage of CR1 by C3b-bearing circulating IC involving HIV as antigen.

Molecular Biology

S.A.328 In vitro INTEGRATION OF HIV-1 DNA

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We have developed a highly efficient cell free system for studying the integration of HIV-1 DNA. Linear viral DNA purified from the cytoplasm of cells infected 4 hours earlier with concentrated HIV-1 is capable of integrating into an exogenously added DNA target. A Southern blotting assay demonstrates that greater than 98% of the viral DNA molecules present in an extract are capable of integrating in vitro, providing the most efficient assay to date for retroviral integration. Conditions influencing the efficiency of integration have been studied. Velocity sedimentation analysis of extracts from infected cells indicates that the viral DNA resides in a high molecular weight nucleoprotein complex that contains all the functions necessary for integration in vitro. The integration complex can be purified away from the bulk of cellular and viral protein by gel exclusion chromatography without a decrease in the ability to integrate in vitro. The ability to purify integration complexes that retain full integration activity has allowed us to identify the viral proteins that may be involved in the integration process. This highly efficient in vitro integration assay could form the basis of a screen for drugs that inhibit this essential step in the replication of HIV-1

S.A.329 A SELECTIVE DNA CLEAVING REACTION CATALYZED BY PURIFIED HIV INTEGRATION PROTEIN EXPRESSED IN E. COLI

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The virus-coded integration protein (IN), is necessary for insertion of a double-stranded DNA copy of the retrovirus RNA genome into the host cell DNA to form the provirus. To study the characteristics of IN from HIV, as a potential target of antiviral chemotherapy, the protein was expressed at high levels in bacteria and purified to near homogeneity, free of other detectable endonucleases.

Purification was accomplished by selective extraction, hydrophobic interaction and heparin sepharose chromatography. IN catalyzed removal of the terminal two nucleotides from the 3'-end (plus strand) of a DNA mimic of the U5 end of the HIV viral DNA. The reaction was metal ion dependent with a preference for Mn^{++} over Mg^{++}. The terminal GT residues were removed, forming a free 3'-OH on the neighboring ...CA residue. The U5 minus strand was not cleaved even though it had a ...CAxx 3'-end. A substrate with a TA substituted for the CA was also much less efficiently cleaved. A substrate that mimicked the U3 end of the HIV DNA was selectively cleaved; the U3 substrate for IN from an avian retrovirus was not cleaved.

The HIV IN catalyzed a "trimming reaction" with characteristics expected for a protein involved in the integration step of the retroviral life cycle.

S.A.330 STUDY OF THE NON-ESSENTIAL GENES OF HIV-1 vpu and vpr

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Objective: To determine the role of the vpu and vpr genes upon the life cycle of HIV-1

Methods: To investigate the role of vpu and vpr in the replication and cytopathicity of HIV-1, infectious proviruses isogenic except for the expression of vpu or vpr were constructed. In addition, CD4+ lymphocyte cells lines (Jurkat) constitutively expressing vpu were generated.

Results and Conclusions: It will be shown that the vpu protein acts in trans to increase greatly the export of virus particles from infected cells and reduces the accumulation of cell-associated viral proteins. Information relevant to the subcellular localization of the vpu protein as well as to properties of the vpu cell line will also be presented as well be the implications for the mechanism of action of vpu.
Vpr is shown to encode a 96 amino acids 15Kd protein that acts in trans to accelerate viral replication and cytopathic effects in T-cells. Experiments showing that the HIV-1 viral particles contain multiple copies of the vpr protein will be presented. This observation raises the possibility that vpr acts to facilitate the early steps of infection before de novo viral proteins occurs.

S.A.331 COMPETITIVE INHIBITION OF HIV-1 EXPRESSION BY TRANSACTIVATION DEFECTIVE *TAT* GENES.

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Objectives : To investigate the functional role of defective *tat* genes on transactivation.

Methods : Eleven naturally occuring defective *tat* genes, which have been identified amongst 180 proviral sequences from a single HIV-1-infected individual, were cloned into a mammalian expression vector pSV2gpt, under the control of the SV40 early promoter. Two experimental systems were used : 1) cotransfection of the human T cell line H9 with the active HIV-1 Bru *tat* gene and plasmids containing CAT or SEAP genes under the control of the HIV-1 Bru LTR ; 2) cotransfection of the human carcinoma cell line SW480 with the infectious proviral clone of HIV-1 Bru (pBru-2). As assays, CAT, alkaline phosphatase or reverse transcriptase activity was measured.

Results : Some variants efficiently reduced transactivation in a concentration dependent manner and thus, represent competitive inhibitors. A 90% inhibition can be achieved with a 5-10 fold molar excess of defective *tat*.
For other variants, no change in transactivation efficiency was seen at various active/defective *tat* gene ratios, indicating that no competitive inhibition was observed at any concentration.

Conclusions : These data clearly show that naturally occuring defective *tat* gene products may competitively inhibit HIV expression. The unusually high frequency of defective HIV genomes (10-15% in the *tat* gene locus alone) suggests that they may be responsible for the modulation of HIV replication *in vivo*.

S.A.332 TAT PROTEIN OF HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 IS ABLE TO BLOCK TAR-MEDIATED ACTIVATION OF (2'-5')OLIGOADENYLATE-SYNTHETASE

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Objective: Recently it was demonstrated that the TAR segment of HIV-1 leader is able to activate the dsRNA-dependent protein kinase. Here we show that the TAR sequence also can bind to and activate purified (2'-5')A synthetase.
Methods and Results: The TAR sequence of the 5'leader of HIV-1 long terminal repeat (LTR)-directed mRNA was found to be able to bind to and to activate double-stranded RNA-dependent (2'-5')A synthetase. Binding of TAR to the purified synthetase *in vitro* was abolished by addition of HIV-1 Tat protein, which binds to this sequence with a high affinity. Inhibition of TAR-mediated activation of (2'-5')A synthetase by Tat was prevented in the presence of the Zn^{2+} and Cd^{2+} chelators o-phenanthroline and penicillamine, which did not impair TAR-synthetase interaction. Transient expression assays of bacterial chloramphenicol acetyltransferase (CAT) gene in HeLa cells revealed that the levels of both CAT mRNA and protein decreased after treatment of the cells with interferon, if CAT gene was linked to HIV-1 TAR segment. Cotransfection of the cells with a tat sequence containing plasmid rendered CAT gene expression insensible to the action of interferon.
Conclusion: It is shown that the trans-activator Tat is able to replace the synthetase at the TAR sequence, resulting in an abolition of TAR-mediated activation of (2'-5')A synthesis.

S.A.333 FUNCTIONAL ANALYSES OF HTLV-1 TRANSCRIPTION IN YEAST

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Objective: Human T-cell leukemia virus type 1 (HTLV-1) is the etiological agent of adult T-cell leukemia. The 3' end of HTLV-1 proviral DNA encodes the synthesis of a 40-kd tax protein which stimulates transcription from the U3 region of the viral long terminal repeat (LTR) sequence. We are investigating the mechanism of tax-mediated trans-activation.
Methods: The yeast Saccharomyces cerevisial was selected as the organism to introduce the tax gene and the tax-responsive cis-element, for the purpose of genetic manipulation as well as over-expression of the tax protein.
Results: We are reporting that 1) the HTLV-1 upstream activating sequence (UAS) localized within the U3 LTR region can substitute yeast UAS, and direct the transcription in vivo, 2) tax protein expressed in yeast transport correctly into the nucleus, 3) over-expression of tax protein in yeast arrests the yeast cell cycle, and 4) tax protein over-expressed in yeast can be purified to near homogeneity. We are currently analyzing protein factors encoded by yeast which are involved in the HTLV-1 trans-activation via a genetic approach. Characterizing the properties of purified tax protein is also under way.
Conclusion: We are investigating a system which may lead to the under-standing of pathways involved in tax-mediated transactivation. This system might provide a unique assay for drug screening.

S.A.334 STRUCTURAL REQUIREMENTS WITHIN THE TAR REGION FOR TAT BINDING IN VITRO

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Objective: To identify the structural requirements within the tat-responsive element (TAR) for binding of the trans-activator protein tat of HIV-1.
Methods: Deletions and nucleotide substitutions were introduced into the TAR sequence by site-directed mutagenesis. SP6-derived transcripts comprising the TAR region were tested in an RNA mobility shift assay for nucleoprotein complex formation with purified tat.
Results: We have identified a critical region within the TAR element that is required for tat binding. Both primary sequence and secondary structure were important for binding. The integrity of the secondary structure within this region was also necessary for trans-activation mediated by tat. However, other mutations which perturbed trans-activation did not have significant effects on this interaction. Further assessment of the functional significance of tat binding to TAR RNA was obtained by examining the affinity of binding of a mutant tat protein to TAR RNA. Nucleoprotein complex formation with the mutant protein was significantly reduced, as compared to that with wildtype protein.
Conclusion: These results suggest that tat binding to TAR RNA is specific and relevant to tat-mediated trans-activation of HIV-1 gene expression.

S.A.335 POPULATION CHANGES OF HIV-1 *REV* GENE DURING DISEASE PROGRESSION.

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Objectives : To study the temporal changes in HIV-1 *rev* gene sequence *in vivo* during disease progression.
Methods : The second coding exon of the HIV-1 *rev* gene sequence was amplified by PCR directly from PBMC DNA. Samples were taken over a four years period from PGL to AIDS. The PCR products were cloned and twenty recombinants from each time point sequenced using fluorescent labeled primers and an ABI DNA sequencer. The major forms were subcloned into an expression vector containing the first exon of *rev* (HIV-Bru).
Results : The region amplified encoded the second coding exons of *tat* and *rev* as well as a part of gp41 in the third phase. This region is therefore very rich in information. The *rev* quasispecies increased in complexity with disease. Novel forms replaced existing forms. However the same nucleotide sequence, yet translated in the *env* reading frame, indicated that the *env* quasispecies were very complex at the beginning, during and at the end of the observation period. Again there was turn over of *env* sequences. The second coding region of *tat* was highly variable but is too small to interpret accurately. Within the *rev* sequence most of the mutations were clustered at the C-terminus. Variants lacking the serine phosphorylation site were found in all samples. A few defective sequences were identified.
Conclusions : That the *rev* and *env* quasispecies behaved differently with time must indicate differential selection pressures on each of the proteins. These results do not parallel these for the first exon of *tat*, demonstrating that the two transactivator genes evolve differentially. The paucity of defective *rev* sequences suggests that defective *rev* genomes probably do not influence viral expression and evolution *in vivo*.

S.A.336 MOLECULAR MECHANISM OF REV MEDIATED TRANSACTIVATION OF HIV GENE EXPRESSION: INTERACTION BETWEEN RNA AND REV PROTEIN

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Objectives: Identify biochemically the molecular mechanism for REV mediated transactivation of HIV gene expression. Demonstrate quantitatively the interaction of REV protein and RRE RNA.
Methods: REV and REV mutant proteins are purified to homogeneity from *E. coli* extracts. RNA fragments varying from 26 to 350 nucleotides are synthesized *in vitro* using T7 polymerase or by oligonucleotide synthesis on solid supports. Quantitative RNA binding and footprinting methods are as described (*Nature* 342, 816-819, 1989).
Results: REV protein has been shown to bind RRE RNA with 1000 fold specificity over other RNA species. Using RNA footprinting and smaller RNA fragments the binding site of REV has been identified. Studies with purified REV mutant proteins confirmed genetic mutation based speculations of two domains within REV protein: domain I (amino acids 24-55) which affect RRE RNA binding and domain II (amino acids 72-83) which may affect interaction with cellular protein factors. Identification of these cellular factors that interact with REV-RRE complexes will be presented.
Conclusions: REV protein mediates transport of unspliced mRNA in the cytoplasm of HIV infected cells by directly binding to RRE containing mRNA in pre-splicing complexes. Cellular factors are engaged that may function to divert the RNA from a degradation pathway to allow transport across the nuclear membrane.

S.A.337 SPECIFIC INTERACTION OF THE HIV REV PROTEIN WITH A STRUCTURED REGION IN *ENV* mRNA: SECONDARY STRUCTURE IS THE MAJOR DETERMINANT FOR INTERACTION.

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A region of potential complex secondary structure within the human immunodeficiency virus *env* mRNA has been implicated in Rev-mediated export of viral structural mRNAs from the nucleus to the cytoplasm. Using an RNase protection gel mobility shift assay we demonstrate that purified Rev protein forms a stable complex with this Rev responsive RNA. RNAs with mutations designed to disrupt formation of a stem structure no longer interact with Rev. We found that a single hairpin loop structure is a primary determinant for Rev binding *in vitro* and Rev response *in vivo*. Unlike *cis*-acting elements present in DNA, maintenance of secondary structure, rather than simply primary nucleotide sequence, appears to be necessary for Rev-RNA interaction. Limited changes within the 200 nucleotides which preserve the proper RRE confirmational structure were well tolerated for Rev binding and function. Thus, variation among the RRE elements present in the diverse HIV isolates would have little, if any, affect on Rev responsiveness.

S.A.338 MECHANISM OF FUNCTION OF THE HIV-1 REV PROTEIN

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Objective: To study the function of Rev by gene transfer experiments and mutational analysis.
Methods: Gene transfer, mutagenesis, RNA and protein measurements.
Results: The Rev regulatory protein of HIV-1 promotes the transport from the nucleus to the cytoplasm of viral mRNAs that contain the Rev-responsive element (RRE) and increases the stability of these mRNAs (Felber et al., PNAS 86, 1495, 1989). The RRE is a unique element of 200 bp located in the env region that is capable of forming strong secondary structures and is present only in mRNAs encoding the structural proteins. Mutations in the vicinity of amino acid 80-90 of the Rev protein generated mutants with a trans-dominant phenotype. In the presence of such mutant Rev proteins, virus propagation is inhibited. HTLV-1 regulates expression of its structural proteins by the Rex protein, the functional homolog to Rev. Rex can substitute for Rev; however the functions of Rev and Rex are not reciprocal, because Rev cannot substitute for Rex (Felber et al., New Biologist, 1, 318, 1989). Rex also acts on HIV-1 via RRE. Fine mapping of RRE revealed that the minimal sequence requirements for Rev and Rex function are distinct. As shown for Rev, the function of Rex can be abolished in the presence of trans-dominant mutants of Rev.
Conclusion: The non-reciprocal activities of Rex and Rev suggest that they act directly via a similar structural element within their responsive elements.

S.A.339 HIV-1 REV BINDING AND ACTIVITY REQUIRE A SPECIFIC RNA SEQUENCE WITHIN A UNIQUE SECONDARY STRUCTURE OF THE RRE

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Objective:. To identify the minimal domain of the RRE RNA structural element which is functionally recognized by HIV-1 REV.
Methods: 1)The PCR technique was used to obtain several RRE mutants which either disrupted the unique stem/loop structure of this RNA or introduced specific deletions of individual stem/loops; 2) the mutants were introduced into an HIV-1 GAG expression plasmid to evaluate their REV responsivity by DNA transfection of REV expressing cell lines; 3) REV binding to the mutant RRE RNAs was determined by RNA mobility shift analysis and nitrocellulose filter binding; 4) secondary structures of the wt and mutant RNAs predicted by the Zuker algorithm were confirmed by limited nuclease digestions; 5) RNAse foot-printing and RNA-protein cross-linking techniques defined the minimal binding sequence within the RRE.
Results: The previously known RRE sequence of 244 nts folded into an unique structure composed of 5 stem/loops. Three 3' distal stem/loops could be excised singly or in combination without drastically affecting in vitro REV binding or in vivo REV response. The critical components for REV binding and biological response lie within the two 5' proximal stem/loops the distal one of which folded into a branched structure. RNAse foot-printing experiments demonstrated that REV binding specifically protected 76 nts at the 5' end of RRE spanning these 2 stem/loops. RRE-REV cross-linking experiments isolated a 56 nt fragment within this region of the RRE. Small deletions within these 5' stem/loops resulted in loss of REV binding and biological activity although the overall structure was preserved. Base substituitions in the critical 5' stems which disrupted the overall structure and abolished REV response. Certain compensatory mutations which restored the stems were functionally active. However, one compensatory mutation which restored the base-pairing over a six nt region in the critical 5' stem failed to restore REV binding or biological response.
Conclusion: The critical components of REV recognition of RRE constitute a specific RNA sequence

S.A.340 Functional Analysis of CAR, the Target Sequence for the rev Protein of HIV-1

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Expression of high levels of the structural proteins of the human immunodeficiency virus type 1 (HIV-1) requires the presence of the rev protein and its associated target sequence, CAR (*cis* anti-repression sequence) which is present in the *env* region of viral RNA. We demonstrate that CAR has a complex secondary structure consisting of a central stem and five stem/loops. Disruption of any of these structures severely impairs the rev response, but at least three of the stem/loops may be deleted without effect. Material in the unnecessary stem loops seems to be present for functions unrelated to the CAR/rev axis of regulation and probably needs to be retained in these structures to avoid destabilizing adjacent structures critical for CAR function. Data will be presented concerning the sequence specificity of the element and the nature of the stability of the overall structure.

S.A.341 IN VITRO FUNCTIONAL ASSAY OF RECOMBINANT HIV-TAT PRODUCED IN EUKARYOTIC AND BACTERIAL CELLS.

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Objective: HIV-TAT, acts to increase the level of mRNA directed by the HIV-LTR promoter. We have developed a cell free, *in vitro* transcription assay to study structure - function relations of recombinant HIV-TAT.
Methods: HeLa whole cell extract provided the background transcription activity. A DNA template, which included the HIV-LTR promoter and the TAT response region, TAR, was used and the synthesized RNA transcripts analyzed. HeLa produced TAT was isolated as cell nuclear extract from HeLa cells transformed with TAT cDNA (HeLa/t2 cells). HIV-TAT produced in *E. coli* was made as a fusion protein with the IgG binding domain of protein A (domain Z). The Z-Z-TAT protein was separated by affinity chromatography, cleaved, purified by further chromatography and assayed for biological activity.
Results: RNA transcripts were correctly initiated by the HIV-LTR promoter *in vitro*. Addition of HeLa/t2 nuclear extract resulted in a dose dependent increase in RNA transcripts. The increase in RNA transcripts was specific for the HIV-LTR promoter as compared with other promoters. We also observed an increase in HIV-LTR produced RNA transcripts upon the addition of *E. coli* recombinant HIV-TAT. At high concentrations of purified HIV-TAT, the transcription activity of the HIV-LTR was inhibited. Antibodies to recombinant HIV-TAT blocked the activation of the HIV-LTR promoter by TAT from both HeLa/t2 cells and from purified *E. coli* produced HIV-TAT.
Conclusion: *E. coli* recombinant produced TAT appears about twenty-fold less active than that in HeLa/t2 cells, possibly because of incorrect folding. As the only functional cell free assay for HIV-TAT, *in vitro* transcription provides a means to assess HIV-TAT activity during its purification and to study *in vitro* its mechanism of action.

S.A.342 AUTOANTIBODIES TO CD43 (LEUKOSIALIN) IN HIV-1-INFECTED INDIVIDUALS

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OBJECTIVE: To determine if specific T cell surface molecules are targets for serum anti-T cell antibodies which are found in the majority of HIV-1-infected individuals.
METHODS: Sera from HIV-1-infected individuals were adsorbed to different T cell leukemia lines (Jurkat, RPMI 8402, SUP T1) which were previously documented to express a variety of T cell surface antigens. The bound antibodies were eluted and used to identify their antigen targets by immunochemical and molecular biologic assays.
RESULTS: 25% of all HIV-1 infected individuals contained serum antibodies that immunoprecipitated a single protein with a M_r of 120 kD from the surface of the T cell leukemia lines. Antibodies to the 120 kD protein were not detected in sera from HIV-1 seronegative subjects. Neuraminidase treatment of the 120 kD protein shifted its electrophoretic mobility to approximately 150 kD, suggesting that the molecule was heavily sialated. The identity of this molecule was confirmed to be CD43 (leukosialin) in that (1) anti-CD43 monoclonal antibodies recognized the protein immunoprecipitated by the human anti-T cell antibody eluates and, (2) the human anti-T cell antibody eluates bound specifically to fibroblasts transfected with a cDNA clone of CD43. No antibodies to other T cell surface antigens, including CD4, were detected by the method used.
CONCLUSIONS: This study demonstrates that HIV-1-infected individuals can produce antibodies that target CD43, a thymic (T cell) surface molecule. Because abnormal expression of CD43 has been noted in patients with Wiskott-Aldrich Syndrome, a severe immunodeficiency syndrome of childhood, and CD43-like molecules have been detected in brain neurons, anti-CD43 autoantibodies may contribute to the pathophysiology of AIDS.

S.A.343 CHARACTERISATION OF CELLULAR PROTEINS WHICH INTERACT WITH THE NEGATIVE REGULATORY ELEMENT (NRE) OF THE HUMAN IMMUNODEFICIENCY VIRUS (HIV) LONG TERMINAL REPEAT (LTR).

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*** Medical Molecular Biology Unit, University and Middlesex Hospitals, London, UK.

Objective: To investigate whether cellular transcription factors bind to the NRE region of HIV.
Methods: DNA mobility shift assays and DNase footprints using a fragment containing between -456 to -300 of the HIV LTR were performed with nuclear extracts from Jurkat cells. Sequences identified in these analyses were confirmed by competition experiments using an appropriate oligonucleoride.
Results: Two cellular proteins that interact with the NRE have been identified. The first binding site is not competed by known transcription factor binding sequences eg. octomer binding protein, and is thus recognised by a previously uncharacterised cellular transcription factor. The second site also yields binding data with extracts from non-activated T cells, resting and stimulated blood lymphocytes, and Hela cells. The sequence reconised is related to those recognised by steroid hormone receptors which are known to affect transcription and under certain circumstances result in down-regulation of transcription (transcriptional silencing).
Conclusions: Two novel cellular proteins have been shown to interact with the HIV NRE. One of these proteins is present in a wide range of cell types and has homology in its recognition sequence with the steroid receptor family. The functional significance of these proteins will be discussed.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.344 HUMAN IMMUNODEFICIENCY VIRUS-2 (HIV-2): TWO ENHANCERS AND THEIR RESPONSE TO T CELL ACTIVATION

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The human immunodeficiency viruses (HIVs) may include a spectrum of retroviruses with varying potential to infect their host, cause different periods of latent infection and induce pathology. Since expression of the virus is in large part regulated by the sequence elements in its long terminal repeat (LTR), this study was directed to an analysis of the HIV-2 LTR. A series of LTR deletion mutants and synthetic oligonucleotides representing specific regions of the LTR was linked to the indicator CAT gene, the latter coupled with the SV40 promoter. The DNAs were transfected into human lymphocytic and monocytic cells and enhancement of the CAT gene expression in the absence and presence of T cell activation was analyzed. The results showed that HIV-2 LTR contains two enhancers. One of these enhancers is in part identical to the HIV-1 enhancer. This enhancer in HIV-1 is the T cell activation response element; in HIV-2, however, it is the second enhancer that is mainly responsible for activation in response to T cell activators. DNA:protein binding studies using gel shift assay and SDS-Page analysis showed that the second enhancer interacts with two nuclear binding proteins (85 kD and 27 kD mobility) that appear to be required for optimal enhancer function and activation. Observations such as these encourage the speculation that there may be subtle differences in the regulation of HIV-1 and HIV-2 expression that may be relevant to the possible longer latency and reduced pathogenicity of HIV-2.

S.A.345 HIV-1 **vif** AND **vpu** GENE PRODUCTS: STRUCTURAL AND FUNCTIONAL ANALYSIS.

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Objective. To describe the structure of the HIV-1 vif and vpu gene products and their function in the viral replication cycle.
Methods. A variety of molecular, biochemical and immunological techniques were employed in the analysis of the physicochemical characteristics of vif and vpu.
Results. The HIV-1 vif protein has previously been shown to be crucial for the production of infectious virions. Cell fractionation studies show that vif is tightly associated with intracellular structures. Results of pulse-chase experiments suggest that vif, similar to vpu, is not secreted into culture supernatants and is thus unlikely to be virion-associated. The vif protein does not appear to affect the production of progeny particles per se; progeny virions are capable of at least initiating cDNA synthesis in vitro.
The HIV-1 vpu protein has been previously shown to be involved in release of progeny virions from HIV-infected cells. In vitro, vpu forms extremely stable higher order structures; crosslinking experiments in vitro and in vivo suggest the formation of oligomeric structures of vpu.
Conclusion. Both vif and vpu appear to be restricted to intracellular functions affecting the infectivity or the release of progeny particles, respectively. Neither protein appears to be required for early steps of the virus replication cycle.

S.A.346 STRUCTURE/FUNCTION ANALYSIS OF THE HIV-1 QUASISPECIES FROM THE nef/LTR REGION OVER A FOUR YEAR PERIOD *IN VIVO*

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Objective : To study the genetic and functional variability inherent in the regulatory elements *nef* and LTR over a four year period *in vivo*. To establish a correlation, if any, between LTR and *tat* sequences.

Methods : A population based approach was adopted. Three-time points *in vivo* and two *in vitro* were analyzed covering a four year period. PCR products, amplified from fresh and cultured PBMC, were cloned into M13 and 20 clones (approximately 1 kb each) or each sample were sequenced. The LTR of major forms were subcloned into an alkaline phosphatase expression vector. Jurkat-*tat*, Jurkat and SW480 cells were transfected.

Results : *In vivo* quasispecies were much more complex *in vivo* than after *in vitro* culture. The quasispecies are so complex that single genome never monopolizes the quasispecies. *Nef* and LTR quasispecies appear to behave independently. In LTR, most of the mutations map to the TAR region. Defective LTR and *nef* sequences were identified in most quasispecies. A small number of clones carried substantial deletions in *nef*. After transfection many of the LTR variants proved to have different transactivator efficiencies.

Conclusions : These data demonstrate that other regulatory regions are extremely complex *in vivo* and the difficulty of correlating molecular genetics and virology *in vivo*. Nonetheless it appears that *nef* and LTR behave independently over time *in vivo*. Since we have the corresponding *tat* gene products mix and matching experiments between *tat* and LTR sequences are underway and will be reported. In so doing it will be possible to see if *tat* and TAR evolve in *cis*.

S.A.347 ANALYSIS OF HIV CDNA IN HUMAN MACROPHAGES

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Objective: Human macrophages can be infected with HIV, however, it is not yet clear whether HIV cDNA is unintegrated or integrated in macrophage genomic DNA as it is with human lymphocyte genomic DNA. We set out to determine the state of HIV cDNA in human macrophages.
Methods: Human macrophages were derived from buffy coat preparations by adherence. The macrophages were maintained in suspension in teflon jars and infected in vitro with HIV_{DV} at an m.o.i. of 2. Cells were monitored for infectivity by p24 staining and FACS analysis. Either Hirt (episomal) or genomic DNA was isolated from $1x10^6$ infected cells and digested with restriction enzymes. The DNA was resolved by agarose gel electrophoresis, transferred to nytran and probed with cloned full-length ^{32}P labeled HIV_{ARV} by Southern hybridization. As a positive control for integrated HIV cDNA, genomic DNA was isolated from the cell line 8E5/LAV and (each cell contains one integrated copy of HIV_{LAV} but no unintegrated HIV cDNA) and similarly analyzed by Southern hybridization.
Results: Preliminary results show that HIV cDNA exists virtually exclusively in the unintegrated (episomal) form in infected macrophages as seen from the hybridizing signal from the Hirt preparation. Genomic DNA derived from matched infected macrophages did not show a hybridizing signal.
Conclusion: Our preliminary data suggests that HIV cDNA does not integrate in human macrophage genomic DNA. Since fully-differentiated human macrophages do not replicate, it is unlikely that HIV cDNA will integrate into the macrophage genomic DNA. We will further investigate this by screening several HIV-infected macrophage preparations and will attempt to clone HIV cDNA from infected macrophages.

S.A.348

INDUCTION OF HIV ENHANCER-BINDING PROTEINS BY STIMULATION THROUGH THE T CELL RECEPTOR OF HUMAN T CELL CLONES.

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Objective : The T cell receptor complex (TCR) is the physiological signaling system responsible for T cell activation, lymphokine secretion and HIV genome reactivation. We have analysed the respective role of TCR-triggering and lymphokine secretion in induction of HIV-enhance-binding proteins (EBP) in IL-2 dependent, CD4+ human T cell clones.
Methods : T cell clones were stimulated after removal of IL2 by either monoclonal antibodies to CD3 or the beta chain of the TCR heterodimer, or by recombinant IL2 or TNF. Production of cytokines was blocked by cycloheximide (CHX) or specifically by neutralizing antibodies. Gel retardation assays used oligonucleotides with the sequence of the 10 bp repeat of the HIV-1 or HIV-2 enhancer.
Results : Stimulation of the TCR led to EBP translocation and secretion of TNF, LT and IFN gamma. Recombinant TNF also induced EBP. Recombinant IL2 induced intense proliferation, but very little if any EPP translocation. EBP induction was still observed when endogenous TNF and LT were neutralized. CHX did not block EBP translocation induced by r TNF, but diminished that induced by CD3 stimulation. CHX alone did not induce EBP translocation.
Conclusions : EBP induction after TCR stimulation of normal T cell clones is independent of cell proliferation and cytokine production. However, autocrine secretion of TNF amplifies (through mechanisms independent of protein synthesis) the transmembrane signalling provided by TCR stimulation.

S.A.349

DEVELOPMENT OF A RETROVIRAL VECTOR SYSTEM BASED ON HIV

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Objective: To use packaging defective HIV-1 as a basis for an HIV-1 vector system.
Methods: A packaging defective HIV-1 provirus has been described previously. This provides in trans a source of viral structural and enzymatic protein for construction of a retroviral packaging system. Using HIV based vectors consisting of 5' and 3' LTRs the packaging signal and marker genes we attempted transfer of marker genes to CD4 positive cell lines.
Results: Procaryotic gene products obtained in the target cell lines showed successful transfer of the vector by the packaging system. Control constructs lacking the necessary HIV-1 sequences were not transferred demonstrating specificity of packaging.
Conclusion: This system provides a potential method of gene transfer to CD4 cells for immunological and therapeutic studies.

S.A.350

DELETION MUTANTS OF SIV/HIV AND POSSIBLE USE IN FUTURE VACCINES

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Objective: To generate deletion mutants of Simian Immunodeficiency virus (SIV) and human immunodeficiency virus (HIV) which can replicate but have lost the ability to integrate and initiate a latent infection.
Methods: Using specific restriction enzymes and the exonuclease Bal31, deletion mutants of SIV_{mac} and HIV_{mn} have been generated by removal of portion(s) of the endonuclease domain of the pol gene. The resulting plasmids were transfected into HUT-78 and RD cells. Production of infectious virus and integration were monitored by p24 antigen assay, reverse transcriptase activity measurement and Southern analysis of DNA respectively.
Results: In comparison with parental DNA, the deletion mutants replicated well in both cell systems, albeit a little slower in RD cells. Virus derived from clones with deletions in the endonuclease domain did not integrate efficiently into HUT-78 cells despite being able to produce infectious virus.
Conclusions: Such deletion mutants that are unable to set up a latent or persistent infection may be testable candidate live virus vaccines in appropriate animal models.

S.A.351

HIV-2 ENVELOPE GLYCOPROTEIN FORMS OLIGOMERS AND MEDIATES FUSION OF CD4-BEARING NON-PRIMATE CELLS.

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Objective: Characterization of the HIV-2 envelope (env) protein with respect to structure and biological activity.
Methods: A recombinant vaccinia virus (vSC50) was constructed to express the HIV-2 (SBL6669) env glycoprotein in mammalian cells. The env protein was identified by immunoprecipitation using sera from SIV-infected monkeys or HIV-2 infected humans. Biological activity was determined by syncytium formation between cells expressing HIV-2 gp160 or CD4 encoded by recombinant vaccinia viruses.
Results: Synthesis of gp160 and conversion to gp120 was demonstrated by pulse-chase experiments in cells infected with vSC50. Velocity gradient centrifugation of the infected cell lysate indicated that gp160 was synthesized as a monomer and assembled to a dimer post-translationally. In contrast, gp120 sedimented in the monomer region of the gradient. Chemical cross-linking experiments ,however, revealed the existence of a higher order structure, apparently a tetramer of gp160. In fusion assays, 20 non-human cell lines expressing either HIV-2 or HIV-1 gp160 formed syncytia with CD4-expressing human cells. In contrast, human cells expressing HIV-1 gp160 could fuse only to 6 of 20 non-primate cell types expressing CD4 whereas human cells expressing HIV-2 gp160 invariably fused with any CD4-bearing non-primate cells. Furthermore, in no cases with HIV-1, but in 7 of 20 with HIV-2, CD4/gp160 mediated cell fusion occured in non-primate cells without a human fusing partner.
Conclusions: Like the HIV-1 env, the HIV-2 env exists in dimeric and tetrameric forms. Unlike HIV-1, however, the HIV-2 env can mediate fusion of some non-primate cells bearing CD4.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.352 PROPERTIES OF HIV-1 VARIANT GLYCOPROTEINS MADE IN LECTIN-RESISTANT CHINESE HAMSTER OVARY CELL LINES

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Objective: To obtain variant HIV-1 glycoproteins to dissect the role of the carbohydrate moieties in virus-cell interactions.
Methods: HIV envelope glycoproteins are produced in lectin resistant CHO cells infected with a recombinant human adenovirus which carries the HIV-1 env gene. They were analyzed by radioimmunoprecipitation and gel electrophoresis. Infected cells were mixed with HeLa CD4$^+$ cells or with CD4-bearing T-lymphocytes to examine syncytia formation.
Results: The human adenovirus recombinant (Ad5env) containing the HIV env gene specifying gp160, is capapble of infecting CHO cells. HIV env gene expression in wild-type parental CHO cells results in gp120 that appears to be identical with authentic gp120 from human cells while CHO mutant cell lines yielded glycoproteins with the expected altered oligosaccharides. The molecular weights of "gp120" obtained from wt CHO and from mutant lines lec1, lec2 and lec8 were 120, 100, 120 and 105 Kd. When wt and variant gp120's were mixed with CD4-bearing cells, there were obvious differences in the extent of syncytia formation, with gp120 produced in lec8 cells producing the most extensive syncytia.
Conclusion: The envelope glycoproteins produced in mutant CHO cell lines had the expected alterations in glycosylation. Using these variant glycoproteins,we are defining the role of the carbohydrate components in the functioning of the envelope proteins.

S.A.353 EXPRESSION OF FULL-LENGTH RECOMBINANT GP41 FROM HIV-1 IN MAMMALIAN CELLS: EVIDENCE FOR CELL SURFACE EXPRESSION AND OLIGOMERIZATION

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Objective: To express native, recombinant gp41 from HIV-1 in a permanent cell line and to examine its physical and immunological characteristics.
Methods: The HIV-1 gp41 gene was engineered for cell surface expression independent of the gp120 sequences by the addition of an exogenous signal sequence. Four amino-terminal sequences were tested, two retaining the amino-terminal hydrophobic fusion domain and two omitting this domain. To test for the formation of oligomers of gp41, we added a membrane-impermeable reversible cross-linking agent to cultures of permanent CHO cell lines expressing gp41.
Results: Constructs encoding full length and truncated proteins could direct expression, as measured by a gp41-specific ELISA on the cell lysates. Expression correlated with the presence of the exogenous signal sequence, suggesting that the hydrophobic fusion domain cannot by itself serve as a signal. Permanent CHO cell lines were positive for cell-surface expression of the gp41 protein by surface immunofluorescence using human HIV-positive sera. Cross-linked lysates were analyzed with and without reducing agent on western blots processed with human HIV-positive sera. Higher molecular weight (MW) species in the nonreduced lanes were reduced to a 41 kDa protein upon the addition of reducing agent.
Conclusions: Full length gp41 can be expressed in permanent cell lines. The sizes of the higher MW species are consistent with dimers, trimers, and tetramers of gp41. Purification of the glycoprotein is in progress for use in immunogenicity studies.

S.A.354 MATURATION OF HIV-1 PARTICLES ASSEMBLED FROM THE GAG PRECURSOR REQUIRES IN SITU PROCESSING BY GAG-POL PROTEASE

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Objective:. To investigate the minimal GAG and POL protein structural requirements for the HIV-1 particle assembly and maturation.
Methods: 1) The following HIV-1 recombinant vaccinia viruses were generated: i) vvTFVGAG55, p55 GAG virus, ii) vvTFVGAG-POL, containing the entire GAG and POL ORFs iii) vvTFVGAG-PRO, containing the entire GAG ORF and a truncated Pol frame expressing only the protease domain, iv) vvTFVGAG17, the p17 GAG MA protein, and v) vvTFVPRO, expressing the GAG-POL protease; 2) extracts of HeLa cells infected with different vaccinia recombinants were examined by immunoblotting using pooled AIDS patient sera; 3) secreted forms of HIV-1 GAG and GAG-POL proteins were analyzed by immunoblotting the culture supernatants after pelleting through 20% sucrose cushion ; 4) the extracellular material was banded on sucrose gradients and fractions were analyzed for GAG and POL proteins; 5) cells infected with the recombinants and the particles from sucrose gradients were examined by thin section electron microscopy.
Results : Self-assembly of p55 GAG alone is sufficient to form the framework of the immature HIV-1 particle. The immature GAG particles budding from the cell membrane were spheres with a concentric ring of electron dense material. Expression of the GAG and POL proteins facilitated the maturation and processing which was demonstrable by the condensation of the core and formation of a near complete nucleoid. When the POL frame was truncated at the end of the protease domain, CAG processing and particle maturation were retarded. GAG processing and particle maturation did not occur when the protease was coexpressed in *trans*, from a separate vaccinia recombinant.
Conclusion : GAG-POL processing is an ordered event occuring preferentially in the nascent particles, probably at the plasma membrane. This is consistent with type C viruses where particles were assembled by oligomerization of GAG precursors and the processing followed budding.

S.A.355 IDENTIFICATION OF THE GENOME RNA IN THE HUMAN IMMUNODEFICIENCY VIRUS AND A MODEL OF ITS MORPHOGENESIS.

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Objective: To study the RNA in HIV by electron microscopy and cytochemistry.
Methods: Ultrathin sections of HIV-1 in H9 cell cultures were treated with different cytochemical techniques to reveal the RNA.
Results: Cytochemical tests demonstrated in budding HIV a curved line at the inner edge of the membrane adherent, lentivirus specific layer. This RNA line grew parallel to the budding membrane and often showed a half circumference in immature viruses. In mature HIV the RNA was present as round to ellipsoid mass inside the wider part of the conical core. Tubular cores were found in viruses with non-encapsidated RNA. Some HIV contained two RNA masses.
Conclusion: Based on ultrastructural aspects of HIV in our and other studies and consulting the retroviral literature we developed the following model. The HIV genome RNA, probably bound to the cysteine-rich sequence of the nucleocapsid protein (NC) of the gag or gag-pol precursor is transported to the cellular membrane. There the RNA is building complexes with the NC of neighbour gag precursors leading to a helical arrangement and thereby forming a curved RNA-NC shell. The often observed hemispheric shell may be characteristic for immature HIV, as in oncornavirus models, or demonstrate the cleaving action of the viral protease. The cleeved RNA-NC helix rolls up and forms a spheric complex to which pol enzymes are thought to be adhered. Around this RNA-protein (RNP) complex a conical core of p24 is built, which seems to get tubular in case of failing RNP encapsidation. HIV containing two RNA genomes, thought to originate from the close budding of two viruses and joint release and maturation, may contribute, in case of different genomes, to the diversification of the HIV population and biology during the infection.

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S.A.356 REGULATION OF PROTEIN EXPRESSION IN HIV-1 INFECTED T-CELLS USING ANTI-SENSE OLIGONUCLEOTIDES (AO) TO VIRAL REGULATORY GENES

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OBJECTIVE. To analyze the effect of AO corresponding to HIV-1 regulatory regions on gene expression.
METHODS. AO containing a modified sulfur backbone and a cholesterol moiety were incubated with control and HIV-1 infected WE17/10 cells (IL-2 dependent human CD4+ T-cell line) for 18 hours in the presence of 35S-methionine and 35S-cysteine. Newly synthesized proteins were analyzed by 2D-gel electrophoresis. Viral transcripts in WE17/10 cells were also characterized by the polymerase chain reaction (PCR).
RESULTS. AO to nef, tat, and rev were incubated with HIV-1 infected WE17/10 cells at various stages post-infection and specific alterations in the protein patterns were found in comparison with control cells. Addition of nef AO leads to the appearance of 4 new protein spots ranging in molecular weight from 60,000 to 15,000 daltons. Incubation with tat AO quantitatively changes the expression of numerous proteins. No significant protein changes have thus far been detected after incubation with the rev AO. Analysis of several viral transcripts by PCR indicates the presence of multiple messenger species corresponding to the tat/rev region. The relationship with the quantitative protein differences remains to be demonstrated.
CONCLUSION. These results indicate that AO to HIV-1 regulatory regions can alter gene expression in HIV-1 infected cells.

S.A.357 STRUCTURAL ANALYSIS OF THE CD4-BINDING REGION OF THE HIV-1 gp120 MOLECULE

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Objective: To define individual amino acids of gp120 important for CD4 binding.
Methods: Systematic site-directed mutagenesis affecting single conserved amino acids in the CD4-binding fragment of HIV-1 gp120 was carried out. Mutant envelope glycoproteins were analyzed for CD4-binding affinity and ability to form syncytia and to complement virus replication.
Results: The number of gp120 amino acid residues critical for CD4 binding numbers less than ten. The locations of these residues limits considerably the possible structural models of the gp120 CD4-binding fragment.
Conclusions: The location of the gp120 residues critical for CD4 binding provides novel insights into feasible approaches directed at the development of therapeutic or prophylactic interventions.

S.A.358 ISOLATION OF HUMAN ANTIBODY DOMAINS TO HIV USING THE POLYMERASE CHAIN REACTION

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Objective: Characterization of human antibody domains to HIV produced via the polymerase chain reaction (PCR) and expressed in E. coli.
Methods: Oligonucleotide primers specific for each human immunoglobulin heavy chain variable region (V_H) family or light chain variable region (V_K) family were designed based on a review of published sequences. RNA was prepared either from peripheral blood lymphocytes (PBLs) of healthy HIV infected individuals or human hybridomas producing monoclonal antibodies to HIV. cDNA was amplified by PCR and cloned into E. coli expression vectors.
Results: V_H and V_K domains have been 'rescued' from human hybridomas and expressed as a a complete antibody and as antibody fragments (F_V or F_{ab}). Repertoires of human V_H and V_K domains have been produced from PBLs and screened as single and associated domains both directly, by binding to labelled GP120, and also in an ELISA based assay.
Conclusions: Using PCR, it is possible to derive HIV specific antibody fragments in E. coli..

S.A.359 MOLECULAR ANALYSIS OF AIDS-ASSOCIATED LYMPHOMA (AAL)

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Objective: Molecular analysis of autopsy specimens from a patient who died with widespread metastatic AAL revealed a polyclonal EBV-negative B-cell proliferation. This study was undertaken to determine the prevalence of this process at the time of diagnosis of AAL.
Methods: Southern blotting with J_H, EBV-internal repeat, and 1st exon of *c-myc* probes were used in the analysis.
Results:

	Peripheral Lymphomas		CNS Lymphomas
Clonality:	Monoclonal	Polyclonal	Monoclonal
Morphology:	4/14 SNC[1]	6/11 IBL[2]	6/6 IBL
EBV + :	7/14	2/9	5/5
c-myc[3]:	5/14	0/11	0/6

[1]small-noncleaved cell [2]immunoblastic [3]rearranged

Conclusion: AAL can be divided into three molecular subtypes: 1) a monoclonal process associated with c-*myc* rearrangement and detectable EBV genome, 2) a polyclonal process without evidence of EBV, and 3) a monoclonal CNS process associated with EBV and lacking detectable *c-myc* rearrangement.

TRACK A: BASIC SCIENCE
POSTER SESSION

S.A.360 EXPRESSION OF CELLULAR GENES IN CD4 POSITIVE LYMPHOID CELLS INFECTED BY THE HUMAN IMMUNODEFICIENCY VIRUS, HIV-1: EVIDENCE FOR A HOST SHUT-OFF INDUCED BY CELLULAR mRNA DEGRADATION

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Objective : To investigate the effects on HIV-1 infection on cellular gene expression.
Methods : Three human CD4 positive cell lines (CEM, MT4, C8166) were infected with the LAV strain of HIV-1. The infections were rapid and nearly synchronous. By day 3 postinfection, > 90% of the cells were infected while ≥ 85% of these cells remained viable and therefore suitable for these studies. Radiolabeled protein extracts were analyzed by SDS-PAGE directly or after immunoprecipitation using pooled sera from HIV-1 infected humans. Total RNA was subjected to Northern and slot-blot analysis with various cellular and HIV-1 cDNAs used for probes. Comparisons of the transcriptional rates and translational efficiency of HIV-1 and mock infected cells were made by performing nuclear runnoff assays and polysome analyses respectively.
Results : Cellular protein synthesis levels decreased markedly at times when viral specific protein synthesis was increasing. Total RNA analysis showed a concomitant decrease in steady state levels of cellular mRNAs in infected cells. Runoff assays with nuclei isolated from HIV-1 and mock infected cells demonstrated that the decreases in cellular mRNA levels were not due to declines in cellular mRNAs transcriptional rates. The polysome distribution of cellular mRNAs was virtually identical in mock and HIV-1 infected cells although as expected, the total amounts of cellular mRNAs were significantly lower in virus infected cells.
Conclusion : These results suggest that HIV-1 may encode mechanisms to inhibit cellular protein synthesis, likely as a result of cellular mRNA degradation, rather than specific blocks to cellular mRNA transcription or translation.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Psychiatry: Overview

S.B.361 PSYCHIATRIC MORBIDITY IN HIV INFECTION

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Objective: To describe and compare psychiatric morbidity in HIV infection.
Methods: Volunteer Asymptomatic HIV (n=35), ARC (n=48), AIDS (n=30), and seronegative Control subjects (n=29) provided demographic information and underwent a psychiatric interview. Diagnoses were determined according to the Diagnostic and Statistical Manual III -- Revised (DSM-III-R).
Results: People with AIDS tended to live alone (50%) and be unemployed (70%). There was less unemployment in the Asymptomatic (35%) and ARC (37%) groups, and least among Controls (14%). Cannabis or alcohol abuse was common (30%-46%) and not different among the 4 groups. The most common psychiatric diagnosis in HIV-infected subjects was Adjustment Disorder. Its prevalence was higher among all infected subjects (48%) compared to Controls (21%), but with no differences among the 3 groups of infected subjects (44%-51%). Clinical signs of Organic Mental Disorder were observed in 2% of ARC and 20% of AIDS subjects. There was no significant difference among the 4 groups for any other psychiatric disorder, including Major Depression which was only seldom seen (3%-8%). No group differences were found on the Beck Helplessness Scale or the Profile of Mood States.
Conclusion: HIV infection was associated with an increased prevalence of Adjustment Disorder relative to our Control group. Comparisons with our Controls (which had high psychiatric morbidity: 48% had a DSM-III-R Axis I diagnosis) may underestimate the potential emotional impact of HIV infection in other populations. The high rate of cannabis or alcohol abuse is notable because of its potential adverse effects on the overall physical and mental health of the patient.

S.B.362 PSYCHIATRIC PREDISPOSITION AND CURRENT PSYCHIATRIC FINDINGS IN HIV-INFECTED PERSONS

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Objective: To study the hypothesis that psychiatric predisposition is a consequential determinant of current psychiatric status in HIV-infected persons (HIV+s).
Methods: 95 randomly selected HIV+ Air Force personnel received standard examinations by board-certified or board-eligible psychiatrists for both current and past psychiatric status. Chi-Squared or Fisher's Exact Test were used for statistical analysis.
Results: A current psychiatric diagnosis (40.0% of the sample) was significantly more likely when subjects reported: 1) psychiatric treatment prior to knowledge of HIV-seropositivity (20.0%, p=.01); or 2) before age 18: maternal death (9.5%, p=.02), maternal absence ≥ 60 days (27.4%, p=.04), frequent physical abuse (25.3%, p=.002), any sexual abuse (16.8%, p=.05). There were no significant associations between current psychiatric diagnosis and paternal death, paternal absence ≥ 60 days, or recollections of either parent as overbearing or distant. Current Hamilton Depression Scale score ≥ 12 (18.9%) was related only to past psychiatric treatment (p=.04).
Conclusion: Current psychiatric status in HIV+s appears to be at least partially associated with past stressors, traumas, and psychiatric problems. This suggests that psychiatric predisposition should be included by clinicians and researchers when considering cause and effect relationships in HIV+s who have psychiatric findings.

S.B.363 PSYCHIATRIC STATUS OF HIV+ AND HIV- PARENTERAL DRUG USERS

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Objective. To assess psychopathology in a sample of current and former parenteral drug users (PDUs) using standardized clinical assessment measures.
Methods. Current psychiatric status of 139 predominantly Black PDUs was assessed. (98 M, 41 F; 77 HIV+, 62 HIV-). The Structured Clinical Interview for DSM-III-R (SCID) was used to evaluate Axis I psychiatric syndromes. A version of the SCL-90 was used to measure severity of depression and anxiety. A Global Assessment of Functioning (GAF) Scale rating was assigned to each individual, based on the clinical interview. Each subject was scored on a checklist of 20 physical symptoms that may be related to HIV infection.
Results. 39% of the HIV+ subjects and 30% of the HIV- subjects had a current mental disorder (mood, anxiety, psychotic, adjustment syndromes)(chi sq.= .708; NS). Average SCL depression scale scores were 2.6 for the HIV+ and 2.3 for the HIV- groups (p=.064). Average SCL anxiety scale scores were 2.1 for the HIV+ and 1.9 for the HIV- groups (p=.035). Average GAF ratings were 49.9 for the HIV+ group and 51.3 for the HIV- group (NS). Average number of physical symptoms were 3.2 for the HIV+ and 1.7 for the HIV- groups (p<.000).
Conclusions. Compared to a sample of predominantly white gay men whom we are also studying, this sample of PDUs has a higher rate of psychopathology, lower level of overall functioning, and greater number of physical symptoms. While the HIV+ PDUs had a greater number of physical symptoms than the HIV- subjects, no clinically significant differences were found between these two groups on measures of psychopathology. In this cohort, as with the gay cohort, HIV-seropositivity does not seem to be a contributing factor to higher levels of current psychopathology as measured by standardized clinical measures.

S.B.364 THE PREVALENCE OF PERSONALITY DISORDERS IN HIV+ AND HIV- GAY MEN

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Objectives. To examine the prevalence and types of personality disorders (P.D.) that occur in a cohort of HIV+ and HIV- gay men, since such disorders may influence the occurrence of high-risk behaviors.
Methods. In a five-year prospective study of factors influencing the progression of HIV illness, personality disorders were assessed in 155 volunteer gay men (106 HIV+ and 49 HIV-) with the Structured Clinical Interview for DSM-III-R for Axis II (SCID-II). Axis I disorders were also assessed using the Axis I section of the SCID.
Results. No statistically significant difference was found in the number of personality disorders in HIV+ versus HIV- subjects (chi sq.=1.51), with 33% of the HIV+ subjects and 22% of the HIV- subjects being so diagnosed. The most common diagnoses were Avoidant P.D. (N=14), Histrionic P.D. (N=12), and Borderline P.D. (N=8).
In the total sample, the presence of current substance abuse or dependence was associated with the presence of personality disorders (chi sq.=4.06; p=.04). However, having a personality disorder was not significantly associated with the presence of lifetime substance use disorders. In neither of these analyses were there statistically significant differences between the HIV+ and the HIV- groups.
Conclusion. The prevalence of personality disorders in gay men did not vary by HIV status. In this cohort, subjects with personality disorders do have an increased frequency of current but not lifetime substance abuse, and therefore may now be at greater risk for HIV than those without personality disorders.

S.B.365 STRESS AND COPING IN PEOPLE WITH HIV-INFECTION

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OBJECTIVES: Exploring the relationship between chronic stress (HIV-infection), coping and psychopathology
METHODS: Self report measures to assess coping-behaviour (General Coping Inventory; HIV Coping Inventory), psychopathology (Symptom Check List 90 and Profile of Mood States) were administered to 97 outpatients and 22 inpatients. From the medical records information on physical and immunological condition was collected.
RESULTS: On the total score of the SCL-90 (psychoneuroticism) only 15% have a score below average, 6% average, 17% above average, 28% high and 34% very high. The corresponding percentages for the 'average' population are 50, 15, 15, 15 and 5. They also performeed worse than cardiac patients. Compared to 35% of psychiatric outpatients, only 17.9% of HIV-infected patients have psychoneuroticism scores above average; with respect to depression and anxiety the ratio equals 35% - 18.2%, 35% - 18.5%
Active-positive involvement was strongly associated with lower mood disturbance. Avoidance, depressive reaction/resignation and venting of emotions all correlate positive with the presence of psychopathology. Seeking social support, palliative reaction and comforting cognitions do not significantly correlate with psychopathology.
CONCLUSIONS: Adjustment reactions to HIV infection and AIDS are normal and common; psychiatric syndromes occur less often. The ego has to accomplish a series of adaptations to prevent or mitigate feelings of hopelessness, impotence, and fear of destruction. Avoidant coping is not protecting people from distressful feelings; only active coping/positive reinterpretation correlates negatively with psychopathology.

S.B.366 AXIS V OF DSM-III-R AND BIOPSYCHOSOCIAL ASSESSMENT OF HIV-INFECTED PATIENTS

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Objective: Evaluation of Functional Level (FL) and biopsychosocial assessment among HIV-infected patients(HIV+).
Methods:100 HIV+ and a group of control subjects at risk for HIV infection (HIV-) were examined as regards the FL (DSM-III-R Axis V) and the following variables related to it:Stressfull Life Events(A) , Biomedical Impairment(B), Coping Skills(C) , Socioeconomical and Cultural Level(D) and Environmental Support(E) according to the "Equation of FL" model by Gordon et al.(1988).
Results:HIV+ showed a significantly worse FL(low FL:39%;medium FL:58%;high FL 3%) as compared to HIV-(low FL:13%;medium FL:60%;high FL:27%). HIV+ had a significantly D and E as compared to HIV-:HIV+ had a significantly lower D degree(low D:50%;medium D:32%;high D:18%) than HIV-(low D:17%;medium D:44%; high D:39%) while HIV+ drug-addicts had a significantly worse E(low E:80%; medium E:14%;high E:6%) than HIV- drug-addicts(low E:0%;medium E:22%;high E: 78%).
Conclusion: Our results confirmed that HIV+ had worse FL than HIV- and showed that HIV-seropositivity is especially associated with low D and low E.
References:Gordon RE et al : Using the Axis V Scale to evaluate therapeutic outcome of psychiatric treatment.Can.J.Psych. 33:194-6.1988.

S.B.367 PSYCHONEUROIMMUNOLOGIC ASPECTS OF HIV-1 SEROSTATUS NOTIFICATION.

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Objective: To assess the relationship between cortisol, psychosocial variables and lymphocyte function in gay men entering an AIDS research study in which HIV-1 serostatus was determined.
Methods: Subjects were 46 healthy gay males, not previously tested for anti-HIV-1. Sampling was at baseline (T1), 5 weeks (T2) (72 hours prior to serostatus notification), and 1(T3),2(T4) 3(T5) and 5(T6) weeks post notification. All subjects were anti-HIV-1 negative. Measures included: lymphocyte response to phytohemagglutinin (PHA), plasma cortisol, affective distress (STAI, POMS), denial coping (COPE), intrusive thoughts (IES).
Results: Baseline PHA responses were subnormal and increased significantly from T1-T2 ($p<.02$) and T1-T6 ($p<.01$). Subjects showed a significant change in cortisol over the 6 time points ($p<.001$), with elevation at entry (median=173pg/ml) decreasing to 156pg/ml at T2 and to 133pg/ml at T6. When individual differences in cortisol were related to individual impairments in PHA response, there was significant negative correlation, with the strongest association between T1 cortisol and T2 PHA ($p<.01$). State anxiety, POMS depression and confusion scores were positively correlated with cortisol at T1 and T2 ($p<.05$-$.01$). Multiple regression analysis indicated that denial coping scores and higher cortisol levels predicted lower baseline PHA and that lower baseline denial scores were associated with a greater degree of PHA recovery. Persisting intrusive thoughts about risk of HIV-1 infection at T4 and T6 were associated with higher cortisol.
Conclusions: The decision to learn HIV-1 serostatus and thereby confront the perceived risk of infection functions as an acute psychological stressor at study entry for these risk group men. The transient immunosuppression noted appears related to the decision to abandon previously employed denial strategies and mediated in part by elevated cortisol levels. (NIMH P50MH42455)

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S.B.368 HIV SEROPREVALENCE IN PSYCHIATRIC INPATIENTS

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Objective: To assess HIV seroprevalence and risk behaviors in acute psychiatric inpatients. Methods: Consecutive acute psychiatric patients (N=400) admitted to a hospital in NYC between age 18 to 55 are being tested for HIV in an unlinked design. The waste blood remaining after a patient's routine admission blood tests are performed is tested for HIV. In addition, a chart review of HIV risk behaviors and psychiatric diagnosis is conducted at admission prior to the patient's blood being tested for HIV. Results. To date, 66 subjects have been entered onto the study, the majority of which are females (59%), caucasian (70%) and between the ages of 25 and 39 (57.6%). Four patients (6%) were found to be seropositive. Out of the 4 patients who were seropositive, 3 engaged in homosexual activities and 1 patient had a history of intravenous (IV) drug use. 3 patients are physically asymptomatic and 1 patient has AIDS. Two of the seropositive patients were aware of their HIV status at admission. AIDS risk behaviors were documented in 21% of the sample including former or current IV drug use (10%) and homosexual/bisexual behaviors (5%). Combined risk factors in 6% of the patients were IV drug use and multiple sexual contacts (3%), and homosexual behaviors and multiple sexual contacts (3%). Conclusions. These findings indicate that psychiatric inpatients are at substantial risk for HIV risk behaviors. Acute psychiatric inpatients could benefit from AIDS related services.

S.B.369 DENIAL: THE CONTINUUM OF COPING MECHANISM STYLES WITH REGARD TO HIV INFECTION.

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Objective: To describe the elements associated with denial as an adaptive style in HIV-infected individuals in order to provide more useful counseling.
Methods: Three styles of denial have been identified using subjects from a variety of sites. Psychosocial inventories were administered within the context of a structured interview. Knowledge and belief inventories were administered as were scales indicating levels of involvement with alcohol and drugs.
Results: Fifty-eight randomly selected HIV seropositive clients from different HIV counseling programs presented characteristic differences between knowledge and behavior that were identified as Primary Denial (PD), Secondary Denial (SD), and Denial With No Benefit (NBD). The 3 styles were evenly distributed: PD = 28%, SD = 33%, NBD = 30%. There also appeared to be an upward mobility in the model where 9% migrated from one category to the next higher adaptive style within 2 months of observation (NBD to SD to PD). NBD clients were more likely to engage in unsafe behaviors and less likely report their HIV status to sexual partners.
Conclusion: Three stages of denial appear to be experienced as a continuum in response to HIV infection. Some patients are able to shift to better adaptive styles of defense.

S.B.370 PSYCHOSOCIAL STATUS OF HIV INFECTED MEN WITH HAEMOPHILIA: CONTROLLED INVESTIGATION

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Objective: To study the baseline prevalence and nature of psychosocial problems in HIV+ men with haemophilia, by comparison with HIV- haemophiliacs, in a 3 year prospective study including 6-monthly assessments.
Methods: Thirty-two HIV+ and 31 HIV- men with haemophilia were evaluated to assess their mental status (PSE, POMS, Beck Hopelessness Scale and Depression Inventory, Spielberger's STAI); personality and coping (EPQ, COPE, Hardiness Scale, Perceived Stress); self-esteem (Self Concept Scale); life events (Life Experiences Survey); social adjustment and support (SAS-M, Social Provisions Scale); and sexual adjustment and problems.
Results: All HIV+ men had been infected for at least 3 years, and 26 were asymptomatic (CDC II). Results were unchanged whether or not symptomatic individuals were included in the analysis. HIV+ individuals had generally less favourable scores on most measures, and differences were statistically significant for several, including type of coping strategies used; their perceived need for greater social support; the adverse impact of HIV infection on their sex lives and plans to have a family, and their fears of infecting partners through sex in spite of using condoms.
Conclusion: HIV+ men with haemophilia, even while asymptomatic, manifest significantly greater difficulties than haemophiliacs without HIV disease.

S.B.371 POSITIVE AND NEGATIVE CHANGES IN RESPONSE TO THE THREAT OF AIDS: PSYCHOLOGICAL ADJUSTMENT AS A FUNCTION OF SEVERITY OF THREAT AND LIFE DOMAIN

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Objective: Taylor (1988) posits that individuals facing severe threat interpret threatening information so as to minimize negative implications and maximize benefits. The current study sought to investigate psychological changes in different areas of life and associated with varying levels of threat from AIDS.
Method: The sample consisted of 292 gay and bisexual men participating in the UCLA Multicenter AIDS Cohort Study (MACS) who knew both their HIV status and CD4 cell level. Participants completed a questionnaire examining how the threat of AIDS changed 5 life domains: daily activities/priorities, view of the future, view of the self, view of the world and interpersonal relations. Three groups defined low to high severity of threat: HIV negative men, HIV positive men with normal CD4 cell levels, and HIV positive men with depleted CD4 cell levels.
Results: On average, subjects reported significantly more positive than negative changes. Daily activities, priorities, and interpersonal relations were characterized by positive changes. View of the world was typified by negative changes. Increased negative changes in view of the future were associated with greater severity of threat. In view of the self, CD4-depleted HIV positive men reported the most negative changes while HIV positive men with normal CD4 levels described few negative changes even compared to HIV negative men.
Conclusion: Overall, the results suggest that gay men successfully derive benefit from the threat of AIDS--up to a point, after which negative changes may be difficult to minimize. Other implications and results will be discussed.

S.B.372 PSYCHOSOCIAL FACTORS ASSOCIATED WITH PROGNOSIS IN AIDS

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Objective: To assess how psychosocial factors are associated with prognosis in AIDS.

Methods: The study population included 58 pts. with CDC defined AIDS with the following risk factors: homosexuality (36), intravenous drug use (15), transfusion (1), and heterosexual contact (6), in whom race, sex, age, no. and type of opportunistic infections and presence of a support system (live-in significant other) were recorded. The Brief Symptom Inventory (BSI) was administered at 0 and 6 months.

Results: Multiple logistic regression analysis revealed that significant associations with early mortality (death with 12 mos. of AIDS dx.) were black race, lack of support systems, and a psychological symptom pattern indicating high distress. The pts. with death in 12 mos. showed higher initial levels of distress with a significant increase over 6 mos. (Chi sq.= 26.123, $p < 0.0001$); none had a support system. In contrast, the 47 pts. who lived over 1 yr. showed initial levels of distress with no change over 6 mos. 67% (39) of these pts. are alive at a mean of 18 mos. after AIDS dx.. The 8 deceased pts. lived a mean of 23 mos.; all had a support system. Risk group, no. or type of opportunistic infections, sex, or age were not correlated with prognosis after AIDS diagnosis. Other factors identified as important in early diagnosis of AIDS included 4.3 mos. lag time between change in health of pt. and dx. of AIDS by M.D. among 18 pts., histories of syphilis (50%), gonorrhea (66%), genital herpes (33%), and hepatitis B (33%), and regular use of alcohol and/or drug use among 100% of sample.

Conclusion: Early psychosocial intervention is indicated in pts. who are black, lack support systems, and/or exhibit high levels of psychological distress. Early dx. of AIDS may be confounded by unapparent co-factors.

S.B.373 COPING ABILITIES OF HEMOPHILIACS WITH HIV-INFECTION

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Objective: Comparison of HIV-Ab-positive and -negative hemophiliacs in order to reveal any differences in coping abilities regarding hemophilia and HIV-infection; consideration of the possible influence of early parent-child-relationships on the coping skills.

Methods: By depthpsychological interview technique we investigated until now 50 adult hemophiliacs with severe hemophilia A, who used nearly the same amount of clotting factors. 30 of them are HIV-Ab-positive, the others are HIV-Ab-negative. The interviews were rated according to a coping manual.

Results: The HIV-infected ones seem to react in the same way to the traumatic impact of the HIV-infection as to their basic illness hemophilia, i.e. by denial, minimizing, withdrawl and nonacceptance of illness without any possibilities to express their rage and aggressions. HIV-Ab-negative ones, opposed to this, seem to cope with their hemophilia by less denial, extraversion and possibilities to live up to their aggressions. As to early childhood, there also seem to be differences between both groups, especially the integration in the family, the possibility of individuation, and at least, the acceptance of being handicapped.

Conclusion: The differences in coping abilities we found among HIV-Ab-positive and negative hemophiliacs with respect to their basic illness might point out to some psychosocial cofactors possibly influencing the acquired disease. We believe the differences in coping abilities to be dependent on the early parent-child-relationships. Our findings should, therefore, be taken into account in psychosocial care.

S.B.374 PSYCHOLOGICAL ASPECTS AND PARTICULAR PROBLEMS IN HIV INFECTED WOMEN.

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AIDS Information Center. CONASIDA. Mexico City.

OBJECTIVE: To identify the personality elements and particular problems present in the HIV infected women in order to offer a better psychological support.

METHODS: From 60 women attending the AIDS Information Center since november 1987 to december 1989, all of them got a positive result for HIV infection. Sociodemographic data, sexual behavior, risk factors and health status were registered; we particulary focus on the following aspects: maternity, the relationship with their sexual partner and emotional reactions presented when seropositivity has to be faced.

RESULTS: From the 60 women infected the age ranged from 18 to 54 years old. Most of them were asymtomatic HIV carriers. The main risk factors were: sex partner from an HIV infected person (30%), prostitution (38.33%) and blood transfusion (21.66%).
90% of the women had children, 6.66% were pregnant. The children average number was 2.
From the 60 infected women only 20 accepted to recieved psychological support, but only 5(25%) of them were able to assist.

CONCLUSIONS:
1. There is an increasing number of women that decide to be tested for HIV infection.
2. The population that goes to the AIDS Information Center, is different from the one reported at Health Ministry in Mexico.
3. Most infected women in the AIDS Information Center are lower class, people with poor scholarity in order to get a job, have children and are frecuently abandoned by their sexual partner.
4. Women with children always give priority to the child, so they delegate themselves to a second place.

S.B.375 PSYCHOSOCIAL PROFILE IN A POPULATION ATTENDING AN HIV TESTING AND COUNSELING CENTER IN MEXICO CITY

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Objective: To describe the prevalence of psychosocial issues associated with HIV infection in persons undergoing testing and counseling in Mexico City.

Methods: Using the DSM-3 diagnosis criteria, the personality profile and the identification of symptomatic depression was defined in HIV infected outpatients who attended the AIDS Information Center in Mexico City

Results: As of December 1989, a total of 245 male patients were evaluated by three psychologists (AL; LEDC & GM), who were blinded to HIV-serostatus of patients.

Personality traits:	Group I Homo-Bisexual HIV (+) % (n=58)	Group II Homo\Bisexual HIV (-) % (n=96)	Group III Heterosexual HIV (-) % (n=91)	Group I vs II OR(95%LC)	Group I vs III OR (95%LC)
Paranoid	22.2	20.8	21.9	1.1 (0.4-2.5)	1.0 (0.4-2.4)
Schizoid	3.4	8.3	5.4	0.3 (.06-2.1)	0.6 (.08-3.7)
Histrionic	22.4	18.7	20.8	1.2 (0.5-3.0)	1.1 (0.4-2.6)
Narcisist	22.4	18.7	8.7	0.2 (.05-0.9)	0.5 (0.1-2.4)
Compulsive	1.7	3.1	8.7	0.5 (.02-6.0)	0.1 (.01-1.5)
Affective disorder:					
Depression	41.3	17.7	16.4	3.2 (1.4-7.3)	3.5 (1.5-8.2)

Conclusion: No significant associations betwen personality and HIV serostatus were observed. Depression is the only affective disorder associated with HIV seropositivity. The prevalence of depressive disorders among seronegative in homo/bisexual men was similar to that observed for seronegative heterosexual men

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.376 IS QUALITY OF LIVE ASSOCIATED WITH A SPECIFIC RISK BEHAVIOUR IN HIV-POSITIVE INDIVIDUALS ?

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Objective: Evaluation of psychological wellbeing and quality of life in a sample of HIV-positive individuals to learn more about their sociocultural problems. Influence of knowledge of being seropositive on quality of life (measured by the time since the first positive test).
Methods: A consecutive sample of 100 asymptomatic HIV-positive individuals, CDC-stage II and III, from 1149 HIV-infected patients of the on-going Swiss cohort study at our AIDS-outpatient clinic with regular physical and laboratory examinations at six months' intervals is investigated. This is a prospective longitudinal study with five interviews at identical intervals. In the first round, started in October 1989, individuals are interviewed with a set of semi-structural questionnaires including a psychopathological interview, SCL-90-R, an investigation of social networks and social adjustment, instruments referring to sociodemographic data and social behaviour . Data are analysed by multivariate methods for categorial variables such as multiple classification analysis and loglinear models.
Results: Until January 1990, 70 individuals were interviewed and included 35 homo-/bisexual men (50%), 19 heterosexual men (27,1%) and 16 women (22,9%). Among the heterosexual individuals were 25 drug addicts. These groups were compared in their quality of life expressed by qualitative and quantitative aspects of their social networks. Predominantly in drug addicts, HIV-positivity appears to be associated with the threat of social isolation and increasing social stress. In contrast, gay men seem to dispose of better social support systems. Social mechanisms of the sample of 100 HIV-positives will be discussed.
Conclusions: Considering deficits in their quality of life, HIV-positive individuals appear to be confronted with different problems related to their specific sociocultural context. Assuming that maintenance and improvement of psychosocial wellbeing and quality of life are important topics in psychosocial care of HIV-positive individuals detailed analyses of these different dimensions are mandatory. A precise knowledge of these dimensions can improve both our understanding and care for HIV-positive persons, which subsequently is likely to ameliorate their prognosis.

S.B.377 CHANGES IN QUALITY OF LIFE IN PATIENTS WITH HIV INFECTIONS

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Objective: This prospective cohort-study describes the quality of life of HIV infected patients compared to the general population and other reference groups as well as changes in quality of life during the course of the disease
Methods: All patients with HIV infection attending the University Hospital Utrecht for treatment since June 1988 are invited to complete a quality of life questionnaire every four months. Data collected concern demography, activities of daily life (ADL), Karnofsky-score, psychological state (anxiety, depression), Index of Well-Being and future outlook.
Results: Patients with HIV infection demonstrate a lower quality of life than the general population, especially with respect to measures of psychological distress. Among HIV infected patients, the Index of Well-Being is lowest for CDC-II patients and similar for CDC-III and CDC-IV patients. Anxiety and depression levels are highest for CDC-II patients (in case of anxiety comparable to patients prior to hearttransplantation), medium for CDC-III patients and lowest for CDC-IV patients, while physical disability increases during the course of the disease. Preliminary longitudinal analysis of the same data confirm these findings.
Conclusion: Psychological adaptation may explain decreasing levels of anxiety and depression as the disease progresses. The results for different CDC-categories notify the need for (professional) support among CDC-II patients.

S.B.378 PSYCHIATRIC DISORDER IN HIV INFECTED GAY MALES

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Objective: The study investigated the presence of lifetime and current psychiatric disorder in two groups of homosexual males: 1) men who were HIV+ but asymptomatic, (N=25), and 2) men with ARC or AIDS N=17). Method: As part of an extensive baseline neuropsychological and psychiatric evaluation, structured diagnostic interviews from which DSM-III-R diagnoses were determined. Results: Seventy-two percent of HIV+ compared to 100% of ARC/AIDS (SCID-R) patients criteria for one or more psychiatric disorder. Sixty percent of HIV+ reported lifetime substance abuse with 8% reporting current abuse. In contrast, 76% of ARC/AIDS reported lifetime substance abuse with 6% reporting current abuse. Forty-four percent of HIV+ reported lifetime affective disorder (i.e., bipolar, major depressive, dysthymic, adjustment disorder with 4% receiving current diagnoses. In contrast, 76% of ARC/AIDS reported lifetime affective disorder with 12% receiving current diagnoses (χ^2 p<.025). Both groups reported episodes of affective disorder precipitated by either confirmation of HIV infection or progression of the disease process. Specifically, 8% of HIV+ reported an episode of affective disorder following HIV+ diagnosis, and 29% of ARC/AIDS reported affective episodes following HIV+ diagnosis, ARC diagnosis, or AIDS-related hospitalization. Anxiety disorders were less frequent, with 12% of HIV+ and 6% of ARC/AIDS reporting lifetime anxiety disorders. Conclusion: The data suggest that substance abuse and affective disorder are particularly prevalent in HIV infected gay men. Episodes of affective disorder may be precipitated by confirmed progression of disease. In addition, it is possible that previous episodes of depression may have a role in disease progression.

S.B.379 TYPES OF SOCIAL SUPPORT AND THEIR RELATIONSHIPS TO DEPRESSIVE SYMPTOMS IN HIV POSITIVE MEN

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Objective: To determine the relationships between self-reported levels of depression and types of perceived social support in HIV+ military patients. Four types of perceptions examined were Tangible (availability of material aid), Self-esteem (availability of positive comparison when comparing one's self to others), Appraisal (availability of someone to talk to about one's problems), and Belonging (people with whom one can do things).
Method: Multiple regression analyses were used to examine the relationships between the Zung Depression Scale and four scales from a modified Interpersonal Support Evaluation List given to 225 HIV infected males (mean age = 29.3) undergoing medical and psychological evaluation at a military hospital.
Results: Overall social support (Total ISEL score) was very significantly related to level of reported depression (F (3,220) = 30.5, p. < .0001; Adjusted R^2 = .34). In stepwise analysis, the Self-esteem scale itself accounted for most of the variance in the depression score (Adjusted R^2 = .31), with other variables explaining relatively little further variance.
Conclusion: In this group of relatively healthy, young, seropositive males, psychosocial support is related to depression primarily in the domain of self-esteem supports, or the availability of a comparison group for positive comparisons. Cause and effect relationships require further study.

S.B.380 DETERMINANTS OF SOCIAL SUPPORT AMONG GAY MEN

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Objective. 1) To examine psychosocial and health-related factors affecting satisfaction with social support among a population-based sample of gay men and 2) to identify any support related factors having particular importance for gay men experiencing HIV symptoms.
Methods. Respondents were 518 gay men who completed interviews in the 1984 and 1986 waves of the San Francisco Men's Health Study. The sample was drawn from 19 S.F. census tracks having the highest incidence of AIDS in 1984. Regression analyses were performed to assess: 1) concurrent determinants of support satisfaction, and 2) factors predicting changes in support over the two year period. Support satisfaction consisted of three dimensions: emotional, informational and practical support. Three sets of determinants were assessed: family disclosure variables, indices of gay community integration, and health factors (HIV symptoms and depression). Age and education were controlled for in both analyses.
Results. Both number of HIV symptoms and depression were independently related to reductions in support satisfaction over the 2 year period ($p < .05$ for both). Positive changes in support were associated with respondents' personal acceptance of gay identity and communication with family members about AIDS ($p < .05$ for both). Crossectional determinants were essentially consistent with these longitudinal predictors. Several statistical interactions involving HIV symptoms were also found crossectionally. Notably, personal gay acceptance and talking to family about AIDS were more strongly related to support for men with greater HIV symptoms than for those with fewer symptoms.
Conclusions. The finding that number of AIDS-related symptoms is related to reductions in support satisfaction may reflect problems in meeting the increased needs and demands of those who are becoming ill. Acceptance of gay identity and discussing AIDS concerns with family members seem to be especially important once AIDS symptoms appear. Intervention programs successful in reducing support deficiencies among men experiencing symptoms may need to involve family members and provide psychological counseling around issues of gay identity.

S.B.381 SOCIAL, EMOTIONAL, AND NEUROPSYCHOLOGICAL COMPONENTS OF FUNCTIONAL STATUS IN MINORITY AIDS PATIENTS

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Objective: We used a case study approach to explore the effects of neuropsychological and social variables on functional status among white, Black, and Hispanic inner-city people with AIDS (PWAs). We hypothesized that functional status -- i.e., ability for self-care -- varies by neuropsychological and emotional functioning, as well as social variables of social support, family, and relationship status.
Method: PWA'S on a prophylactic pentamidine regimen completed individual assessments of premorbid psychosocial status, memory, problem solving, communication ability, as well as emotional and social functioning at six month intervals. Health status was rated via the Karnofsky scale.
Results: There were ethnic differences in functional status, emotional functioning, and social support. Black and Hispanic PWAs reported greater distress, fewer social supports, and lower levels of community functioning than did Caucasian PWAs. At six month follow-up, PWAs with few initial social supports and lower neuropsychological functioning showed significant declines in functional status.
Conclusion: Functional status is influenced by personal and social resources. Inner-city PWAs with few resources showed poor functional status and substantial decline over time. Programs for PWAs should provide concrete coping and social skills to prevent losses in daily living skills. A preliminary cognitive-behavioral program we are developing to enhance functional ability among PWAs will be discussed.

S.B.382 COPING STRATEGIES AND RESPONSE STYLES IN HOMOSEXUAL SYMPTOMATIC SEROPOSITIVE MEN

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Objective. To document the prevalence and patterns of coping with HIV-related stressors in homosexual symptomatic seropositive men.
Methods. 100 seropositive homosexual men with initially at least one HIV-related symptom were administered a semi-structured interview designed to elicit perceived HIV-related stressors at 3 time points, 9 months apart, and how they coped with these stressors. Stressors and coping strategies were subsequently coded into categories with excellent interrater reliability.
Results. Stressor categories included: HIV and diagnostic testing; severe symptom or illness episodes; treatment issues; complications with family, work, or school; physical and psychological limitations or losses; and concerns about the future. Several major response styles emerged: (a) 53% of subjects were characterized by a "pro-active" response style consisting of accepting responsibility, seeking social support, planning, assertiveness, prioritizing, and maintaining a positive attitude; (b) 22% evidenced a "control/denial" response style which utilized strategies of escape/avoidance, distancing self, rationalization, and distraction; (c) 8% responded mainly by "taking care of self," through such means as exercise, vacations, or meditation. Almost one-quarter of the "control/denial" group reported impulsive or self-destructive behaviors, including drug/ alcohol abuse or risky sexual behaviors; these behaviors did not occur in the other groups.
Conclusion. An understanding of how individuals cope with HIV-related stressors is critical to developing appropriate psychosocial interventions, and identifying individuals whose coping strategies may create new problems.

S.B.383 HIV DISEASE PROGRESSION AND MENTAL HEALTH: LACK OF ASSOCIATION

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Objective: While the incidence of mental distress in hospitalized AIDS patients has been well described, far less is known about the mental health of the majority of HIV-infected individuals who represent a wide spectrum of HIV disease. The association between mental health and stage of HIV disease was investigated in a large sample of such men using a longitudinal cohort design.
Methods: Participants in this study were recruited from a cohort of 1020 homosexual men enrolled in the Chicago Multicenter AIDS Cohort Study (MACS). Data from standardized physical exams, including CD4 count, serology, and presence of lymphadenopathy or thrush, were used to categorize individuals according to a disease staging system. Mental health was measured using the self-administered Hopkins Symptom Checklist (HSCL), CES-D, as well as AIDS-specific questions. The association between stage of disease, disease progression and mental health was examined across 9 biannual visits, 1984-88.
Results: The HSCL somatization subscale exhibited the strongest pattern of association with disease stage across all visits with significant associations at 4 waves ($p < .05$). Although other significant associations were found, there was no consistent relationship between stage of disease and mental health nor did disease progression predict change in mental health in subsequent visits.
Conclusion: We conclude that among men in the early stages of HIV disease, neither the biological state of disease nor disease progression consistently lead to mental distress. This is consistent with research on other life threatening diseases where poor mental health is only associated with the highest levels of physical impairment. Further research to identify the relationship of distress to specific AIDS-related events appears indicated.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Psychiatry: Suicide and Depression

S.B.384 SUICIDE IDEATION AND ATTEMPTS IN HIV ILLNESS

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Objective. To examine the lifetime prevalence and clinical correlates of suicidal ideation and attempts in HIV+ and HIV- homosexual men and community controls.
Methods. HIV+ and HIV- ambulatory homosexual men (N = 105) in a longitudinal cohort study were examined for suicidality using the Diagnostic Interview Schedule. Community controls were sociodemographically matched with heterosexual men obtained from the Epidemiologic Catchment Area (ECA) study (N = 294).
Results. Lifetime proportion of suicide ideas or attempts were:

Idea/Act	% CDC IV (N = 22)	% CDC II-III (N = 48)	% HIV- (N = 34)	% ECA (N = 294)
Thought of death	72.7	58.3	55.9	19.4
Wanted to die	13.6	31.3	23.5	7.5
Thought of suicide	54.6	50.0	61.8	9.2
Attempted suicide	9.1	6.3	9.1	1.4

Lifetime presence of a major psychiatric disorder (depression, substance abuse) was elevated in high risk HIV+ and HIV- men compared to controls and contributed strongly to their higher rates of suicidal ideas/attempts.
Conclusions. HIV+ men, and men at high risk for HIV infection, may be at increased risk for suicide because of psychiatric syndromes rather than HIV+ alone.

S.B.386 COPING AND NEUROPSYCHOLOGICAL CORRELATES OF SUICIDALITY IN HIV

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Objective: AIDS is thought to increase risk of suicide, but risks and correlates of suicidal behaviors in earlier stages of HIV infection are not well studied. We examined relationships among suicidality, coping, social support, and neurocognitive impairment in men at various stages of illness.
Methods: Homosexual men in CDC IV (N = 22) and CDC II/III (N = 48) participating in a longitudinal cohort study were evaluated with the Lazarus Ways of Coping Checklist, Sarason Social Support Questionnaire, and an extended Halstead-Reitan neuropsychological (NP) battery. Lifetime suicidality (defined as 2 weeks or more duration of preoccupation with death, or wanting to die, or suicidal ideation or attempt) was determined by the Diagnostic Interview Schedule (DIS). Coping, social support, and NP impairment were compared in men with and without lifetime suicidality.
Results: Compared to men without suicidality, subjects with lifetime episodes of suicidality had (1) coping strategies using more avoidance ($p<.02$) and less seeking social support ($p<.05$), and (2) tended to have a smaller size of social network. NP impairment at baseline was not associated with lifetime suicidality. On one year followup (N = 42), NP deterioration tended to relate to increased coping by use of self blame, but was not associated with annual incidence of suicidality.
Conclusions: Avoidant coping and isolation are associated with increased suicidal behaviors. NP decline may increase maladaptive coping. Targeted training in coping strategies might help reduce risk of suicide in the context of NP impairment.

S.B.385 DEPRESSIVE SYMPTOMS AMONG HOMO-BISEXUAL MALES ATTENDING AN HIV TESTING CENTER IN MEXICO CITY.

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Objective: To examine the prevalence of depressive symptoms as a psychiatric disorder in homosexual and bisexual men, using a previously validated self-reported questionnaire.
Methods: As part of an intervention trial among homosexual-bisexual men, each participant in the study was tested for HIV and filled out a standarized questionnaire that included the Center for Epidemiological Studies-Depression Scale (CES-D).
Results: As of January 1990, 84 men were included, 68% were homosexual and 10% were bisexual. The overall prevalence of depressive symptoms was 41.7%, with a prevalence of 59.2% in HIV seropositives and 28.1% in HIV seronegatives. ($p<0.05$)

	Depresive Symptoms YES % (n=35)	NO % (n=48)	OR (95% CL)	p value*
HIV infected	64.0	32.3	3.7 (1.1-12)	<0.05
>30 years	70.6	59.1	2.1 (0.7-6.3)	0.13
Alcohol compsumption	62.5	59.5	2.4 (0.6-10)	0.15
Unemployed	38.4	27.2	1.6 (0.2-13)	0.57
Single	96.9	97.6	0.7 (0.02-29)	0.85

Conclusion: The high prevalence of depressive symptoms in seropositives and seronegatives could reflect selection bias of the population and the anguish that accompanies testing. This study shows that the major factor associated with depressive symptoms is seropositivity, and stresses the necessity of integral support for HIV infected persons.

S.B.387 ATTEMPTED SUICIDE AND HIV INFECTION: EPIDEMIOLOGICAL ASPECTS IN A PSYCHIATRIC WARD.

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Objective. We wanted to verify the prevalence of the attempted suicide (AS)in seropositive patients (pts) in our psychiatric ward.
Methods. For a period of two years,we usually submitted to the HIV test all the consentient hospitalized pts. Finally we compared the most important clinical characteristics of these subjects who AS and who were seropositive with those seronegative. The statistical significance of the prevalence in the two groups was made employing the chisquare test.
Results. 6,5% (31/475) of the subjects hospitalized resulted to be positive to HIV. The AS emerged to be 8,3% (66/793) of the pts. It was possible to submit 59% (39/66) of the pts who AS to the HIV test. In the group of seronegative subjects the AS was 6,7% (30/444) of the pts,while in the seropositive pts the prevalence was 29% (9/31). A chisquare test on these data revealed a reliable difference in suicide rate between seronegative and seropositive ($p> .01$)
Conclusions. 1) Our study confirms a notable prevalence of seropositive pts to HIV in the psychiatric population (6,5%) compared to the general population (0,4%). 2) The AS appeared to be a further complication in seropositive pts to HIV suffering from depressive syndrom.

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S.B.388 SUICIDAL THOUGHTS, SUICIDAL BEHAVIORS, AND SUICIDE RISK FACTORS IN HIV-SEROPOSITIVES AND ALCOHOLIC CONTROLS

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Objective: To study the hypothesis that the frequency of suicidal thoughts, suicidal behaviors, and traditional suicide risk factors is higher in HIV-infected (HIV+) persons than in alcholics, who have a suicide risk 9-22 times that of the general population.
Methods: 117 randomly selected HIV+ Air Force personnel and 72 HIV-seronegative admissions to an Air Force inpatient alcohol treatment unit received identical standard examinations by board-certified or eligible psychiatrists.
Result: The two groups (HIV-Alcoholic) failed to differ significantly either demographically or on a number of qualitative measures: suicide an option over the next year (16.7%-11.1%): suicide plan (3.6%-0.0%): suicide attempt during past year (2.6%-4.2%); major depression diagnosis (18.0%-26.4%); Hamilton Depression Score (HDS) $\geq$ 12 (19.7%-6.9%): HDS $\geq$ 16 (6.0%-6.9%); Hamilton Anxiety Score (HAS) $\geq$ 12 (13.7%-3.4%): and HAS $\geq$ 16 (6.0%-3.4%). As expected, the alcoholics were significantly ($p \leq .01$) more likely to have a diagnosis of alcohol dependence (9.5%-100.0%) and a Michigan Alcoholism Screening Test score $\geq$ 5 (20.0%-100.0%).
Conclusion: These HIV+ persons and severe alcoholics have equivalent frequencies of suicidal thoughts, suicidal behaviors, and suicide risk factors (apart from alcoholism). This suggests that the level of concern and vigilance among clinicians about suicidality in HIV+s should be at least as high as when treating alcoholics.

S.B.389 DEPRESSION IN THE CONTEXT OF HUMAN IMMUNODEFICIENCY VIRUS INFECTION: IMPLICATIONS FOR TREATMENT

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Symptoms of depressive disorders frequently occur in individuals who have human immunodeficiency virus (HIV) infection. Yet, the relationship between these depressive disorders and HIV infection is still poorly understood. This study examines the nature of depressive disorders in HIV infection and reviews treatment efficacy and side effects of cyclic antidepressant medications. A chart review on male outpatients was conducted to document the type of depressive symptomatology and the nature of antidepressant treatment. Forty-five individuals testing positive for HIV infection were compared with a like number of individuals who had no known risk factors for HIV infection. While depressive symptoms were similar among the two groups, preliminary results suggested that HIV-positive individuals report greater decreases in sleep and appetite than HIV-negative comparison group. Several antidepressant treatment approaches provided favorable results based on efficacy and side effect ratings. In particular, nortriptyline, imipramine, and fluoxetine all earned favorable efficacy ratings while producing minimal side effect ratings in both HIV-positive and comparison patients. Among the HIV-positive patients, the best overall response was found in the symptomatic group, while patients with ARC and AIDS did less well. The study suggests the need for further investigation of antidepressant treatment in HIV-positive individuals.

S.B.390 THE BEHAVIOR OF BECK AND ZUNG SCALES ON AIDS PATIENTS: A PROSPECTIVE STUDY.

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OBJETIVE: To observe and analyze the behavior of Beck and Zung scales on AIDS patients, to guide the selection of adequate instruments for the follow - up of depression symptoms.
METHODS: A prospective design was used. During a period of 9 months a group of 18 AIDS patient was followed. The selection criteria were : a) Case Diagnosed of HIV+ Stage III and IV (CDC Classification) with out a prior hospital admissions; b) Resident of the México City Metropolitan Area; c) Acceptance by an informed consent to participate in the study. Beck and Zung sel administrated scales were filled out by the patients every month, when specially trained physicians visited the household. The average total score per visit for each scale were analyzed by an ANOVA with trend analysis. To adjust the trend analysis the orthogonal coefficients were calculated (Kirk method).
RESULTS : 100% males; average age 31 yrs; 72% single, 16% married and 12% divorced. Beck scale showed a non-significant ($p<.01$) trend increase. PHES* and PES** Zung's subscales showed a significant trend ($p<.01$), although PES* subscale had a higher significance with symptoms such as hopeless; indecisiveness, irritability and suicidal ideation among other. PAS*** subscale presented a horizontal trend ($p<.05$).
CONCLUSION: a) Both scales showed an up ward trend of reported symptom's severity. Nonetheless, Zung scale was more sensitive, which can be explained by the negation mechanism often see in AIDS patients; b) This study suggest use Zung scale, with emphasis on PES subescale to monitor depression symptoms in AIDS patients, at an outpatient or household setting; c) As a follow-up of this study, Zung scale needs to be validated, with a clinical structure interview and measured it's sensitivity and sensibility, in order to use it as an instrument that can be easily administered.
* PES= Physiological Equivalent Symptoms subscale, ** Psychological Equivalent symptom subscale
*** Persitent affective symptom subscale

S.B.391 CORRELATES OF DEPRESSIVE SYMPTOMATOLOGY AMONG PEOPLE WITH AIDS

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Objective: To describe correlates of depressive symptomatology among people with AIDS.
Methods: In-person interviews were conducted with 1031 clients of the Robert Wood Johnson Foundation's AIDS Health Services Program. Clients were sampled at nine Program sites across the U.S. Depressive symptoms were measured using a brief screening scale developed and validated previously (Burnam et al., Medical Care, 1988, 26, 77). Respondents were classified as depressed or non-depressed using the cutoff recommended by scale developers. Also measured were social support (number of tasks for which client would be "very likely" to receive help), current physical symptomatology (frequency of experiencing each of 9 symptoms), and functioning (number of instrumental activities that were at least "somewhat difficult" to perform).
Results: Overall, 42.8% of the sample were depressed. Bivariate analyses showed that depression was related to gender (56% of females vs. 41% of males) and employment (47% of unemployed vs. 32% of employed). Pearson correlations showed that depression was related to months since AIDS diagnosis (.12), social support, (-.14), functioning (.15), and physical symptoms (.31). Logistic regression analysis showed that symptom severity, social support, and gender were statistically significant correlates; other variables were not significant, controlling for these three. Adjusted odds ratios were 1.108 for symptoms, 0.905 for support, and 0.621 for gender (male).
Conclusions: Physical symptoms are strongly related to depression. Having social support is negatively related to depression, suggesting the importance of maintaining and enhancing social ties for people with AIDS.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.392 HIV-RELATED MAJOR DEPRESSION: RESPONSE TO ZIDOVUDINE

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Objective: The clinical features, differential diagnosis, and etiological implications of the remission of psychiatric symptoms coincident with zidovudine treatment in a clinical series of 5 HIV infected patients are presented.
Method: Five HIV infected patients referred for psychiatric evaluation of depressed mood were followed longitudinally. Each patient received serial psychiatric diagnostic evaluations by a psychiatrist using Diagnostic and Statistical Manual III-Revised criteria.
Results: One patient, a 23 year old HIV positive man with ARC presented with depressed mood and associated psychiatric symptoms meeting DSM III-R criteria for a Major Depressive Episode, in the absence of clinically detectable cognitive impairment. The symptoms of the Major Depressive Episode did not respond to an adequate trial of tricyclic antidepressant therapy, but did remit coincident with treatment with zidovudine, raising the possibility that this patient had an HIV-related organic mood disorder. In addition, significant improvement in depressed mood occurred coincident with zidovudine treatment in four other patients diagnosed with ARC or AIDS, who also met some, but not full criteria for Major Depressive Episode.
Conclusion: Analogous to the recent findings of the AZT Collaborative Working Group indicating that AIDS related neuropsychological impairment improves with zidovudine, these case reports raise the possibility that HIV infection may be associated with an organic mood disorder that is also responsive to zidovudine treatment. These findings suggest that for this possible variant of AIDS related CNS pathology, antidepressant medication alone may not be sufficient and anti-viral treatment, such as zidovudine, may be required.

S.B.394 THE BECK DEPRESSION INVENTORY AND AN ANALOG SCALE AS SCREENING DEVICES FOR HOSPITALIZED AIDS PATIENTS

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Objective: The Beck Depression Inventory (BDI) and an analog scale of five faces--ranging from a pronounced frown to a pronounced smile--were evaluated as instruments for brief assessment of acutely ill, inner-city AIDS patients.
Methods: The BDI and analog were administered to 39 hospitalized AIDS patients in a New York City AIDS center.
Results: Contrary to clinical observations, the mean BDI score was 24.9, which falls in the severely depressed range. The mean physical subscale score was 12.6, with no significant difference between males and females. The mean emotional subscale score was 10.9. The female mean (16.5) was significantly higher than the male mean (10.4) ($F=7.06; p=.01$). With the frown scored as 1 and the smile as 5, the mean analog score was 3.46. The analog scores failed to correlate significantly with either the BDI scores or the emotional subscale scores. A significant correlation (-.489) was found between the analog scores and the BDI physical subscale scores ($p=.002$).
Conclusion: Because of the BDI's emphasis on physical symptoms, which are extreme in hospitalized AIDS patients, the instrument fails to provide a clinically meaningful score for diagnosis. The emotional subscale score may better assess depression but extensive validation efforts with this population are required. The significant correlation between the analog and BDI physical subscale scores may indicate patients are reporting their physical, rather than emotional, plight on the analog.

S.B.393 DSM-III-R AND RATING SCALES FOR DETECTION OF PSYCHOPATHOLOGICAL DISORDERS AMONG HIV INFECTED SUBJECTS.

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Objective: to evaluate prevalence of psychiatric disorders by DSM-III-R criteria and Self-Rating scales.
Methods: We examined 250 HIV infected subjects(40% homosexuals,56% drug-addicts,4% heterosexuals) with Zung Anxiety Scale(cut-off=50),Zung Depression Scale(cut-off=55),Anxiety and Depression sub-scales of SCL-90-R,and with CIDI(Composite Intern.Diagnostic Interview)according to DSM-III-R.The mean lenght of time elapsing from HIV diagnosis was 16.2±15 months.
Results: 80% of subjects had psychiatric disorders according to DSM-III-R criteria: Disthymia 40%,Adjustement Disorders 36%,Somatoform Disorders 4%.According to the Zung Anxiety and/or Depression Scales the presence of anxious and /or depressive symptoms was found in 50 out of 250 patients(20%). According to the Anxious and/or Depressive sub-scales of SCL-90-R,150 out of 250 patients(60%) had anxious and/or depressive symptoms.
Conclusions: Respect to the clinical diagnosis,the ZAS and/or ZDS sensibility is 25% while the one of SCL-90-R is 55%. Therefore the utilization of Self-Rating Scales reduces the possibility of correctingly identifying the psychopathological disorders in HIV infected patients.

S.B.395 Treatment of Anxiety in HIV Positive Asymptomatic Men With Buspirone.

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Objective: Reactive anxiety is a profound problem for those individuals diagnosed as HIV seropositive. Conventional anxiolytic agents often produce adverse side effects (sedation) and the need for alternative treatment is essential. This study examines the efficacy of a new anxiolytic treatment (buspirone) in HIV positive asymptomatic gay men.
Methods: Weekly clinician assessments evaluate a spectrum of both generalized and AIDS-specific psychological symptoms. Ten of a planned sample of fifty HIV positive asymptomatic gay men have been entered into an eight week double-blind, placebo-controlled clinical trial of buspirone.
Results: The average study subject is a white, thirty-six year old gay male. Two-thirds of the sample qualified for a psychiatric diagnosis of generalized anxiety disorder, while the remaining subjects received a diagnosis of an adjustment disorder with anxious or mixed features. After eight weeks of trial participation, all subjects (5/10) in the placebo group retained their DSM-III psychiatric diagnoses while the subjects (5/10) in the buspirone group could no longer could be given a clinical diagnosis.
Conclusion: The data suggests that a short treatment program with buspirone is efficacious in the management of anxiety in HIV positive men. Due to the unique anxiolytic activity and low side effect profile of buspirone, this medication would appear to be an ideal agent for the treatment of anxiety in these individuals.

Psychiatry: Treatment of Psychiatric Disease

S.B.396

TREATMENT OF PSYCHOLOGICAL DISTURBS IN H.I.V. INFECTED PEOPLE.

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Objective: To describe the reduction of psychological disturbs after a treatment in which patients are trained in cognitive control, anxiety reduction, habits modification and HIV coping skills.
Method: 105 patients were trained and assessed (The Anxiety, and Depression Scale "ADS", Rating of Anxiety, Depression and Vulnerability). The results were compared with a 30 patients control group, before treatment, after it and in a 6 Months follow-up.
Results: Before treatment there were not statistical diferences between the two groups, and their scores were significantly higher than the usual rates. (Normal Rates: ANX 1.68-2.18; DEP 5.2-3.7; VUL 10.75-2.28). Scores before treatment: ANX 14.45; DEP 28.25; VUL 15.40. Scores after: ANX 6.40; DEP 10.20; VUL 7.80. The patients reduced their alterations in a significant way, compared with the control group. In the 6 months follow-up the results were maintained by 78%, 22% changed their mood state in correlation with severe somatic symptoms.
Conclusion: Psychological disturbs developed in HIV infected patients can be reduced by adecuate behavioral modification techniques and generalize in a high percentage, these techniques also can be trained not only by psychologysts but by other health professionals, to prevent the develop of psychological changes.

S.B.397

PSYCHIATRIC EMERGENCIES IN HIV DISEASE AND AIDS

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OBJECTIVE: To describe Psychiatric Emergencies in HIV + and AIDS patients.
METHODOLOGY: Of a hundred and ten patients with HIV Disease or AIDS referred to the Psychiatric Service between 07/1987 and 12/1989, emergency cases were selected. Clinical and Psychiatric data from these patients were obtained from medical records.
RESULTS: The Psychiatric Emergencies represented 13% of the patients referred to the Psychiatric Service. Of the fourteen cases, seven occurred in outpatients. Only one of the patients had a previous history of Mental Disease. The most frequent findings were: A)- Clinical Diagnoses: AIDS (12/14), Diarrhea (6/14), Pulmonary Tuberculosis (5/14), Cerebral Toxoplasmosis (4/14), Oral Candidiasis (4/14); B)-Psychiatric Diagnoses: (DSM III.R) : Delirium (6/14), Organic Affective Syndrome (3/14); C)-Psychiatric Symptoms : Psychomotor Agitation (12/14), Insomnia (9/14), Aggression (5/14), Paranoid Ideation (5/14), Suicidal Ideation (4/14); D)-Medications Administred: Haloperidol (13/14), Prometazine (9/14), Diazepam (6/14), Biperiden (4/14); E)-Death Occurrences: Seven patients were dead eight months after their first psychiatric evaluation and, four of them in the first three months.
CONCLUSION: Psychiatric Emergencies in HIV Disease and AIDS represent additional burden to the patients' families and to the health team. Since most patients (12/14) had Organic Mental Syndromes, combined clinical and psychiatric care is essential to the appropriate management of these cases. Given the relatively high frequency of Psychiatric Emergencies amongst HIV infected patients, further studies are needed to clarify their etiology, clinical presentation, treatment and prognosis.

S.B.398

PSYCHIATRIC MANAGEMENT OF AIDS AND SEROPOSITIVE PATIENTS AT YALGADO HOSPITAL OF OUAGADOUGOU

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Objectives: 1) To test clinical and therapeutic methods for the management of psychiatric decompensation of AIDS and seropositive patients; 2) to measure the fear of death in AIDS patients in the terminal phase.
Methodology: Regular consultations in the psychiatric ward of 50 patients confirmed HIV seropositive by Elisa and Western Blot tests. The patients were referred by the internal medicine service. Each case was seen several times for information, chemotherapy and psychotherapy.
Results: 15 of the 50 patients presented with a psychiatric decompensation. They are treated with anti-depressents and psychotherapy. A clear improvement in their psychiatric symptoms was seen after approximately two months on the average. Profound anguish was noted in 31 of the 50 cases. These patients benefited from tranquilizers and general therapy. One patient expressed a denial reaction. Three seropositives disappeared after being informed of their results.
Conclusion: In Burkina Faso where death rates are high and prevalence of diarrheal, fever, and malnutrition is widespread, the psychology of AIDS patients evolves from fatalism to profound anguish. The psychiatric reaction is one of simple anguish to symptoms of mental illness.

S.B.399

CHANGES IN THE PSYCHOTHERAPEUTICAL APPROACHES APPLIED TO HOSPITALIZED AIDS PATIENTS.

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Objective: To describe the changes introduced in individual psychotherapeutic techniques applied to hospitalized AIDS patients.
Methods: Retrospective review of psychotherapists' records of 20 patients seen in 2 different periods (1st period : July/August 1987 : 12 patients; 2nd period : November/December 1989:8 patients)
Results: The analysis of the material has shown the following results: Psychoanalytic psychotherapy model was more applied in the 1st period. Free association, multiple focus and psychotherapists neutral role were encouraged. In the 2nd period brief-focus psychotherapy model gainned emphasis. Advising, clarifiying and making suggestions to the patient acquired greater importance. Sound reasons justified these changes: a) our initial lack of experience with AIDS patients and groups most commonly affected by the disease, b) high incidence of patients' cognitive deficits which requires technical adjustments, c) psychoanalytic therapy usually increases patients' regression and dependence, d) brief-focus therapy model seems more efficient in alleviating patients' anxiety and depressive reactions.
Conclusion: Psychotherapists' active role is more adequate when applied to hospitalized AIDS patients. Principles of brief-focus psychotherapy should be preferred in order to determine specific goals for therapy and help restore integrative capacities of the patient.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.400 OUTCOME EVALUATION OF EIGHT-WEEK EDUCATIONAL SUPPORT GROUPS: VALIDATING THE MODEL USING CONTROL GROUP COMPARISONS

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Objective. To evaluate the effectiveness of an eight-week psychoeducational group model in reducing psychological distress and improve coping among individuals at-risk for AIDS.

Methods. Participants were consecutive clients of the UCSF AIDS Health Project. Intervention participants (N=546) and waitlist controls (N=50) completed self-report measures of distress, coping, and other psychosocial variables pre- and post-intervention and at comparable time points, respectively. T-test comparisons between intervention and control groups were performed on data collected prior to intervention to test for group differences at baseline. T-tests comparisons were made within groups between pre- and post-intervention data to test for changes over time.

Results. No initial significant differences between intervention and control groups were found on measures of distress and coping. No significant differences in comparisons of data collected over the treatment period were found among control group participants. Significantly less distress and better coping were found across all measures pre- to post-intervention.

Conclusions. Psychoeducational groups for persons at risk for AIDS reduce distress and improve coping. Such interventions may prove to be increasingly valuable for groups who experience continual stress from a worsening epidemic.

S.B.401 THE PROVIDER-PATIENT RELATIONSHIP AS SEEN BY PEOPLE WITH HIV DISEASE.

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Objective: To examine the attitudes of people with HIV disease to the health provider-patient relationship.
Methods: Patients of an ambulatory HIV clinic in San Francisco (n = 174) responded to a twenty-five-item set of statements about the provider-patient relationship as part of a larger telephone survey of their health care experiences. These are predominantly white (83%), middle class (median income = $20,000), gay (85%), and male (96%). The Likert-format items had five responses from strongly agree to strongly disagree.
Results: Ninety-four percent of respondents agreed (strongly or mildly) that patients should participate fully in discussions about medical treatment; 27% believed that AIDS was too complex for patients to make treatment decisions. When asked to choose a statement which describes how they felt about getting information from their provider, 92% said they wanted "as much information as possible, both good and bad." There were few significant differences in opinion related to demographic variables; older patients (>40 years) had slightly more passive attitudes. Stage of HIV disease was not significantly related to attitudes.
Conclusion: It is important for health care providers to take these views into account when caring for these patients. Further research will compare people with HIV disease to other patient populations. These results support anecdotal observations that many AIDS patients, especially gay white men, have a view of the provider-patient relationship which accords the patient a high degree of autonomy and a share in decision-making.

S.B.402 LONG-TERM PSYCHOTHERAPY OF HIV PATIENTS - INDICATIONS AND EXPERIENCES

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Objective: Description of specific factors concerning indications and carrying-out of long-term psychotherapy of HIV-infected patients (21 homo- and bisexual men and 4 heterosexual non drug-addicted women).
Methods: Cause and timing of referring the patients to psychotherapeutic consultation, the patients' personality structure, their motivations and attitudes towards psychotherapy are descriptively analysed, based on psycho-diagnostic interviews and analytical counselling of 25 HIV-patients. Ten of these patients have been in long-term psychotherapy (one hour session per week; maximum duration of therapy four years).
Results: Most people confronted with the HIV-positive diagnoses react in a traumatic sense but adjust to their diagnoses without developing too many psychosocial problems. Patients in this study were sent into psychotherapy because of permanent depressive reactions which had not been caused by cerebral complications of the infection. Their feelings of hopelessness, isolation and guilt were obvious. Evaluation shows that in these cases the traumatic reaction has remained. Their defense structure has been destabilized because underlying non specific HIV-traumatizations have been activated.
Conclusion: Psychotherapy often is regarded by those patients as a means to cope with Aids standing for their struggle to maintain hope. In these cases, from the therapist's point of view, not only supportive but also appropriate conflict-orientated methods are useful to reveal underlying neurotic personality traits and defense mechanisms which prevent the patient from coping with his disease.

S.B.403 PSYCHOSOCIAL COUNSELING ACCOMPLISHED BY MALE COUNSELORS FOR HIV-INFECTED WOMEN IN RIO DE JANEIRO, BRAZIL.

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Objective: To identify embarrassment arising from women assisted by male counselors and to develop new techniques/strategies to reduce strongly negative feelings arising from women infected by men.
Methods: Twenty-seven seropositive women infected by intimate sexual contact, mean age of 30,4 (range, 22 years to 49 years), attending the AIDS care unit at the Gaffrée & Guinle University Hospital, from January to December 1989, were referred by female doctors to male psychologists. Twenty-two married women were infected by their husbands whose bisexuality was unknown and 5 unmarried women with multiple sexual partners. Non directive interviews were accomplished by male psychologists once a week.
Results: Of 22 married women infected by their bisexual husbands, 8 (37%) were embarrassed to establish a good working alliance and tried to avoid the first interview but thereafter changed their attitude toward coping with the crisis; 4 (18%) dropped out after the first interview because "it was very hard to speak to a man about their feelings"; 10 (45%)had no embarrassement, expressed gratitude and adhered to psychotherapy for support in coping with the crisis of illness. Of 5 unmarried women, no resistance was observed in 3 (60%) and 2 (40%) women were aggressively and provokingly resistant.
Conclusion: 1) Psychotherapeutic interventions for HIV-infected women may be provided by male psychotherapist. 2) Male psychotherapist may examine female feelings about men and provide supportive relationship to palliate the emotional difficulties that afflict women infected by men. 3) Refusal of treatment and aggressive behavior may be dysfunctional expressions of anger directed at men.

S.B.404 ISSUES OF IDENTIFICATION FOR GAY PSYCHOTHERAPISTS TREATING GAY CLIENTS WITH HIV SPECTRUM DISORDER: SPECIAL VULNERABILITY AND ITS MANAGEMENT

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Objective: An exploratory research strategy was used to investigate issues of identification in gay psychotherapists working with gay clients with HIV.
Methods: Fifteen gay, licensed clinicians who had at least one year's experience working with HIV spectrum clients were picked from clinicians who responded to a mailed invitation in Boston in 1989. Content analysis of semi-structured interviews was used to discern common themes and differences
Results: Vulnerabilities to identification for gay psychotherapists working with gay PWA's were identified as vulnerability to contagion (emotional and physical), death (friends, colleagues, lovers, and their own), grief, and homophobia (shame, stigma, oppression, and rage). Management of identification included behavioral, ego supportive, psychodynamic, political, spiritual, and cognitive techniques
Conclusion: Identification is an intrinsic component of empathy and a cause of countertransference problems. Factors which may lead to burnout and means for sustaining an empathic stance were revealed. These are relevant to other gay therapists doing the work and have implications for other health care workers. Policy implications include resource development for better support and review of psychotherapists and other workers in this difficult field.

S.B.405 BEHAVIORAL EFFECTS OF COMBINATION AZT+ALPHA INTERFERON TREATMENT IN HIV DISEASE

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Objectives Patients report side effects of alpha interferon (αIFN) therapy in HIV disease such as depression and impaired cognition in addition to physical symptoms such as fever, headache, and neuromuscular pain. Treatment-induced changes in cognition and mood must be evaluated, because dementia is now an endpoint in many clinical studies of HIV disease. Sensitive assessment tools which measure symptoms of interest and which are easily administered by clinical staff are needed. In this study, the behavioral, cognitive and physical effects of combination AZT-αIFN treatment were evaluated using self-report measures including the Profile of Mood States (POMS) and a visual analog scale (VAS) developed for this purpose.
Methods To date, five male patients at all stages of HIV disease have completed eight weeks of treatment with combination AZT (100 mg q4h) and αIFN (1 MIU/d s.c. increasing to 2.5 MIU/d at 2 weeks, then increasing by 2.5 MIU/d every two weeks thereafter to toxicity). Entry criteria included T4 lymphocyte counts $\geq 500/mm^3$, no current or past AIDS defining disease, no illicit drug use, nor history of significant depression. The POMS and VAS were done before starting therapy and after four and eight weeks of treatment. The POMS measures tension, depression, anger, vigor, fatigue and confusion. On the VAS (100 mm linear scale), 18 items were selected to quantify changes in mood, neuromuscular sensation, concentration and ability to function. Data was analyzed using BMD-P2V.
Results All POMS scores were in the normal range (T=38-49; vigor, T=63-67). After treatment, there was a trend toward increased fatigue ($F(2,8)=3.67$, $p<.08$). On the VAS, scores were within the normal range, (45-80; higher score=better function). With respect to mood, sadness ($F(2,8)=3.74$, $p<.07$) and irritability ($F(2,8)=6.44$, $p<.02$) increased after treatment. With respect to physical symptoms, nausea increased significantly ($F(2,8)=6.02$, $p<.03$). In addition, concentration was significantly reduced ($F(2,8)=6.95$, $p<.02$). There were no neuromuscular changes reported, nor changes in overall ability to function.
Discussion The results verify and quantify reports of increased fatigue, irritability and dysphoria after treatment with AZT-αIFN. Nausea was the main physical complaint. Reduced concentration may impact on neuropsychological test performance; this will be tested directly by comparing cognitive function after treatment with AZT-αIFN, vs. AZT and αIFN alone. Staff reports indicate that the VAS in particular was useful clinically in assessing dynamic changes in behavioral, cognitive and physical symptoms.

S.B.406 PSYCHOLOGICAL TESTING TO DESIGN OR MODIFY TEACHING AND PSYCHOTHERAPEUTIC INTERVENTION WITH PATIENTS ON A CLINICAL TRIAL OF FOSCARNET FOR THE TREATMENT OF CMV RETINITIS

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Objective: To evaluate the psychological and intellectual preparation of patients to manage long-term home intravenous infusions and Hickman catheter care.
Methods: The Wechsler Adult Intelligence Scale-Revised, the Wechsler Memory Scale-Revised, the Millon Behavioral Health Inventory and a standardized reading test were administered to 14 inpatients two to three weeks prior to discharge to characterize cognitive impairments and psychosocial and potential compliance problems. The testing was used to predict the patients' abilities to learn and replicate infusion training and the extent to which nursing care would be required in their homes following discharge.
Results: Six of 14(43%) patients showed evidence of decline in intellectual ability based on premorbid IQ/educational level. Five of 14(36%) showed evidence of memory deficits (visual/verbal or both) and 9 of 14(64%) had psychological problems which interfered with compliance including isolation, depression, anxiety and introversive personality style. Patients with psychological problems received short term psychotherapy and teaching plans were modified in accordance with test results. In a survey conducted following the completion of the protocol, 13 of 14 (93%) reported their training and/or psychotherapy provided the knowledge and confidence they needed for coping with their care at home. Community physicians reported 13 of 14(93%) compliance with independent care.
Conclusions: Psychological testing as a basis for development of patient training, psychotherapeutic interventions and discharge planning is crucial prior to discharge for persons with AIDS who may have cognitive and/or psychosocial problems.

S.B.407 PSYCHOLOGICAL RESPONSE TO PARTICIPATION AND NON-PARTICIPATION IN A PLACEBO-CONTROL DRUG TRIAL FOR TREATMENT OF HIV INFECTION

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OBJECTIVES. To examine the psychological effects of participation and non-participation during and at medification of a placebo-control clinical trial of AZT for asymptomatic HIV-seropositive persons.
METHODS. From July 1988 to July 1989, participants in the University of Minnesota's AIDS Clinical Trials Unit (ACTU) Protocol 019 were invited to participate in a survey to evaluate psychological responses to Protocol 019 participation. Comparable HIV-seropositive asymptomatic controls were enrolled via newspaper advertisment. The survey included: MMPI Scale 2; Beck Depression Inventory (Beck-D); Beck Hopelessness Invertory (Beck-H); Tellegen's Well-Being (WB) and Stress Reaction (SR) scales; check lists of Anxiety Symptoms (AS) and Depression Symptoms (DS) based on DSM III-R; Spielberger's State Anxiety (SA); and elicited demographic information. The survey was given at baseline (T1), 2 months (T2), 6 months (T3), and (T4) after 019 was altered in 8/89 to assess the effects of protocol modification.
RESULTS. Twenty-eight subjects and 11 controls completed T1, T2, and T3. Thirty-one subjects and 16 controls completed T4 after modification of Protocol 019. Among study subjects, repeated measures ANOVA of the 8 measures of emotional distress assessed at T1, T2 and T3 demonstrated significant decreases ($p<.05$) in the mean scores on 5 of the 8 measures (Beck-D; SA; SR; and AS and DS-previous 2 wk scores). Two other dimensions (MMPI Scale 2; AS-same day score) showed a decreasing trend ($p \leq 0.1$). Among control subjects at T1, T2, and T3, only 1 mean score of the 8 variables was noted to significantly decrease (Beck-D). A decreasing trend was noted on MMPI Scale 2. In evaluating the effects of protocol modification, paired t-test analysis at T2 vs.T4 among study subjects revealed a tendency for the mean score to decrease on 2 of the 8 variables (AS and DS-previous 2 wks scores). Among control subjects, increasing trends ($0.10<p<.20$) were noted on 4 of the 8 variables (AS, DS-same day and previous 2 wk scores).
CONCLUSIONS. 1) Participation in HIV drug trials may decrease feelings of depression and anxiety throughout study participation; 2) if studies are altered after confirmation of beneficial results, non-participants may experience higher levels of emotional distress, while participants may experience a reduction in distress. This drug trial did not increase emotional distress among participants. More data is needed to confirm these findings. The data does not support Jacobsen et al's (1988) finding of high emotional distress among HIV drug trial subjects.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.408 TEACHING AND SUPPORTING PEOPLE WITH AIDS PARTICIPATING IN CLINICAL TRIALS

Bennett, Jo Anne, Holzemer, S.P., Scherer, P.B., Rudnicki,V.

Many people with AIDS (PWAs) who participate in clinical research need help to fulfill their role in the research process. A structured, but flexible, patient education and support program can be molded to support the person before, during, and after trial completion.
PWAs' understanding of the research process varies widely. Many perceive trials as an avenue of access to effective treatments. They also differ in their general health status during the duration of the trial, both because of the type of treatment being investigated and previous and changing level of health. In addition, researchers can be inconsistent in their clinical (primary care) skills and/or interest in guiding research subjects through the process.
Some issues that can be addressed through structured (and unstructured) teaching/learning activities include: 1)making initial and ongoing assessments of a person's ability to provide informed consent; 2)predicting when the subjects' family or friends might best become involved in health care and in research support activities; and 3)making changes in technical aspects of the protocol in order to conserve both the subjects' resources and those of the research staff. Structured and unstructured activities can provide psychosocial support, promote compliance with the protocol, and enhance the skills of researchers.
The usefulness of specific strategies, such as group meetings, telephone and in-person follow-up, home and hospital visits, and anonymous questionnaires will be discussed.

Pulmonary

S.B.409 LYMPHOCYTE SUBSETS IN BRONCHOALVEOLAR LAVAGE FLUID OF PATIENTS WITH ADVANCED HIV INFECTION AND DIFFUSE PULMONARY INFILTRATES.

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Objective of the study: In patients with advanced HIV infection diffuse pulmonary infiltrates are frequent and bronchoalveolar lavage (BAL) is widely used to assess them. This study was performed to evaluate the composition of lymphocyte subsets in bronchoalveolar lavage fluid (BALF) of these patients. BAL was performed with 300 ml NaCl in 86 HIV patients with P. carinii pneumonia (PCP) and 49 HIV patients with other diffuse pulmonary infiltrates (129 male, 6 female, age: 39±12 years).
Methods: Cell differentials were performed on cytocentrifuge slides (Wright Giemsa stain) of BALF. We counted 1000 cells. Lymphocyte subsets were evaluated using commercially available monoclonal antibodies (incubation at 4°C) using a fluorescence activated cell analyzer. Results are expressed as % of lymphocytes (mean and SD).
Results:

	N	Lymph.	CD4+	CD8+	HNK1	CD25	CD3+DR+
PCP	86	17±15%	8±6%	58±19%	15±9%	9±9%	46±29%
Non-PCP	49	14±11%	11±11%	57±24%	21±15%	7±11%	32±23%
Predicted:		< 15%	36-70%	15-40%	< 15%	< 5%	

No significant differences were seen between patients with and without PCP. We conclude that BALF of patients with advanced HIV infection and diffuse pulmonary infiltrates is characterized by a lymphocytosis, a marked reduction of CD4+ lymphocytes, an expansion of CD8+ lymphocytes and HNK1 cells as well as an increased expression of CD25 and DR epitopes. The distribution of lymphocyte subsets in these patients does not reflect the presence or absence of an opportunistic infection.

S.B.410 THE PATHOLOGICAL ASPECTS OF PLEURAL BIOPSIES IN THE PLEURO-PULMONARY MANIFESTATION OF AIDS

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Objective. To determine the types of pleural lesions found in the pleuro pulmonary manifestation of AIDS in Burkina Faso.
Methods. Study subjects consisted of 54 consecutive confirmed HIV seropositives 15 to 50 years who were admitted to the respiratory service of Yalgado National Hospital and presented with a pleuro-pulmonary symptomatology Each subject undertook: pulmonary X-rays, blood exams; a pleural biopsy for hystological work-up; and HIV tests (ELISA and Western Blot).
Results: a) The pulmonary radiology frequently indicated a unilateral pleural discharge (rarely bilateral), b) A complete blood count frequently indicated a general reduction of lymphocytes and a inverse ratio of white cells, c) The pleural punctions produced a clear liquid high in lymphocytes; d) The pleural biopsies displayed the following lesions:
- diffuse lymphocytic infiltrations (30 of 54 cases).
- tuberculosis lesions (21 of 54 cases).
- 3 of 54 patients displayed malignant non-Hodgkins pleural lymphoma.

Conclusion: The chief pulmonary effects of SIDA in Burkina Faso are diffuse lymphocytic infiltration and tuberculosis. Malignant pleural lesions are rare.

S.B.411 PNEUMOCYSTIS CARINII PNEUMONIA(PCP)-ASSOCIATED PNEUMOTHORAX

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OBJECTIVE: PCP-associated pneumothorax is an unusual but increasingly frequent presentation in AIDS patients. Recent case reports have suggested a poor diagnosis. This study ascertains the frequency and outcome of this complication due to PCP.
METHODS: During a 3 year period 22 of 695 patients (3%) with proven PCP presented with pneumothoraces. No pneumothorax was associated with prior bronchoscopy or nebulizer therapy. Clinical findings, chest radiographs and outcome were analyzed.
RESULTS: There were 18 unilateral and 4 bilateral pneumothoraces. While 1/3 of pneumothoraces were ≤50%, 2/3 were >50%. Resolution of the pneumothoraces occurred in 3 patients without chest tube insertion. Chest tube re-expansion of the pneumothorax occurred in 8 patients. Eleven patients had persistent air leaks despite chest tube drainage. Thoracotomy resulted in resolution in 2 patients. Nine patients (40%) died with persistent air leaks.
CONCLUSIONS: 1) Spontaneous pneumothorax occurs in 3% of patients; 2) In contrast to spontaneous pneumothoraces in non-AIDS patients, resolution occurs far less frequently resulting in a poor prognosis.

S.B.412 NON INVASIVE MANAGEMENT IN THE OUT PATIENT DEPARTMENT OF FEVER AND BREATHLESSNESS IN HIV POSITIVE PATIENTS

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Objective: To prospectively assess a non-invasive out-patient based investigation protocol in HIV +ve patients with fever, cough and breathlessness aiming to (1) detect early pneumocystis pneumonia (PCP) and (2) reduce the need for bronchoscopy (B).
Methods: Seventy-two consecutive patients were investigated by chest radiograph (CXR), arterial blood gases and a ^{99m}Tc DTPA lung scan. Induced sputum was also examined in 39 cases. Patients were treated for PCP (as out-patient if possible) when the DTPA scan was positive (fast and biphasic) even if the CXR was normal or focally abnormal and B only performed if treatment failed and induced sputum was negative. B was carried out if DTPA scan was normal and CXR either diffusely abnormal or patient failed to respond to amoxycillin when CXR was focally abnormal.
Results: PCP caused 50% of respiratory illnesses. The DTPA scan was positive in 34 cases, was falsely negative in 2 and there were no false positives irrespective of tobacco habit. The CXR was typically abnormal in 21. Sputum induction was positive in 17. Mortality was low (5.4%) and bronchoscopy was required on 14 occasions.
Conclusion: DTPA scanning aids early detection of PCP, increases the possibility of out-patient treatment and is more acceptable than other non-invasive tests. A normal scan almost excludes PCP. The introduction of induced sputum examination has reduced the need to perform bronchoscopy.

S.B.413 ARE THE PULMONARY COMPLICATIONS OF AIDS CHANGING?

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OBJECTIVE: Non-specific interstitial pneumonitis (NSIP) has been reported to occur in 13-38% of AIDS patients. The present study was designed to ascertain: 1) whether the nature and incidence of pulmonary complications is changing; 2) does NSIP occur with the recently reported high frequency.
METHODS: Between 3/88 and 12/89, 207 consecutive HIV+/AIDS patients who presented with fever, dyspnea and an abnormal chest x-ray underwent bronchoscopy with transbronchial biopsy and lavage (168) or sole lavage (39).

RESULTS:	PCP	NSIP	CMV	MTB	KS	Fungi	Herpes
	116(56%)	31(15%)	14(7%)	14(7%)	8(3%)	3(1%)	1(0.05%)

In addition, there were 2 cases of pulmonary lymphoma and 1 carcinoma. Ten patients (5%) had negative biopsies and/or lavage; CMV (6) or MTB (4) were found elsewhere and chest radiographs improved with therapy. There were 7(4%) non-diagnostic bronchoscopies; all patients improved without therapy. Of the 31 patients with NSIP, 15 had previous pulmonary opportunistic infections or known pulmonary KS. Thus, only 16 (8%) had true NSIP without explicable causes.
CONCLUSION: 1) PCP remains the most common pulmonary complication. 2) The relative incidence of pulmonary complications is similar to previous published reports. 3) In contrast to recent reports, NSIP does not occur with increasing frequency. When all known causes are excluded, it occurred in 8% of patients in the present study.

S.B.414 MODIFICATIONS OF PULMONARY FUNCTION TESTS AT DIFFERENT STAGES OF HIV INFECTION

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Objective : To assess the modifications of pulmonary function tests (PFT) according to the different stages of HIV infection.
Methods : Total lung capacity (TLC), the ratio forced expiratory volume in one second/forced vital capacity (FEV1/FVC), carbon monoxide transfer factor (TLCO) and alveolar-arterial gradient for oxygen (A - a) O2 were measured in 6 groups of HIV patients : Asympt : CDC II and III (n = 21) ; ARC : CDC IV a and IV c2 (n = 133) ; PCP:acute PCP (N=31) ; Post PCP 1 : patients with history of first PCP (at least 2 months before evaluation (n = 127);Post PCP 2-3: patients after two or three episodes of PCP (n = 19) ; AIDS : AIDS patients without any history of pulmonary infection (evolutive pneumoniae) (n = 49). Intravenous drug abusers and patients with Kaposi's sarcoma were excluded.
Results : Only TLCO is indicated in the table. Other parameters were unchanged except in PCP group.

ASYMPT	ARC	PCP	Post PCP 1	Post PCP 2-3	AIDS
84.5 ± 13.4	80.2 ± 15.8	50.7 ± 10.7	76.3 ± 14.6	71.5 ± 11.1	73.8 ± 15.9
n s				n.s	

Analysis of variance are significantly different except when indicated n.s.
Conclusions : 1) the post PCP decrease of TLCO was not related to the number of previous PCP episodes ; 2) TLCO tends to decrease in AIDS patients regardless of the clinical occurrence of pulmonary complications. Therefore, the diagnostic value of TLCO for PCP could decrease in end stage patients.

S.B.415 PNEUMOTHORAX IN HOSPITALIZED AIDS PATIENTS

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Objective: To describe the presentation, concurrent diagnoses, treatment, and outcome of pneumothorax (PTX) in hospitalized AIDS patients.
Methods: From 7/88 to 1/90 prospective data were collected on patients admitted to the AIDS Unit at Johns Hopkins Hospital.
Results: 17 patients had 28 PTX in 21 hospitalizations (3% of Unit admissions). All were male, 53% black, 47% white, with a mean age of 34 yrs. The mortality rate for PTX patients was 38% compared with 11% for non-PTX patients (p<.0001). Patients had the following characteristics:

Active pulmonary infection	14 (82%)
Pneumocystis carinii (PCP)	12 (71%)
Prior episode of PCP	11 (65%), avg. 2.4
Prior inhaled pentamidine prophylaxis	11 (65%), avg. 9 mo.

Of the 28 PTXs, 11 (39%) were unilateral at admission, 2 were bilateral; 13 (46%) developed during hospitalization. Outcomes were as follows:

Received chest tube	27 (96%), avg. 18 days
Received pleural sclerosis	11 (39%)
Heimlich valve at discharge	3 (11%)

Conclusion: PTX in hospitalized AIDS patients is often accompanied by a diagnosis of active PCP. AIDS patients with PTX have a high rate of in-hospital mortality.

S.B.416 ROUTINE SCREENING OF INDUCED SPUTUM FOR PCP AND AFB IN HIV INFECTED INDIVIDUALS WITHOUT AIDS

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In an ongoing multicenter study of the pulmonary complications of HIV infection, prevalence of Pneumocystis carinii (PCP) and acid fast bacilli (AFB) were ascertained by analysis of induced sputum specimens in 928 patients at the time of entry into the study. Subjects were excluded from enrollment if there was any evidence of AIDS at the time of recruitment.

A single asymptomatic patient had a positive smear for PCP with no evidence of disease. He remains asymptomatic with no treatment and a negative bronchoscopy for PCP. There were 3 positive sputum smears for AFB; 2 patients were started on triple drug therapy for tuberculosis; 1 patient was simply observed. None had abnormal chest x-rays. Subsequent culture data from these 3 subjects showed 1 with a positive culture for M. avium-intracellulare (MAI); other cultures were negative. Treatment with isoniazid was continued in 1 patient with a positive tuberculin skin test. Two additional subjects had negative smears but positive cultures for M. tuberculosis; both patients were treated. Nineteen additional subjects had negative smears but positive cultures for non-tuberculous mycobacteria, usually in low numbers and with no symptoms of disease activity or requirement for treatment.

We conclude that routine analysis of induced sputum for PCP and AFB in asymptomatic HIV-infected patients is rarely positive. When positive, the results are more likely to be of no clinical significance.

S.B.417 THE SENSITIVITY OF EXERCISE OXIMETRY IN DETECTING DIFFERENT CAUSES OF RESPIRATORY INFECTION IN AIDS PATIENTS.

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OBJECTIVE: To determine the value of exercise induced oxygen desaturation as a measure of interstitial lung disease in HIV positive patients.
METHODS: All HIV antibody positive patients with respiratory symptoms were exercised on an exercise cycle (70rpm with a resistance of 150 watts) for 10 minutes. Arterial desaturation was assessed using a portable pulse oximeter and a positive result was defined as less than 90% during exercise.
RESULTS:

	PNEUMOCYSTIS CARINII PNEUMONIA		KAPOSI'S SARCOMA OF LUNG	BACTERIAL INFECTION
	PA02>11*	PA02<11*		
No. of patients	45	35	7	29
% positive	62	82	14	0

* Arterial oxygen on admission.

The above table relates to first episode Pneumocystis carinii pneumonia (PCP). For second episode PCP there was desaturation to below 90% in all patients except those with acute bacterial infection.
CONCLUSION: The majority of patients with a confirmed Pneumocystis carinii pneumonia desaturate to below 90% on exercise and this test is useful in distinguishing such patients from those with acute bacterial infections, predominantly of the bronchi. Desaturation occurs in most patients with lung disease (Kaposi's sarcoma, mycobacterial infection or cytomegalovirus infection) if the patient has had a previous episode of PCP.

S.B.418 THE PROGNOSIS IN HIV-INFECTED PATIENTS REFERRED TO BRONCHOSCOPY. RELATION TO BRONCHOSCOPIC FINDINGS.

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Objective: To assess determinants of survival for HIV-infected patients admitted to first-time bronchoscopy.
Methods: During a three-years period, a prospective recording of clinical, laboratory and microbiological data were done on 89 consequetive patients, who according to strict criteria (HIV-infection, pulmonary symptoms and abnormal chest x-ray or CT-scan) were admittet to bronchoscopy.
Results: No single microorganism recovered from bronchoscopy was associated with an increased or decreased survival. During the acute episode of pneumonia 10% of the patients died. Factors that increased the risk of dying during the acute episode of pneumonia were1) severe diffuse interstitial infiltrates on x-ray (p=0.01), and 2) multiple microorganisms recovered from bronchoscopy (p=0.02). Despite relevant therapy, the combination of PCP and bacterial pneumonia was fatal in 50% of the patients. For all patients the one and two years survival was 60% and 34%, respectively. Only traditional non-pulmonary survival parameters as CD4 heamoglobin and age was found to be prognostic parameters. For patients with PCP the survival increased during the 3-year period.
Conclusion: Prognostic information obtained by bronchoscopy is limited. An acute mortality of about 10% is observed. Long-term life expectancy is mainly related to non-pulmonary complications of HIV-infection.

Antiretrovirals: Zidovudine (AZT)

S.B.419 OCCURRENCE AND TIMING OF ZIDOVUDINE TOXICITY IN ASYMPTOMATIC HIV INFECTED INDIVIDUALS WITH <500 CD4+ CELLS/MM3: INITIAL RESULTS FROM PROTOCOL 019 OF THE AIDS CLINICAL TRIALS GROUP

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Objectives: To assess occurrence and timing of zidovudine (ZDV) toxicity in asymptomatic HIV infected individuals with <500 CD4+ cells/mm3. To characterize predictors of zidovudine toxicity in this population.
Methods: Double-blind, randomized, prospective trial of two doses (1500 mg, 500 mg total per day) of ZDV versus placebo. Results from N=1338 patients with baseline CD4+ cells <500/mm3 are reported, representing data received by May 10, 1989 on patients enrolled through March 31, 1989.
Results: Mean duration of treatment was 52 weeks in the placebo group vs. 50 and 42 weeks in the 500 mg and 1500 mg ZDV groups. Hemoglobin <8 g/dl occurred in 0.2% of placebo patients, vs. 1.1% (NS) and 6.3% (p<.0001) in the 500 mg and 1500 mg ZDV groups; absolute neutrophils <750/mm3 in 1.6%, vs. 1.8% (NS) and 6.3% (p<.0001). In the 1500 mg ZDV group the risk of first occurrence of severe anemia (neutropenia) was greatest in the 3rd-8th (1st-3rd) months. SGOT or SGPT elevation to >5x upper limit of normal was not associated with ZDV. Of severe subjective complaints, only nausea (0.2% vs. 3.3% (p<.001) and 5.0% (p<.001)) was associated with ZDV. Milder symptoms and lab abnormalities were common and a number were associated with ZDV. Baseline predictors will be assessed.
Conclusions: The spectrum of ZDV toxicity was similar to that reported for ARC and AIDS patients, but at lower frequency. Severe toxicities were uncommon and, except for nausea, associated only with the 1500 mg ZDV group. Implications for monitoring asymptomatic patients on ZDV will be discussed.

S.B.420 A PHASE I/II TRIAL OF ZIDOVUDINE, INTERFERON-ALPHA, AND GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR IN TREATMENT OF HIV-1 INFECTION.

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Objective: to determine safety, efficacy, and optimal dosing of Granulocyte-Macrophage Colony Stimulating Factor (GM-CSF) when given to overcome neutropenia due to combined zidovudine (Z) plus interferon-alpha (IFN) therapy.
Methods: HIV-infected patients with 200-500 CD4+ cells/mm3 were given either 600 mg (Group 1, n=12) or 1200 mg (Group 2, n=12) per day of Z combined with escalating doses of daily subcutaneous (sc) IFN. Daily sc GM-CSF starting at 1 µg/kg/d was added when granulocytes declined to <1000 cells/mm³.
Results: Ten patients (6 in Group 1, 4 in Group 2) have completed a minimum of 16 weeks on all 3 drugs. Mean neutropenia-inducing doses of IFN to date have been 10 and 9.1 million units for Groups 1 and 2, respectively. At 1 µg/kg/d, GM-CSF raised mean neutrophil counts from 872 (pre-GM-CSF) to 6686 (at 2 weeks of GM-CSF) in Group 1, and correspondingly from 695 to 4505 in Group 2. The mean minimum effective doses of GM-CSF (defined as sustaining granulocytes ≥ 1500 cells/mm³) were 0.17 and 0.75 µg/kg/d for Groups 1 and 2, respectively, although doses as low as 0.0625 µg/kg/d were effective in some patients. P24 has declined >50% in 3/3 patients in Group 1 and in 3/3 patients in Group 2; no patients have had an increase in p24. Dose-dependent toxicities of GM-CSF have included injection site pain/erythema, fever, bone pain, and marked dose-limiting exacerbation of the typical lymphokine side-effects of IFN.
Conclusions: Low-dose GM-CSF readily ameliorates the neutropenia associated with Z + IFN therapy, although dose-dependent toxicities can be significant. The synergistic anti-viral properties of Z + IFN are maintained during concomitant GM-CSF therapy.

S.B.421 ZIDOVUDINE AND INTERLEUKIN-2 IN WR2 HIV INFECTED PATIENTS: EVIDENCE FOR STIMULATED IMMUNOLOGIC REACTIVITY AGAINST HIV.

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Objective: To study the safety and efficacy of combining zidovudine (ZDV) and interleukin 2 (IL2) in patients with Walter Reed stage 2 HIV infection.
Methods: Patients received ZDV 200 mg 5x/day for 8 wks, 4 wks of both ZDV and IL2, and finished with 8 wks ZDV alone. Twelve patients have completed the study at these IL2 doses; 5 at 100,000 u/m², 5 300,000 u/m², 2 1,000,000 u/m².
Results: Both drugs were well tolerated. 3 patients developed mild neutropenia, 1 developed thrombocytopenia. Non hematologic toxicity essentially occurred only during IL2 and consisted of mild systemic symptoms. 1 patient required dose reduction in IL2 because of severe arthralgias. Absolute CD4 counts changed little over the entire study (mean -31/mm³ 20 wks) but rose during IL2 (mean +331/mm³). No reactivation of HIV could be detected by p24 antigen or virus culture during IL2 administration. Virus specific non-MHC restricted cellular cytotoxicity, NK activity and LAK activity rose dramatically during IL2 in 70% of subjects and remained elevated after IL2 in 3. No dose response effect has been observed.
Conclusions: IL2 dramatically stimulated cellular cytotoxicity, NK activity and LAK activity in the majority of study participants. In addition, CD4 counts rose transiently during this period. The use of ZDV appeared to prevent reactivation of HIV by IL2. Given the promising evidence of increased immunologic reactivity, this combination deserves further study.

S.B.422 EFFICACY AND TOXICITY OF ZIDOVUDINE (Z) IN EARLY AIDS-RELATED COMPLEX(ARC)

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Objective: To assess the efficacy and toxicity of Z in patients(pts) with early ARC (CDC stages III, IV-A, IV-C2 or WR stages II through V).
Methods: Double blind, placebo-controlled trial using 800mg daily dose of Z(200mg q6h)in symptomatic HIV-infected pts with 200 to 500 CD4 cells. Clinical,immunologic,and virologic parameters were monitored q 1 to 3mo. Endpoints (EP) were development of AIDS or 2 new HIV-related symptoms or signs with <200 CD4 cells for >3 mo.Placebo(P)administration ceased in August 1989 after efficacy was demonstrated in ACTG study 016;data were analyzed through June 1989.
Results: From October 1987 through March 1989,218 patients were enrolled in the study,110 on Z and 108 on P.Pre-entry lab values were comparable in Z and P groups;pts were enrolled for a mean of 269 d.There were 40 and 46 discontinuations,including 8 and 8 EP,2 and 0 deaths,and 28 and 36 withdrawals. After 8 wks mean CD4 counts increased 22 in Z and decreased 24 in P but there were no differences after 24 wks.Adverse events were reported in 79% of Z and 71% of P;serious nausea occurred in 24% of Z and 3% of P,and headache in 20% of Z and 13% of P.Granulocytes fell to <750 in 5 Z and 2 P pts,Hb <8.0 in 2 and 0, and platelets <50,000 in 1 and 3.One Z pt required transfusions and dose modifications occurred in 22% of Z and 7% of P.
Conclusion: Z had no observed effect on clinical disease progression, probably due to early study termination.However,800 mg of Z in pts with 200 to 500 CD4 cells is well tolerated, and has minimal hematologic toxicity.

S.B.423 ZIDOVUDINE TREATMENT IN EARLY HIV INFECTION: LABORATORY STUDIES

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Objective: Walter Reed and CDC systems permit staging of HIV disease. Clinical endpoints plus laboratory markers can be more sensitive to define and track progression. Our study better defines the values of blood CD4,8, NK numbers (L); serum Beta-2-microglobulin (B), HIV antigen (A) levels; and HIV culture (C) results in tracking illness after Zidovudine (Z) treatment of early HIV disease.
Methods: Data on 213 HIV seropositives with CD4's of 200-500/ml randomized to placebo (P) or 800 mg/da Z (200mg q6 hrs.) was obtained q 4, q 12 weeks, in a blinded, prospective study as follows: L by flow-cytometry; B by RIA; A by Abbott EIA; C by co-culture of WBC with CEM cells at 0,6, and 12 months.
Results: Small changes in L were seen at 4,8, and 12 weeks in Z or P groups. Z group A,B values decreased substantially and were significantly lower than P groups (Chi-square) at 4,8,12 weeks. C values did not change. Untreated seropositives (N=69) showed increases in B with increased antigenemia. B showed the highest ratio of elevated 0,6 month values (82%, 100%) in clinical progressors compared to A, C.
Conclusions: A, B changes define early disease progression better than L. B is higher in highly antigenemic persons and best marks progression, based on differences between P, Z groups; ability to identify progressors; smaller biological variability than tests using white count (CD4). With clinical evaluation, B data decreases necessary number of CD4 tests.

S.B.424 ACCUMULATION OF HIV-1 CIRCULAR VIRAL DNA TEMPORARILY HALTED BY ZIDOVUDINE

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Objective: To assess the effect of zidovudine treatment on accumulation of unintegrated circular HIV-1 DNA (cUVD).
Methods: Sequential peripheral blood lymphocyte (PBL) samples, obtained before and during zidovudine treatment (1000 mg/day) of 8 long-term HIV-1-infected p24 antigenemic initially asymptomatic individuals, were analysed for cUVD. Primers used in the polymerase chain reaction (PCR) to detect cUVD were located 5' and 3' of the HIV-LTR; due to the orientation of the primers only covalently closed cUVD was amplified.
Results: After 95 weeks of treatment 4/8 individuals had progressed to AIDS. cUVD was detected in all PBL samples at the start of treatment. At 24 weeks a decline in median cUVD, respectively serum p24 levels was seen, paralleled by an increase in CD4+ lymphocyte counts. At 72 weeks median cUVD had returned to pretreatment levels, median serum p24 levels had remained low, and CD4+ cell counts had declined to below pretreatment values.
Conclusion: These data suggest a relationship between the accumulation of cUVD, HIV-related disease progression, and the temporary fashion in which zidovudine is able to halt this process.

S.B.425 ACTG 050: ALTERNATING (ALT) AND INTERMITTENT (INT) ddC AND AZT IN THE TREATMENT OF PERSONS WITH ADVANCED HIV INFECTION AND HEMATOLOGIC INTOLERANCE TO AZT

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Objective: To determine if drug free periods improve tolerance for AZT and ddC in persons with hematologic intolerance to continuous AZT therapy.
Methods: Participants had AIDS or advanced ARC and had recovered from serious AZT-associated hematologic toxicity. Doses used were AZT 1000 mg/day; ddC-low dose (LD) 0.01 mg/kg/q4h, ddC-high dose (HD) 0.03 mg/kg/q4h. Randomization was to weekly (WKLY) INT AZT, WKLY INT ddC, WKLY ALT AZT/ddC-LD, WKLY ALT AZT/ddC-HD, monthly (MO) ALT AZT/ddC-LD, and MO ALT AZT/ddC-HD. The primary analysis was time to dose-limiting toxicity (especially hematologic and neurotoxicity). Secondary analyses included effects on HIV p24 and T4 cell count.
Results: 109 participants were recruited, 38 remain on study. Preliminary analyses suggest: 1. peripheral polyneuropathy is more common in participants with pre-existing neurologic abnormalities, those in HD ddC arms, and those in WKLY arms, but also occurred in AZT-only arms; 2. serious hemocytopenias are more common in monthly arms but also occurred in ddC-only arms; 3. differential trends in surrogate markers have not emerged.
Conclusions: Variations in dosing schedules alter the toxicity profile of ddC and AZT. Further experience and analysis will determine which of these regimens constitutes the best therapeutic strategy for this population.

S.B.426 ACTG 106: PHASE I/II DOSE FINDING STUDY OF CONCURRENTLY ADMINISTERED DIDEOXYCYTIDINE (ddC) AND ZIDOVUDINE (ZDV,AZT)

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Objective: To determine the safety, tolerability, and activity of concurrent low dose ddC and ZDV therapy in AIDS and advanced ARC.
Methods: Persons meeting original licensing criteria for ZDV therapy with no previous nucleoside antiretroviral therapy and no peripheral neuropathy were assigned in groups of 8 to the following regimens: 1 - ddC 0.005 mg/kg + ZDV 100 mg q8h; 2 - ddC 0.005 mg/kg + ZDV 200 mg q8h; 3 - ddC 0.01 mg/kg + ZDV 100 mg q8h; 4 - ddC 0.01 mg/kg + ZDV 200 mg q8h; 5 - ddC 0.005 mg/kg + ZDV 50 mg q8h; or 6 - ZDV 50 mg q8h.
Results: As of January 1990, follow-up is available for means of 20 weeks on regimens 1 & 2, 8 weeks on 3 & 4, and <1 month on 5 & 6. Of the 24 participants treated at least 8 weeks, mean CD4 counts were 84 (15-188) at entry, 192 (24-458) at week 4 and 179 (37-347) at week 8. Eighteen of these participants were p24 antigen positive at entry (mean 361); 11 remained positive at week 4 (mean 167) and 10 at week 8 (mean 199). Peripheral neuropathy has been limited to one grade III (regimen 1 - week 8). One grade III pancytopenia (regimen 1 - week 8), one grade III neutropenia (regimen 1 - week 5) and 2 grade III hemoglobin toxicities (1 regimen 1 & 2) have developed. Two participants have been removed for toxicity. Longer follow-up on all participants will be presented.
Conclusions: Concurrent administration of low dose ddC and ZDV appears to be tolerable and has significant effect on surrogate markers.

S.B.427 DETERMINANTS OF SAFETY AND THERAPEUTIC RESPONSE IN PATIENTS TREATED WITH ZIDOVUDINE.

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Objectives: To evaluate the long-term efficacy and safety of Zidovudine (ZVD) and to study factors affecting clinical outcome.
Methods: A 2½ year prospective, epidemiologic study is monitoring over 1000 patients (pts) with HIV disease treated with ZVD in 12 clinical sites. All patients who began therapy between 4/15/87 and 4/14/88 and who had AIDS defined by PCP infection(n-415), AIDS defined by other conditions and a $CD_4 \leq 250$ (n-164) or ARC and $CD_4 \leq 250$ (n-432) are included in the cohort.
Results: 68% of AIDS and 74% of ARC pts tolerated > 1000 mg/d of ZVD for the majority of their clinical course. Median proportion of time on ZVD was 86% in AIDS and 93% in ARC; 28% of AIDS and 35% of ARC pts never stopped ZVD. Incidence of grade 3 anemia (HCT<24) was 32% and gr. 3 neutropenia (neut<750) was 36% in 18 months. 29% had transfusion. Nonhematologic toxicity occurred in 8%, primarily GI, headache, and insomnia. 18-month survival after starting ZVD was 65% in AIDS-PCP, 52% in AIDS-ODC, and 84% in ARC. A proportional hazards model with time-dependent covariates showed development of anemia was the strongest predictor of 18 month mortality (Rel Odds-4.3; 95% CI-2.5,7.2). After adjustment, determinants of survival were baseline CD_4 >150 (RO-1.7), Karnofsky >80 (RO-1.6), time from diagnosis to Rx <90 days (RO-1.6), and proportion of time maintained on ZVD at low or high dose >90% (RO-1.6).
Conclusion: ZVD is tolerated well over the long-term in the majority of patients with advanced HIV disease. Remaining on ZVD improves survival regardless of the development of anemia and other prognostic factors. Therapy may be most beneficial if started prior to development of significant anemia.

S.B.428

ZIDOVUDINE (ZDV) PHARMACOKINETICS IN AIDS PATIENTS RECEIVING GRANULOCYTE-MONOCYTE COLONY STIMULATING FACTOR (GMCSF)

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Objective - To examine oral ZDV (100-200 mg dose) and ZDV-glucuronide (GZDV) pharmacokinetics before and during GMCSF administration in patients with AIDS or severe ARC.

Methods - Ten stable AIDS patients who developed ZDV-induced neutropenia (Grade II) were admitted; a 4h pharmacokinetic study was performed upon entry and at 4 weeks into GMCSF therapy (0.3 ug/kg/d or 1 ug/kg/d). ZDV and GZDV were measured by HPLC and normalized to a 100 mg dose.

Results - Upon entry the mean peak ZDV and GZDV concentration was 188 ± 148 ng/ml and 2260 ± 1023 ng/ml, respectively with a mean peak ratio (GZDV/ZDV) of 14.8 ± 7.0 and a 4 h ratio of 15.3 ± 7.7. The mean AUC for ZDV was 427 ± 415 ng·h/ml and for GZDV it was 5606 ± 2115 ng·h/ml; the mean half-life was 1.3 ± 0.8 h and 1.0 ± 0.2 h, respectively. The mean oral ZDV clearance was 64 ± 25 ml/min/kg. During the second study day, the mean peak ZDV and GZDV was 229 ± 186 ng/ml and 1998 ± 624 ng/ml. The mean AUC for ZDV was 452 ± 260 ng·h/ml and for GZDV it was 5517 ± 2427 ng·h/ml; the mean half-life was 2.0 ± 1.0 h and 1.4 ± 1.0 h, respectively. The mean oral ZDV clearance was 48 ± 28 ml/min/kg; the mean peak ratio was 13.7 ± 9.0 and at 4 h it was 15.8 ± 6.5.

Conclusion - These data indicate that the concurrent administration of ZDV and GMCSF may be associated with an increase in ZDV AUC in certain patients irrespective of the daily dose of GMCSF. While some patients experienced up to a two-fold increase in AUC, others showed no change. Further studies are needed to clarify ZDV disposition during chronic GMCSF therapy.

S.B.429

INTERACTIVE PHARMACOKINETICS OF ZIDOVUDINE AND PROPHYLACTIC OR THERAPEUTIC DOSAGES OF TRIMETHOPRIM-SULFAMETHOXAZOLE.

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Objective: Since zidovudine (ZDV, Retrovir) and trimethoprim/sulfamethoxazole (TMP/SMX, Bactrim, Septra) are metabolized by hepatic glucuronidation, competition for conjugating enzymes may result in reduced elimination of either or both agents with a potential for increased toxicity. These studies were done to evaluate the potential pharmacokinetic interaction between ZDV and low "prophylactic" or high "therapeutic" dosages of TMP/SMX.

Methods: Pharmacokinetics were studied after low (160/800 mg) or high (7.5/33 mg/kg) oral doses of TMP/SMX alone, after IV ZDV (2.5 mg/kg) alone and after both. Kinetic studies were preceded by 3 days of corresponding medication(s) and were followed by 4 days washout. Subjects were HIV+ with normal renal and hepatic function. ZDV, TMP and SMX were measured by HPLC. Serum concentration vs time data were analyzed with compartmental and non-compartmental methods.

Results:

"low dosage" TMP/SMX phase: n=8	ZDV alone	ZDV + TMP/SMX	"p"
ZDV clearance (ml/min/kg)	20.9 ± 4.0	20.7 ± 3.3	NS
T1/2(hrs), ke (hr^{-1})	1.14, 0.606	1.13, 0.616	NS
volume of distribution (l/kg)	1.47 ± 0.41	1.57 ± 0.90	NS
"high dosage" TMP/SMX phase: n=7			
ZDV clearance (ml/min/kg)	22.3 ± 3.9	20.3 ± 3.7	NS
T1/2(hrs), ke (hr^{-1})	1.07, 0.645	1.03, 0.67	NS
volume of distribution (l/kg)	1.48 ± 0.67	1.36 ± 0.40	NS

Conclusion: Trimethoprim-sulfamethoxazole (TMP/SMX) in either low "prophylactic" or high "therapeutic" dosages does NOT effect the distribution or elimination of zidovudine (ZDV, Retrovir).

S.B.430

EFFECT OF IL-1, IL-6, GM-CSF, ERYTHROPOIETIN, AND LITHIUM ON IN VITRO TOXICITY INDUCED BY 3'-AZIDO-3'DEOXYTHYMIDINE ON HUMAN BONE MARROW PROGENITOR STEM CELLS: CFU-GM AND BFU-E

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The drug 3'-azido-3'-deoxythymidine (AZT), a synthetic thymidine analogue, has been used in the treatment of AIDS. Clinical use of AZT has observed the induction of hematopoietic toxicity manifested by anemia, neutropenia, and overall bone marrow suppression. Cytokines/growth factors such as erythropoietin (EPO), GM-CSF, IL-1, and IL-6 are agents responsible for the growth and regulation of normal hematopoiesis by influencing various classes of hematopoietic progenitors. We report the results of studies designed to investigate the capacity of these factors to influence the toxicity of AZT. Low density (<1.077 g cm^3), adherent cell depleted normal human marrow cells were co-cultured in the presence or absence of AZT (LD_{50} dose) and the appropriate growth factor, i.e., EPO for BFU-E and GM-CSF for CFU-GM in dose escalation studies. Additional experiments measured the effect of increasing doses of either IL-1, IL-6, or optimum LiCl (1 mM) in the presence of increasing doses of either EPO or GM-CSF. EPO (up to 10 units) did not reverse AZT toxicity on BFU-E. GM-CSF alone (up to 1000 units) was ineffective in reversing AZT toxicity on CFU-GM; however IL-1 > IL-6 were effective in protecting both BFU-E and CFU-GM from AZT toxicity. Li, in the presence of EPO for BFU-E and GM-CSF for CFU-GM, or with the addition of either IL-1 or IL-6, induced protection on CFU-GM as well. These results indicate certain cytokines/growth factors such as IL-1, IL-6, and LI, but not EPO or GM-CSF are effective agents in ameliorating AZT induced bone marrow toxicity; therefore such agents may warrant clinical use as adjuvant therapy in AIDS.

S.B.431

ZIDOVUDINE THERAPY (AZT Rx) DELAYS PROGRESSION TO AIDS IN INTRAVENOUS DRUG USERS (IVDUs) WITH ORAL THRUSH (OT)

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OBJECTIVE: To examine the efficacy of AZT Rx in delaying progression to AIDS in HIV+ IVDUs diagnosed(dx) with OT in a NYC methadone program.

METHODS: From 6/85-12/88 IVDUs were enrolled in a prospective study of HIV infection. AZT was offered to any subjects with OT from 1987 onward. Of 81 IVDUs with OT dx from 1983-89, 21 took AZT (Group I) for ≥ 60 days (mean 10 mos), and 60 did not (Group II). All were monitored clinically and by immuno/hematologic markers. Follow-up was time from OT dx to AIDS, death (if no AIDS) or last visit. Outcomes were time to AIDS and death.

RESULTS: The two groups did not differ statistically by demography or baseline labs. T4 counts were 315 ± 253 in Group I and 442±413 in Group II and <200 in 50% and 28%, respectively. Mean β-2 microglobulin was 5.5± 2 in Group I vs 5.6 ± 2 in Group II. Mean follow-up in Group I was 18 mos. vs 15 in Group II. One subject (5%) in Group I progressed to AIDS 20 mos. after OT vs 19 (32%) in Group II, at a mean of 10 mos. post OT. AIDS incidence was 2.7/1000 person-mos. in Group I vs 21.1/1000 in Group II(p=.02). There were two deaths in Group I (1 AIDS and 1 pneumonia) vs 24 in Group II, from AIDS (n=17), pneumonia/sepsis (n=4), non-infectious causes (n=3). Pneumocystis prophylaxis was used by 9 in Group I and 3 in Group II.

CONCLUSION: In IVDUs with OT, AZT Rx was associated with slower and less frequent progression to AIDS and lower mortality. Though treatment assignment was not random, results are consistent with reported efficacy of AZT in other populations and show that AZT may be effectively given in a drug treatment setting.

S.B.432 ALTERED PHARMACOKINETICS OF ZIDOVUDINE IN FORMER IV DRUG-USING PATIENTS RECEIVING METHADONE.

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Objective: To determine if the pharmacokinetic disposition of either zidovudine (ZDV) or methadone is altered when the two are administered together.
Methods: Two study populations were examined at the initiation of ZDV therapy: 6 former iv drug-using (IVDU) patients on daily methadone maintenance therapy, and 4 control non-IVDU patients. ZDV pharmacokinetics were determined with the first dose of 200 mg ZDV and after 14 days of q4 hr ZDV administration. Methadone pharmacokinetics were studied immediately prior and subsequent to the first dose of ZDV, and after 14 days of q4 hr ZDV.
Results: Peak and mean conc. of ZDV was elevated 2 fold in 3 of 6 patients receiving methadone when compared to control patients. Area under curve (mean ± SD) for control and methadone patients on day 14 were 7.9 ± 1.1 and 12.0 ± 5.2 µM•hr. Methadone patients also had reduced clearance of ZDV, and lower relative urine ZDV-glucuronide levels. No changes in the pharmacokinetics of methadone were observed after the initiation of ZDV therapy.
Conclusions: Plasma levels of ZDV are frequently elevated in patients on methadone; preliminary evidence suggests this may reflect a decrease in metabolism of ZDV to the glucuronide.
Supported by the AIDS Clinical Trials Program of NIAID.

S.B.433 EVALUATION OF EFFICACY AND TOLERANCE OF 2 ZIDOVUDINE (AZT) DOSES (900 MG VS 1200 MG/D). A PROSPECTIVE RANDOMIZED STUDY

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Objective : to compare efficacy and tolerance of two doses of AZT given as curative treatment in HIV positive patients.
Methods : during 12 months, stage IV patients (CDC) having never received AZT, were randomized into 2 groups : G1 AZT 200 mg/4 h (reference dose) and G2 AZT 300 mg/8 h (dose upon evaluation). Therapeutic efficacy was evaluated by the number and delay in occurrence of an opportunistic infection (OI) and by the number of deaths. Tolerance was evaluated by side effects (SE) leading to a reduction of dosage or a break in treatment : hemoglobin < 7,5 %, neutrophils < 750 x 10^9 G/l, severe digestive intolerance, and delay in occurence. Statistical tests used were : Student t-test, Chi2 with Yates correction, Logrank test.
Results : 36 patients were included (18 vs 18). The 2 groups were comparable in age, sex, HIV risk factors, CDC stages, associated treatment, hemoglobin, neutrophils, CD4 (< 200/mm3). The average follow up was 8,5 ± 0,5 months for the 2 groups. The number of OI in the groups was 5 vs 3 (NS). The delay in occurrence 4,8 vs 4,6 months (NS), the number of deaths 2 vs 1 (NS). Side effects were statistically more frequent in group 1 than in group 2 (12 vs 5, p < 0,05). Probability of occurrence of SE after 12 months was 73 % in group 1 and 28 % in group 2 (p < 0,05). Due to reduction of dose because of SE, the average cumulative dose of AZT received by patient in each group was identical after 12 months of follow up (857 mg/d vs 804 mg/d, NS).
Conclusion : AZT at 300 mg/8 h was as efficacious than the reference dose and better tolerated. The evaluation of the new routes of administration (low doses, spread in administrations) should allow for a similar efficacy that will improve tolerance, and cost of the disease.

S.B.434 ERYTHROPOIETIN SERUM-LEVELS IN HIV INFECTED PATIENTS WITH ANEMIA AND WITH/WITHOUT AZT-TREATMENT

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Objective: HIV infection in itself and especially in combination with AZT-treatment with AZT may lead to anemia. Whereas blood transfusion is currently the usual treatment, substitution of erythropoietin is under discussion.
Methods: HIV infected patients with AZT-treatment (n=36) and without AZT (n=52) and HIV negative control patients (n=20) were studied for serum-level of erythropoietin in respect to the hemoglobin value (hb) using a 125-J-RIA kit (normal value: 8-34 mU/ml). Statistical analysis was done using the Mann Whitney U-Test.
Results: Median erythropoietin serum-levels were in HIV positive patients without AZT 42 mU/ml (hb < 10 g/dl), 51 mU/ml (hb 10-12 g/dl and 40 mU/ml (hb > 12 g/dl) and in patients with AZT 56 mU/ml (hb < 10 g/dl), 69 mU/ml (hb 10-12 g/dl), 44 mU/ml (hb > 12 g/dl). Within the groups with comparable hemoglobin values, no difference in erythropoietin serum-levels was found (p > 0.05).
Conclusion: An absolute or relative lack of erythropoietin is not the reason for anemia in patients with HIV infection or AZT-treatment. Further studies are necessary to prove, whether these patients benefit from raising erythropoietin to higher levels than normal.

S.B.435 CONCURRENT ADMINISTRATION OF GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR & ZIDOVUDINE IN PATIENTS WITH AIDS/ARC

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Objective: Determine tolerance, effective dose range, and antiviral effects of subcutaneous granulocyte-macrophage colony stimulating factor (GMCSF) and zidovudine (ZDV) in mildly neutropenic patients (pts) already receiving ZDV.
Methods: Open label trial of GMCSF (0.3 mcg/kg QD, 0.3 mcg/kg QD, 1.0 mcg/kg QD) with ZDV (300 to 1200 mg daily) for 28 days. At day 56 pts could elect long-term maintenance treatment. All pts had received ZDV previously with stable dosage and had absolute neutrophil counts (ANC) between 750 and 1200/mm^3 at entry. Hematologic parameters, CD4 cell counts, HIV cultures, p24 antigen levels, ZDV levels, signs and symptoms were followed.
Results: Eleven (7 AIDS, 4 ARC) pts were treated. Mean length of prior ZDV treatment was 11.4 months; mean CD4 cell count and ANC were 22 and 1077/mm^3 on entry. Nine of 11 pts had ANC increases of at least 2x baseline. Pts developed increased ANC, eosinophil count, and mean corpuscular volume, and slightly decreased platelet count. Four p24+ pts at entry showed a 33% decline after 28 days. Four pts developed either malaise, fever, or nausea and withdrew. Three pts elected long term administration of GMCSF and ZDV.
Conclusions: 1. GMCSF can correct ANC in pts receiving ZDV. 2. ZDV and subcutaneous GMCSF can be well tolerated. 3. An additive antiviral effect can be seen when GMCSF is combined with ZDV. 4. Future studies with GMCSF and lower doses of ZDV as antiviral treatment should be considered.

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S.B.436 GRANULOCYTE COLONY-STIMULATING FACTOR INCREASES NEUTROPHILS AND MONOCYTES IN ZIDOVUDINE-ASSOCIATED LEUCOPENIA.

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Objective: to study the effect of recombinant human granulocyte-colony stimulating factor (G-CSF) on white blood cell (WBC) counts in zidovudine-associated leucopenia.
Methods: 12 patients (8 AIDS, 4 ARC) with neutropenia (< 1000 neutrophils/ul) and currently using zidovudine (≥ 500 mg/day) were treated with G-CSF in a phase I/II study. Daily subcutaneous injections with G-CSF were given in weekly increasing doses of 0.4, 2, 5, or 10 mcg/kg body weight until neutrophils rose >3000/ul. This effective dose was given 4 weeks followed by a 4 weeks observation period without G-CSF.
Results: 2 patients (both with ARC) had neutrophils >3000/ul on the lowest G-CSF dose, while 9 needed 2 mcg/kg. One patient reached a neutrophil count of 1703/ul on a G-CSF dose of 5 mcg/kg, but discontinued treatment thereafter. We observed a significant increase in white blood cells, neutrophils and monocytes during treatment, returning to pretreatment levels after discontinuation of G-CSF (Table).

	day 0	1 week effective treatment	2 weeks post-treatment	
WBC	1508±175	7427±1120*	1620±125	mean±SEM
Neut.	665± 5	5917±1104*	781± 80	* = p<0.01
Mono.	170± 38	530± 114*	158± 18	

Side effects were slight bone, joint, and muscle pain in 3 patients and malaise -probably due to active CMV infection- in another patient. One patient developed severe trombocytopenia, requiring discontinuation of zidovudine treatment.
Conclusion: G-CSF increases neutrophils and monocytes in zidovudine treated patients in relatively low doses and with few side-effects, enabling continuation of zidovudine.

S.B.437 THE EFFECT OF R-HU ERYTHROPOEITIN ON HIV P24 ANTIGEN EXPRESSION IN ANEMIC ZIDOVUDINE TREATED AIDS PATIENTS.

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Objective: To assess the effect of recombinant human erythropoietin (r-HuEPO) on serum levels of Human Immunodeficiency Virus (HIV) p24 antigen.
Methods: 64 patients with AIDS enrolled in a placebo controlled double blind study of subcutaneously (SC) administered r-HuEPO (Eprex®) had sera stored for HIV p24 antigen determination at baseline (B) and at the end of 12 weeks of therapy. Patients received either r-HuEPO at 150 u/kg or a comparable volume of placebo administered SC 3 times a week for 12 weeks or until a hematocrit ≥ 38% was achieved. HIV serum p24 antigen levels were measured with a commercial enzyme immunoassay (Abbott Labs) and were considered increased if wk 12 value > B value. Positive antigen tests were confirmed by antibody neutralization. Dosage of zidovudine consumed by the patient in the prior week was recorded at B and wk 12 and recorded as mg/wk. Zidovudine therapy was classified as stable if B value = wk 12 value, increased if B > wk 12, and decreased if B < wk 12.
Results: At B 17 of 33 placebo patients vs 16 of 31 r-HuEPO patients were p24 antigen (+) (p=1.0). At wk 12, 22 of 33 placebo patients vs 17 of 31 r-HuEPO patients were p24 antigen positive (p=.3). In the placebo group HIV p24 antigen was increased in 13 of 33 vs 14 of 31 r-HuEPO (p=.8). After stratifying for stable, increased or decreased zidovudine dosage there was no effect of r-HuEPO on increased p24 antigen expression.
Conclusion: r-HuEPO administered subcutaneously does not increase HIV p24 antigen expression in anemic AIDS patients receiving zidovudine.

S.B.438 Zidovudine pharmacokinetics in children following I.V. and/or oral route.

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Objective: To study the pharmacokinetics of zidovudine and its glucuronide in children of various group of age, to characterize the influence of cotrimoxazole on zidovudine metabolism, and ensure a therapeutic drug monitoring.
Methods: 32 children divided in 3 groups have been studied: - 8 children, 0.4-12.5 years old, underwent an initial two weeks treatment with zidovudine as an 1 hour infusion at a dose of 100 mg/m² every six hours. Then they were switched to an oral dose on the same schedule; the children received prophylactic cotrimoxazole (25 mg/Kg/day) from the day 3. Blood samples were drawn on day 3, 11 and 28. Urine samples were collected. 3 new borns, 15-21 days old, received an 1 hour infusion (100 mg/m²) and were sampled at time 1-2-3-4 H to have an estimation of their PK parameters.- 21 children,0.33-15.6 years aged, received different oral doses (28-156mg/m²) the dosing regimen being established according to hematological status.All the samples were assayed by HPLC.
Results:

patients	n=8 IV	n=8 Oral	N=3 IV	n=21 oral
t1/2 (h)	1±0.1	2.7±1.5	1.8±0.4	1.3±0.3
Cl or Cl/F(ml/mn/m²)	320±78	650±168	384±70	1923±234

Conclusion: Some age-related differences in the overall elimination for zidovudine do exist and a relatively low rate of glucuronidation in children might explain these differences in younger children.

S.B.439 THREE YEAR PROSPECTIVE EVALUATION OF T CELL SUBSETS IN ASYMPTOMATIC HIV INFECTED INDIVIDUALS TREATED WITH ZIDOVUDINE.

Tsoukas, Chris; Friedman, J; Fanning, M; Montaner, J; Wells, G; Falutz, J; Tostowaryk, W; Ruedy, J.Multicentre AZT Toxicity Study.Canada.

Objective: To evaluate the long-term effects of Zidovudine on T cell subsets of asymptomatic HIV seropositive individuals.
Methods: A Multicentre prospective study enrolled 74 HIV seropositive men (CDC groups II, III and IV-C2) between January and May 1987. Following a 6 week baseline observation period where CD4 counts were measured twice, zidovudine was given incrementely up to 1200 mg/day. Except for a washout period of 6 weeks between weeks 36 and 42, the cohort received 1200 mg/day since then. Patients were analyzed in groups A-D, based on their initial mean CD4 count prior to treatment - Group A (<300), B (300-500), C (500-1000), D (>1000). The rate of change of CD4 counts in 53 individuals who continued treatment past two years were assessed using linear regression analysis.
Results: There was an initial slight increase in mean CD4 counts up to week 36 followed by a slow and linear decline over time to week 108.

Week	Group A (n=6)	Group B (n=20)	Group C (n=21)	Group D (n=6)
0	255	391	694	1430
36	284	399	722	1191
60	229	317	631	1084
84	202	292	611	1210
108	195	268	543	733
Regression Coefficient	-1.13	-1.28	-1.53	-3.65
P value	<.03	<.0002	<.002	<.02

Conclusions: The rate of decline of CD4+ T cells during prolonged AZT treatment of this cohort was less than reported in untreated individuals.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.440 ASSESSMENT OF ZIDOVUDINE THERAPY AND CONCURRENT OPIATE USE

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Objective: Since prior research had indicated that opiates alter the pharmacokinetics of Zidovudine, we wished to assess the outcome of concurrent opiate use on Zidovudine therapy.
Results: We have treated 100 patients with Zidovudine at the Infectious Diseases Unit over 2.5 years commencing in July 1987. They were grouped as follows - 30 homosexuals, 66 IDUs and 4 of other risk groups. In the IDU group, 10 stopped treatment themselves because of side effects. All reported nausea some with associated headaches and dizzy spells. Fifty-six were then assessed on Zidovudine therapy, 39 of whom were concurrently using opiates. Progression, while on therapy, occurred in 13 patients. There were 3 deaths within the group, 1 incidental and 2 AIDS related. Opiate use continued in 10/13 including the 3 deaths. Forty-three had no evidence of progression and 29 of these continued with opiate usage. Marrow toxicity was recorded in 17 patients, 13 becoming transfusion dependent and 4 with episodes of neutropenia alone. Opiates were taken by 13/17. Of the 39 with no marrow problems, 26 continued on opiates. There is no statistical significance with intercurrent opiate use on either progression, marrow toxicity or transfusion requirements.
Conclusion: Although pharmacokinetic studies show potentiation of Zidovudine levels in patients currently using opiates we have, so far, not encountered any statistically significant increases in toxicity or a change in the rate of progression in those who continue to use opiates while on Zidovudine therapy. There is therefore no contra-indication to initiating Zidovudine therapy in the presence of opiates.

S.B.441 MOTOR PERFORMANCE OF HIV-POSITIVE PATIENTS UNDER AZT-THERAPY

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Objective, Methods: 50 HIV-positive patients without clinically evident central nervous deficit, cerebral opportunistic infection, alcohol- or drug-abuse and with normal MRI-Scans were tested for motor performance. Parameters tested were: tremor of the outstretched hands, most rapid alternating index finger movements (VAM) and rise times of most rapid voluntary isometric index finger extensions (VIE). In comparison to an age- and sex-matched control group patients showed no abnormalities in tremor peak frequencies, but a slowing of VAM ($\bar{x}$ pat. = 5,54 Hz ± 1.13 Hz; $\bar{x}$ con. = 6,18 ± 1,1 Hz) and a significant prolongation of the index finger extension times ($\bar{x}$ pat. = 162,0 ± 40,8 ms; $\bar{x}$ con. = 118,2 ± 35,6 ms, right hand) with no differences in reaction times. Motor parameters were tested again 3, 6, 12 and 24 weeks after starting AZT-treatment in comparison to another group of HIV positive patients of comparable age, social education and pathologic motor performance without any kind of therapy. Results: Whereas tremor peak frequencies remained normal in both of the groups during the whole period and VAM remained slow, the most rapid voluntary isometric index finger extensions showed a continuous significant amelioration (162,0 ms ± 40,8 at the beginning; 149,0 ms ± 35,9 ms after 3, 140,0 ± 31,2 ms after 6, 139,0 ± 39,4 ms after 12 and 126,0 ± 38,4 ms after 24 weeks) in the treatment group, but a further increase of prolongation in the non-treated group after 24 weeks (153,0 ± 34,0 ms at the beginning of the study, 174,0 ± 37,0 ms after 24 weeks). There were no corresponding changes in the reaction times, which were in the normal range in all groups. Conclusion: It is concluded, that the most rapid voluntary index finger extensions are highly sensitive in detecting central-nervous deficit in HIV positive patients and can be used as a control parameter in therapy.

S.B.442 COMPARATIVE ORAL DISPOSITION OF ZIDOVUDINE IN NEUTROPENIC AIDS PATIENTS AND ASYMPTOMATIC HEMOPHILIACS

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Objective- To compare oral Zidovudine(ZDV) disposition in AIDS patients and asymptomatic hemophilia(H) patients.
Methods- Ten grade II neutropenic AIDS patients enrolled in ACTG protocol 065 and 8 asymptomatic, HIV-infected H patients in ACTG protocol 017 (previously reported:Antiviral Res;11,1989) were evaluated following a single dose of ZDV (100mg-300mg). Blood samples were collected over a single dosing interval and analyzed for ZDV and ZDV-glucuronide(GZDV) by HPLC. Area under the curve (AUC) results were normalized to a 100mg dose for comparison.
Results- Mean values for ZDV and GZDV AUC(ng•h/ml),oral clearance(ml/min/kg), and the peak and 4h ratio of GZDV to ZDV concentration are shown below:

	Hemophilia	Neutropenic AIDS	p value
ZDV AUC	1072 ± 574	426 ± 415	NS
GZDV AUC	2699 ± 1263	5606 ± 2115	NS
Oral Clearance	28 ± 15	64 ± 25	< 0.05
Peak GZDV/ZDV	2.8 ± 1.8	14.8 ± 7.0	< 0.05
4h GZDV/ZDV	3.0 ± 2.4	15.2 ± 7.7	< 0.05

Conclusions- These data indicate that the disposition of oral ZDV was different between these two patient groups. Since oral clearance is influenced directly by bioavailability and inversely by AUC, the lower clearance in H patients may reflect underlying chronic hepatitis resulting in decreased first-pass metabolism and an increased AUC, while the higher oral clearance in the AIDS patients may have been due to decreased absorption and a lower AUC secondary to HIV enteropathy or other factors.

S.B.443 EVALUATION OF SALIVARY CONCENTRATIONS OF ZIDOVUDINE FOR MONITORING DRUG THERAPY

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Objective: To examine the correlation between plasma and saliva concentration of Zidovudine (ZDV), as collection of saliva for drug monitoring is cheap, easy, and minimizes the discomfort to patients as well as the infectious risk for the medical staff.
Methods: Pharmacokinetics in 10 HIV-positive male adults were compared in venous blood samples, unstimulated and citric acid stimulated mixed saliva. Samples were collected every half an hour for 3 1/2 hours after a single oral dose of 250 mg of ZDV. ZDV concentrations in plasma and saliva were determined by HPLC, by a modification of the method of Good et al.[1]
Results: **(1).** A correlation of r= 0.96 between ZDV levels in plasma and stimulated saliva was observed (p< 0.001), with concentrations in stimulated saliva being 78 % of plasma levels. This was true for both absorption/distribution and elimination phases. **(2).** Peak concentrations were reached after 30 min in plasma (5,01 ± 1,69 µmol/l) as well as in stimulated (3,57 ± 1,13 µmol/l) and unstimulated (5,5 ± 2,63 µmol/l) saliva. The half lives in plasma and stimulated saliva for the distribution phase were 32.1 ± 8.7 min vs 30.6 ± 9.6 min and for the elimination phase 69.8 ± 10.7 min vs 51.9 ± 7.4 min respectively. **(3).** The correlation between unstimulated saliva and plasma levels was r= 0.86 (p< 0.001). Unstimulated saliva levels were higher than plasma levels in the distribution phase, but tended to be lower in the elimination phase.
Conclusions: For monitoring ZDV therapy stimulated mixed saliva is an appropriate specimen with obvious advantages.

1.Good SS,Reynolds DJ, Miranda P: Simultaneous quantification of zidovudine and its glucuronide in serum by high-performance liquid chromatography. J Chromatography 431 (1988), 123-133

S.B.444

SAFETY AND EFFECTS OF INTERLEUKIN-2 PLUS ZIDOVUDINE IN ASYMPTOMATIC INDIVIDUALS INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS.

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Objectives: We examined the safety and effect on virologic and immunologic parameters of Interleukin-2 (IL-2) plus Zidovudine (ZDV) in asymptomatic Human Immunodeficiency virus (HIV)+ patients.
Methods: Asymptomatic seropositive patients with T4 cells > 400/ul received ZDV plus recombinant human IL-2 for 4 weeks following an initial 8 weeks of ZDV alone. Three patients received IL-2 without concomitant ZDV. Daily doses of IL-2 from 1.5 - 12 x 10^6 IU/m^2 were administered continuously for five days per week via central venous indwelling catheter attached to a portable pump.
Results: Therapy was generally well tolerated, with the anticipated fever, headache, myalgia, fatigue and mild desquamation the most common toxicities. Levels of serum p24 did not rise during combination therapy, and viral growth in patients' cells co-cultured with normal lymphocytes remained essentially unchanged. Significant ($P < 0.05$) but transient increases in T4 cells were observed midway through infusion of the lowest doses of IL-2 (1.5 - 3.0 x 10^6 IU/m^2/d). No increase was seen in lymphocyte killing of K562 and Daudi targets at these doses, however we did observe increased lysis of autologous EBV-transformed vaccinia-infected B cells expressing HIV or irrelevant antigens. At higher IL-2 doses (6 - 12 x 10^6 IU/m^2/d) a more sustained rise in T4 cells was noted, along with increased lysis of K562, Daudi, and vaccinia-infected EBV targets. A significant ($P < 0.01$) increase in skin test reactivity at the lowest dose of IL-2 was not seen at higher doses, possibly related to induction of immature lymphocytes and increased numbers of circulating hypodense eosinophils. Increased numbers of eosinophils and soluble IL-2 receptors were the parameters most responsive to IL-2 infusion.
Conclusions: 1) Continuous IL-2 infusion in the presence of ZDV was well-tolerated by asymptomatic HIV infected individuals on an outpatient regimen. 2) Transient improvements were seen in various cell-mediated immune parameters. 3) No increase in serum p24 or viral recovery by co-culture was induced by IL-2 in the presence of ZDV. 4) The use of IL-2 in combination with antiviral therapy in the treatment of HIV disease may warrant further study.

S.B.445

COMPLIANCE AND TOXICITIES OF LONG-TERM TREATMENT WITH ZIDOVUDINE (AZT) IN PATIENTS WITH SYMPTOMATIC HIV INFECTION.

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OBJECTIVE: To determine the compliance with, and toxicities of, study medication in a long-term, randomized, double-blind trial of AZT vs placebo in symptomatic HIV infection.
METHODS: Patients with proven HIV infection, CD4 counts between 200-500/cmm and one or more symptoms are randomly assigned to treatment with AZT 250 mg orally every 4 hr or placebo. Clinical, virologic and immunologic status of the patients are followed at regular intervals; patients are taken off study medication and started on open-label AZT when they develop AIDS or their CD4 falls to 200/cmm. Compliance is assessed by pill count, assay of serum AZT and MCV.
RESULTS: Thus far, 336 patients have been randomized; the mean followup is 14 months. By pill counts, both treatment groups have 94% compliance. Comparing AZT with placebo, there are significant differences for serum assays compliance (90 vs 96%), severe leukopenia (8.6 vs 0.8%, anemia (3.9 vs 0%), moderate diarrhea (31.3 vs 18.8%), nausea and vomiting (41.4 vs 15.8%) and skin rashes (41.4 vs 54.9%).
CONCLUSION: We conclude that patients assigned to each group are compliant but that significant toxicities occur at the dose of AZT used in this study. Efforts must be directed toward determining its minimum effective dose as well as the proper strategy for its early use.

S.B.446

INABILITY TO DISTINGUISH BETWEEN 800MG/DAY AND PLACEBO BY WALTER REED/DOD CLASSIFICATION SCHEME OF PROGRESSION IN A DOUBLE BLIND STUDY OF DOD 2-5 WITH ≤ 500 CD4/mcL

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Objective: To examine utility of Walter Reed staging/classification scheme (DOD) of HIV infection in drug interventions.
Methods: During a double blinded, randomized trial of 200 mg Zidovudine q 6 hours (Z) or placebo q 6 hours (P) classification system was applied to 218 DOD class 2-5 patients which were entered with persistent helper cell counts less than 500 (CD4/mcL) in an effort to see a difference in progression of the two comparable groups. 172 patients had evaluable classifications taken arbitrarily as those with more than 100 days of followup. As the original staging system didn't specify definition of persistence for skin test results nor CD4 ≥ 400mcL, 80 days was used. Evaluation was terminated 19 Sep 89 when all P patients were rolled over to Z.
Results: 31 DOD 2 on P: 54.8% progression/38.7% progression ≥ 2 classes
39 DOD 2 on Z: 28.2% progression/15.4% progression ≥ 2 classes
49 DOD 3-5 on P: 36.7% progression
53 DOD 3-5 on Z: 41.5% progression
Conclusions: There was no clinically significant difference with 800 Z/day in progression thru higher classes to DOD 6, to B signs, nor acquisition of CNS disease. These small numbers, however, suggest benefit for the DOD class 2 in the narrow window between 500 and 400 CD4 helper cells/mcL.

S.B.447

LONG TERM EFFICACY OF ZIDOVUDINE IN ARC AND AIDS PATIENTS

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Objective: To evaluate the long term efficacy of zidovudine (ZDV) in 365 consecutive patients with ARC (n=80) or AIDS (n=285) (Lancet, 1988, ii, 1297-1302).
Methods: ZDV, 200mg/4h whenever possible (260 patients) or 200mg/8h otherwise (105 patients) was given to 80 patients with ARC and 285 patients with AIDS who were prospectively followed for a mean (and range) of 102 (45-130) and 113 (22-130) weeks respectively. Mean age was 36 years and 71.5% of the patients were homosexuals. Of the 285 AIDS patients, 72 had Kaposi sarcoma (KS) and opportunistic infection(s) (OI), 19 had KS, 190 had OI(s), 2 had a lymphoma and 2 HIV dementia. For AIDS and ARC patients respectively the baseline values were : CD_4 cells: 75±90 and 140±105/mm^3, hemoglobin: 11.4±1.8 and 13.0±1.8g/dl.
Results: When analysis was done, 11 patients had been lost for follow up for more than 12 weeks and 222 were dead. Of the 143 surviving patients, 39% could not receive ZDV at least for the 4 last weeks before analysis because of toxicity. Overall, 421 OI (in 189 patients), 32 KS, 23 lymphoma, 5 cancers and 20 dementia were recorded in AIDS patients. Survival rates were 69, 47, and 25% at 12, 16 and 24 months. In ARC patients, 67 OI (in 38 patients), 19 KS, 5 lymphoma and 2 cancers were diagnosed. Of the 80 ARC patients, 26 (32.5%) died (mean: 66 weeks after initiation of ZDV) and 26 (32.5%) are alive but have progressed to AIDS (mean: 45 weeks after ZDV was started). For ARC and AIDS, the survival rates are identical in patients whose initial ZDV treatment was 200mg/4h and 200mg/8h.
Conclusion: at least in ARC and AIDS patients, the efficacy of ZDV is time limited. The increase in life span of these patients probably allow a number of neoplasia and of worrisome OI (toxoplasmosis, CMV, MAI) to appear.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.448 ZIDOVUDINE (ZDV)-ASSOCIATED MYOPATHY IN A LARGE CLINIC POPULATION

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Objective: To evaluate the incidence, clinical characteristics, and course of ZDV-associated myopathy in a large VA clinic population.
Method: Serial serum creatine kinase (CK) levels of the 352 patients receiving ZDV for ≥2 mos at the NYVAMC from 3/87-12/89 were surveyed. Charts of patients with CK values ≥5X upper limit of normal, and with a compatible clinical history by several defined criteria, were reviewed.
Results: Nine (9) cases of myopathy attributable to ZDV therapy are reported. Elevations in CK occurred from 14 wks to 24 mos after institution of ZDV therapy (median, 15 mos). Dosage of ZDV ranged from 400-1200 mg daily and could not be significantly correlated with development of myopathy. Peak CK ranged between 355 and 2284 IU/L (median, 1115 IU/L; nl, ≤70 IU/L). Risk factor, concomitant medications, serum creatinine, CDC HIV stage, and total CD4 count also could not be significantly associated with development of myopathy. All of the 8 patients on whom follow-up data were available had reduction in CK levels after discontinuation of drug or decrease in dosage within 2 mos; 4 of 5 symptomatic patients (i.e., with calf tenderness, weakness) had resolution of symptoms. Of the 3 patients who were rechallenged with ZDV after resolution of symptoms off medication, 2 became symptomatic within 1 mo and 1 had an increase in CK at 3 mos.
Conclusions: In this population, ZDV-induced myopathy is an infrequent complication of therapy, which may occur early after institution of treatment, and which may require indefinite withdrawal of drug.

S.B.449 LONG TERM TREATMENT WITH ZIDOVUDINE (± ACYCLOVIR) OF ASYMPTOMATIC HIV-I INFECTED SUBJECTS

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Objective: To study the effects of long term treatment with simplified-dosage zidovudine (± acyclovir) of asymptomatic HIV-I infected subjects.
Methods: Eighteen asymptomatic men with persistent p24 antigenemia were treated with zidovudine 250-500 mg 6-hourly for 4-12 weeks and subsequently 500 mg 12-hourly for 118 weeks, of whom 6 in combination with acyclovir 800 mg 6-hourly for 12 weeks and subsequently 1600 mg 12-hourly for 118 weeks. Six additional p24 antigenemic men were treated directly with zidovudine 500 mg 12-hourly for 104 weeks.
Results: Disease progression occurred after 60-117 weeks in 6/24 subjects, all to CDC IV-C1. Two of them were treated with zidovudine and acyclovir. In the group of disease progressors median serum p24 levels declined from 539 pg/ml at the start of treatment to 91 pg/ml at the moment AIDS was diagnosed; median CD4+ counts declined from 0.2 to 0.04×10^9/l. In the group of non-progressors median p24 levels declined from 294 pg/ml at the start of treatment to 97 pg/ml at the end of the study period; median CD4+ counts declined from 0.4 to 0.3×10^9/l. Two therapy-compliant non-progressors showed both ± 100% rise in p24 levels. Anaemia caused symptoms in 3 men; prolonged neutropenia did not occur. None developed myopathy.
Conclusion: Tolerance of zidovudine treatment in asymptomatic subjects is still good after 2-2.5 years. Disease progression occurs despite sustained reduction of serum p24 levels. Combination with acyclovir seems to give no additional benefit.

S.B.450 ZIDOVUDINE TREATMENT IN HIV-INFECTED INTRAVENOUS DRUG USERS. COMPLIANCE WITH LONG-TERM TREATMENT AND EFFICACY.

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Objective: To assess the compliance with long-term zidovudine treatment and the efficacy of therapy in a cohort of intravenous drug users (IVDUs).
Methods: Eighty-six HIV-infected IVDUs were treated with oral zidovudine for 3-24 months in an outpatient setting. A retrospective, historical control group of 127 IVDUs was selected according to disease staging.
Results: Cumulative probability of voluntary zidovudine discontinuation was 9% at 3 months, 29% at 6 months, and 38% at 9 months. No more drop outs occurred after 9 months of treatment. Monitoring of mean corpuscolar volume of red blood cells well correlated with time of treatment. Patients receiving zidovudine showed a cumulative probability of survival at 12 months of 88±9.8%, as compared with 50±8.6% in untreated patients ($P<0.001$). Less opportunistic infections occurred among zidovudine treated subjects than among untreated patients (4 vs. 15, respectively, after 12 months; $P<0.001$). Marrow toxicity was the most relevant toxic effect observed.
Conclusion: Acceptable rates of compliance with long-term zidovudine treatment are attainable in IVDUs. Survival data and incidence of opportunistic infections show that HIV-infected IVDUs can benefit from continued zidovudine treatment.

S.B.451 DOUBLE-BLIND DOSE-RESPONSE STUDY OF ZIDOVUDINE IN SERIOUS HIV INFECTION AND AIDS

Nordic Medical Research Council's HIV Therapy Study Group. Coordination office: Department of Infectious Diseases M 7431, Rigshospitalet, Copenhagen, Denmark.

Objective: To compare three doses of zidovudine.
Methods: Randomized, double-blind study of 400 mg, 800 mg, and 1200 mg zidovudine daily. All receive 3 capsules q.i.d.
Results: 478 patients in Scandinavia were enrolled between February 1, 1988, and December 31, 1989. Median follow-up till December 31 was 442 days. At admission, 27% had AIDS, 52% had current or previous HIV-related symptoms, and 21% had low CD4 cell counts (mostly below 200/mm³). Probable mode of transmission: homo- or bisexual 78%, heterosexual 14%, i.v. drugs 5%, transfusion 3%. Ninety-two percent were males.

Pneumocystis carinii infection was reported for 15% at admission; during follow-up it occurred in 48 patients, 9 of which were relapses. Kaposi's sarcoma was reported for 25 patients initially and for a further 23 during the trial.

Treatment was discontinued in 23% of the patients; the causes were: death 32%, side effects 29%, poor compliance 13%, wished open zidovudine or other anti-HIV drug 6%, wished no zidovudine at all 4%, other 16%. Blood transfusions were given to 18% of the patients, temporary treatment withdrawal was necessary in 26%. Forty-three patients have died.
Conclusion: Based on an interim analysis, a data monitoring committee has recommended that the trial be continued.

S.B.452 Canadian Open Trial of Zidovudine (ZDV) in Progressive Generalized Lymphadenopathy (PGL) Patients.

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Objective. To establish the safety, tolerance and survival of PGL patients on ZDV.
Method. In this open label non-randomized, multicenter trial, HIV positive patients were classified according to the CDC criteria by the collaborating physicians. Following a baseline T4 count, haematologic and biochemical parameters were monitored monthly as well as the use of concomitant medication, development of adverse events or opportunistic infections and the use of blood products. Completion of monthly follow-up forms were required to receive further ZDV (sole source in Canada).
Results. Between 5/87 and 11/11/89, 1193 patients were entered in the trial with a median follow-up of 6 months (range 1-28 mths.) Thirty-one (31) patients died during the study. Assuming that all patients permanently discontinued (39) also died (worse scenario) then survival at 29 months was 94.1%. In 24.2% of patients adverse drug reactions were reported and 1.09% of patients required blood transfusions for anaemia. Concomitant medications were frequently used. 56% of patients received acyclovir and 25.3% some form of PCP prophylaxis.
Conclusion. ZDV is relatively well tolerated in patients with less advanced HIV disease.

S.B.453 PHARMACOKINETIC ASPECTS OF A THERAPEUTIC DRUG MONITORING OF AZIDOTHYMIDINE IN AIDS PATIENTS

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In attemt to improve therapeutic drug monitoring of azidothymidine (AZT), we have studied the pharmacokinetic aspects of AZT therapy in 10 AIDS-patients suffering from advanced HIV-1 infection. They were receiving oral AZT therapy for more than 6 weeks on a 4-hour regimen. Heparinized blood was collected in 10-20 min intervals beginning and ending at time of AZT administration. AZT plasma levels were determined by a new HPLC-method and by fluorescence polarisation assay.
Results obtained showed a considerable variance in AZT pharmacokinetics. In 5/10 patients peak values ranging from 1-6µM were encountered 40-60 min after the last dose; they subsequently declined in a biexponetial fashion. An unexpected AZT kinetic was seen in 5 of the patients that was characterized by a slow increase resulting in a peaking of AZT levels up to 180 min after the last dose. AZT pharmacokinetic did not correlate with the severety of AZT-induced anemia/leucopenia and could also not be easily explained by interaction with other drugs or HIV-1 associated diseases.
Our results show that pharmacokinetics of AZT in AIDS-patients seem to be more variable than previously thought and that an appropriate therapeutic drug monitoring requires multiple rather than single AZT plasma determinations at defined intervals.

S.B.454 PHARMACOKINETICS OF ZIDOVUDINE IN PATIENTS WITH LIVER CIRRHOSIS

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Objective: The pharmacokinetics of zidovudine (ZDV) was investigated in patients with hepatic failure after single dose oral administration (200 mg).
Methods: fourteen HIV seronegative patients with cirrhosis were included. They were divided in three groups according to the severity of the liver disease quantitated by the Child-Pugh's score (range 6 to 12). Plasma and urine concentrations of ZDV and its glucuronidated metabolite (GZDV) were measured simultaneously by HPLC. Results were compared to those obtained in 6 healthy volunteers.
Results: The following mean (± SD) pharmacokinetic parameters were obtained :

	ZDV		GZDV	
	Patients	Controls	Patients	Controls
Cmax -µmol/l-	11±5*	4±1	7±3**	15 ± 3
Tmax -h-	0.8±0.9	0.6±0.2	1.3±0.9*	0.8±0.2
AUC -µmol.h/l-	20±6**	5±1	29 ± 11	24 ± 5
half-life -h-	2.4±1.2*	1.0±0.4	2.4±1.4*	0.9±0.2
MRT -h-	2.9±1.0**	1.5±0.3	3.9±1.4*	1.7±0.4

* $p<0.05$, ** $p<0.01$

Increase in ZDV concentrations in patients is a consequence of a marked drop in oral clearance (10±4 vs 38±15 ml/min/kg). Interindividual variation is high among patients and no difference could be established between the three groups. Rate of formation of GZDV is reduced in cirrhosis which led to a decrease in the AUC ratio of GZDV and ZDV (1.3±0.6 vs 4.6±0.7) which was directly related to the severity of cirrhosis.
Conclusion: To avoid important cumulation of ZDV after repeated dosing in patients with AIDS and hepatic impairment, a dosage adjustment could be proposed.

Other Antiretrovirals

S.B.455 PHARMACOKINETICS OF D4T (BMY-27857), A NEW ANTI-HIV AGENT, IN PATIENTS WITH AIDS OR ARC ON A QID REGIMEN

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Objective: To determine the pharmacokinetics of d4T in patients with AIDS or ARC in a Phase I clinical trial.
Methods: This was an open, dose ranging, safety and tolerance, and a preliminary efficacy study entailing oral administration of capsule doses of d4T to parallel groups of patients (N=5). Serial plasma and urine samples, collected after a single dose (on study day 1) and at steady-state (on study day 8 or 9 or 20), were assayed for d4T by validated HPLC/UV assay methods.
Results: Currently available mean oral plasma pharmacokinetic data for the 0.5, 1 and 2 mg/kg QID dosing regimens are presented below:

		Single Dose			Steady-State		
DOSE	(mg/kg QID)	0.5	1	2	0.5	1	5
CMAX	(ug/ml)	0.7	1.3	2.2	1.2	1.6	2.6
TMAX	(h)	0.5	0.8	0.7	0.5	0.8	0.6
T-HALF	(h)	1.2	1.2	1.1	1.5	1.3	1.9
AUC(0-6)	(h.ug/ml)	0.9	2.2	3.6	1.1	2.3	4.2
AUC(INF)	(h.ug/ml)	0.9	2.2	3.7	-	-	-

Conclusion: CMAXs and AUCs are dose-related. At steady-state, the pharmacokinetics of d4T appear to be consistent with single dose pharmacokinetics.

S.B.456

PHASE I STUDY OF 2',3' - DIDEHYDRO - 2',3'- DIDEOXY-THYMIDINE (d4T) IN PATIENTS (Pts.) WITH AIDS OR ARC

Browne, Marcia J. presenting for the Brown University AIDS Program, Clinical Trials Group
Brown University, Providence, Rhode Island

Objective: To evaluate the safety and efficacy of the pyrimidine analogue d4T in pts. with AIDS or ARC.
Methodology: Four daily dose levels were tested: I-2mg/kg/day;II-4mg/kg/day; III-8mg/kg/day; IV-12mg/kg/day, given in 3 divided doses.
Results: 6 AIDS and 14 ARC pts. (19 males and 1 female) were tested for up to 36 weeks (wks). Risk factors were IV drug abuse (4), homosexuality (11), both (4), unknown (1). The median age was 34 (range 23-60). Sensory peripheral neuropathy requiring discontinuation of d4T developed in 8 pts. (40%) between 6 and 38 wks: 1 on levels I and II, 2 on III, and 4 on IV. 5 pts. required RBC transfusions. 1 pt. had reversible hepatotoxicity The mean baseline absolute CD4 Cell count was 181 (range 10-438) and increased at 6 wks. to 254 (range 30-690). The mean absolute CD4 cell count at 12-14 wks. in 13 pts. was 381 (range 50-790) and in the 5 pts. on level I at 30 wks. was 476 (270-770). 10/20 pts. were p24 Ag positive (mean level 139 pg/ml, range 36-483). None of the p24 Ag negative pts. became positive on drug. 5/10 p24 Ag positive pts. became negative and all p24 Ag levels declined. Amelioration of symptoms was seen in 17/17 pts. with fatigue, 9/10 with fever, 12/12 with night sweats, and 13/14 with lymphadenopathy. (p <.001) 13 pts. gained a mean of 1.7 lbs. at 6 wks. 3 pts. developed opportunistic infections: PCP (2) at wks. 8 and 24; candida esophagitis (1) at wk. 10. Conclusion: 1) Dose limiting toxicity is sensory peripheral neuropathy; 2) All pts. had an early rise in absolute T4 counts 3) p24 Ag levels decreased in all pts.; 4) Constitutional symptoms were ameliorated in the majority of pts.; 5) The current trial is assessing whether the efficacy and low toxicity of d4T at lower doses is sustained.

S.B.457

OPEN STUDY OF TACRINE HYDROCHLORIDE IN HIV P24 ANTIGEN POSITIVE PATIENTS

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OBJECTIVES: To evaluate the in vitro/vivo activity of the putative antiretroviral agent tetrahydroaminoacridine (THA). THA has been given to 9 HIV seropositives in France and at 60 days there was a significant increase in T helper cell counts and a decrease in HIV p24 antigen levels in 8 patients. No adverse events were seen and it was stated that in vitro studies had shown that THA (10/-6 mol) resulted in 100% inhibition or viral RNA polymerase (1).
METHODS: Seven patients (1-AIDS, 6-ARC: T4 helper cells 150-300/cu mm, HIV p24 antigen >200micromol/l) took THA orally 25mg 3 times daily for 1 week then 50mg 3 times daily for 12 weeks. They were monitored monthly during the study with blood taken for lymphocyte subsets and HIV p24 antigen (Abbott ELIZA).
RESULTS: No change occured in the clinical state of the participants during the study. No significant weight gain, fall in p24 antigen levels or rise in T4 helper cells was noted. There were no significant changes in haematological or biochemical parameters. In vitro THA had no activity in fusion assay systems, infectivity assays using p24 isolation as endpoint or against cells chronically infected with virus.
CONCLUSION: THA has no in vivo or in vitro activity as evaluated by these methods and it is unlikely to be an antiretroviral agent. Results that disagree with the original unreferenced in vitro efficacy have recently been published supporting our observations (2). Refs: 1. Fredj, G. et al. J Clin Pharm & Tox 89;27:408-11. 2. Mathe G et al. Biomed Pharma 89; 43:235-236.

S.B.458

FOLLOW-UP OF HIV INFECTED POST AZT PATIENTS TREATED BY TACRINE (THA)

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OBJECTIVE : Evaluation of survival rate, clinical and serological status in patients treated with THA after discontinuation of AZT treatment for intolerance.
METHODS :15 patients (2 females-13 males) with stage IV HIV infection (IVC1:9 pts, IVA:2 pts; IVD:4 pts) were treated with AZT (600-1200 mg/day). Due to medullar toxicity, AZT had to be discontinued after 25 +/- 9 weeks (range 12-50) of treatment. Within one month after discontinuation of AZT the patients were treated by THA (150-250 mg/day).
RESULTS : The mean duration of THA treatment was 18 weeks (range 8-42 weeks). In table above, the results are expressed as mean variation (%) after treatment (Dt) in comparison with absolute values at Do.

	AZT sequence		THA sequence	
	Do	Dt	Do	Dt
Lymphocytes CD4/mm3	156	-52%	72	+22%
Antigenemia P24 (ug/ml)	1153	+51%	2507	-35%
Deaths	-	0	-	0
Opportunistic infections	-	6	-	0
Kaposi sarcoma emergence	-	2	-	1

CONCLUSIONS : Patients already treated with AZT have no alternative treatment after discontinuation of AZT for medullar toxicity . Despite the fact that there is no control group, THA treatment yields encouraging results which should be confirmed.

S.B.459

PHASE I STUDY OF INTRANASAL PEPTIDE T: CLINICAL AND LAB RESULTS

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Objective: To evaluate the toxicity and safety of the 3x/daily intranasal administration of Peptide T, a homologue of VIP and a gp-120 receptor blocker.

Methods: Thirty-two outpatient participants with CDC IV HIV symptoms and 100-500 CD4 cells/mm³ were randomized to receive 1.2, 6.0, or 30 mgs of Peptide T in 3 equally divided daily doses by nasal inhaler for 12 weeks, then went off drug (blinded) x 4 weeks, and then restarted on drug x 8 more weeks. Participants who were clinically stable at 6 months continued to receive drug and be monitored.

Results: No specific Peptide T-related toxicities have been noted. Two subjects developed maculopapular rashes-both while receiving antibiotics for bacterial infections. Three subjects -all on the lowest dose- developed PCP (2 were on aerosolized pentamidine). For 21 subjects on Peptide T for >16 weeks, mean CD4 counts were 247 cells/mm³ at baseline, 260 at 12 weeks (NS) and 238 at 16 weeks (off drug x 4 weeks); CD8 counts were significantly increased at week 12. Of 26 subjects on drug >8 weeks, all but 4 maintained (+/- 1kg) or gained weight. Of 26 subjects for whom there was p24 Ag data ≥ 12 weeks, 0/14 went from p24 negative to positive, 8 increased p24 titer and 4 had no change. The majority of subjects at 11 weeks reported decreased fatigue, decreased diarrhea, decreased depression, decreased memory loss, decreased malaise, and decreased night sweats; some symptoms recurred on placebo.

Conclusions: Intranasal Peptide T was well-tolerated and correlated with improvements in constitutional and neuropsychiatric symptoms without drug-specific toxicities, in CDC IV subjects. Further studies are warranted.

S.B.460 DOSE PROPORTIONALITY OF SUBCUTANEOUS AND INTRAVENOUS PHARMACOKINETICS OF RECOMBINANT SOLUBLE CD4 (sT4) IN HIV INFECTED PATIENTS.

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Objective. To characterize the pharmacokinetics (PK) and determine the subcutaneous (sc) bioavailability of sT4 in HIV infected patients.

Methods. In a crossover design, SK&F sT4 was administered to a total of 28 patients as a 2-hr iv infusion at doses of 0.1, 0.3, 1 or 3 mg/kg, and to a total of 11 patients as a sc injection at doses of 0.1 or 0.3 mg/kg. Blood samples were collected up to 48 hours post-dosing and plasma sT4 concentrations were determined by a gp120 (V1) domain specific Leu3A ELISA. Urinary sT4 recovery was monitored for the iv group up to 24 hours post infusion.

Results. Following iv administration, maximum plasma sT4 concentrations (Cmax) achieved at the end of two-hour infusion were dose proportional. Upon termination of the infusion, sT4 disappeared from plasma in a biphasic fashion with over 90% of the sT4 eliminated during the α-phase. PK parameters (mean ± SD) were similar for all dose groups.

Dose	n	Cmax(ug/ml)	Clp(ml/min/kg)	$t_{1/2}$-α(min)	$t_{1/2}$-β(min)	VDss(ml/kg)
0.1	8	0.75± 0.18	0.96± 0.22	47.9 ±10.5	541± 17	104± 33
0.3	11	2.43± 0.55	1.04± 0.21	35.9 ± 8.2	483± 20	78± 10
1.0	7	9.98± 1.52	0.86± 0.18	39.1 ± 3.7	399± 98	76± 14
3.0	2	17.18	1.19	34.1	562	136

Urinary sT4 was detected in one patient in the 1.0 mg and one patient in the 3.0 mg dose groups; the amount accounted for less than 0.05% of the total dose administered. Following sc administration, mean peak concentrations of 24.6±10.3 ng/ml (0.1mg/kg) and 83.4±0.25 ng/ml (0.3mg/kg) were observed between 3 to 5 hours post dosing. The mean bioavailabilities were 27% and 31% for the 0.1 and 0.3 mg/kg doses, respectively. The apparent terminal $t_{1/2}$'s were 15.6±5.4 and 14.4±1.4 hr,which were not different from the apparent absorption $t_{1/2}$'s estimated by non-compartmental methods.

Conclusion. Within the dose range studied, sT4 elimination and absorption PK appear to be linear. SC sT4 injection resulted in a sustained plasma level (due to slow absorption) but low bioavailability.

S.B.461 RENAL HANDLING OF SOLUBLE CD4 (ST4): A GAMMA SCINTIGRAPHIC AND AUTO-RADIOGRAPHIC EVALUATION

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Soluble CD4 (sT4) has been proposed as a potential candidate in AIDS therapy as it effectively blocks the interaction of HIV with its cell surface receptor on target lymphocytes. However, little is understood about the in vivo behavior of this molecule, particularly in reference to routes and mechanism of sT4 clearance from the circulation. To address this issue, dynamic gamma scintigraphic analysis of the routes and kinetics of clearance was conducted. [^{123}I] - sT4 was administered to male rats (N=4) at 0.4, 4.0 or 40.0 mg/kg by bolus i.v. injection and the radioactivity in liver, spleen, lung, kidney, bladder and heart determined every 10 seconds for 30 minutes by analysis of the scintigraphic images. At 0.4 and 4.0 mg/kg accumulation of radiolabel in both kidneys was observed within 2 minutes with minimal radiolabel in the bladder. Cumulative urinary radioactivity was TCA soluble, suggesting renal metabolism or dehalogenation of the radiolabeled molecule. At 40 mg/kg, rapid accumulation of label was observed in the kidneys and urinary bladder. The urinary material was >60% TCA precipitable, suggesting urinary elimination of intact sT4 at high doses. To further investigate the renal handling of sT4, the distribution of sT4 in the kidney was analyzed by light microscopic autoradiography. At 10 minutes post administration of 0.4 or 4.0 mg/kg [^{125}I] - sT4, grains can only be observed concentrated over epithelial cells in the P1 and P2 segments of the proximal tubule, whereas at 40 mg/kg concentration grain can also be observed in the lumen of both the distal tubule and collecting duct. Collectively, these data suggest that the kidney is a major organ of elimination for sT4 and that there is a saturable uptake pathway for sT4 in the proximal tubule epithelial cells that may explain absence of urinary sT4 at the lower doses.

S.B.462 CHANGES IN ANTIBODY STATUS AMONG HIV SEROPOSITIVE PATIENTS UNDERGOING INTERFERON THERAPY.

Dewar, Robin L., Sarmiento, M., Kennedy, P., Lane,H.C., Salzman, N., Georgetown University, Washington, D.C., N.I.H., Bethesda, MD.

Objective: To monitor differences in antibody synthesis and specificity in patients undergoing interferon therapy.
Methods: Ten patients who had been on interferon therapy for one year or longer were selected and divided into two groups; responders, and non-responders to therapy. Serum samples from each patient were examined by RIP, ELISA and WB.
Results: Using RIP, we could identify categories of patients that were not seen based on reactivity in WB. In one group, each serum precipitated all HIV proteins, including p24. These reactive people behaved in the same way at all the time points. A second group failed to precipitate p24, and also remained unchanged. One patient, who had a remarkable response to therapy, proved the exception, changing from p24 precipitation negative to strongly positive.Based on RIP, all sera that were p24 antigen positive did not have p24 antibodies, while sera that contained no detectable antigen might be either positive or negative for p24 antibodies.
Conclusions: Reconstruction experiments showed that sera that would normally precipitate p24 failed to do so in the presence of added p24, yet this p24 could not be detected. The absence of p24 antibody may be the result of immune complex formation, therefore RIP appears to be useful in evaluating the clinical status of patients, especially those who are p24 antigen negative.

S.B.463 A MULTICENTER OPEN-LABEL STUDY OF SUBCUTANEOUSLY ADMINISTERED RECOMBINANT INTERFERON BETA (rIFN-beta) IN PATIENTS AT RISK FOR PROGRESSION TO AIDS.

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*Division of Infectious Diseases, University of Texas Medical Branch, Galveston, Texas and **Section of Hematology-Oncology, ***Dept. of Med., Northwestern University Medical School.

Objective. Fifty two patients were enrolled in a phase II study to determine the safety and efficacy of daily rIFN-beta administered SC.
Methods. The study group consisted of HIV infected patients without a prior AIDS defining illness whose absolute CD4+ counts were repeatedly <400x10^6/L. Absolute CD4+ cell counts and serum HIV antigen concentrations were monitored at entry and at intervals thereafter as surrogate markers for efficacy.
Results. Of 9 patients who started at 180x10^6 units/day, only 1 tolerated the full dose for more than 8 weeks, 8/9 patients underwent dose reduction or discontinued therapy within 6 weeks. Twenty two patients started at 90x10^6 units/day, 8/22 patients continue at the full dose, 1 continues at a reduced dose, and 13 have stopped. Twenty one started at 45x10^6 units/day, 14/21 at the full dose, 2 at a reduced dose, and 5 have stopped. The most common reasons for dose reduction or discontinuation were the development of local dermal reactions at the injection sites (11.7%), or symptoms of fatigue and anorexia (19.6%). Linear regression analysis of quantitative HIV antigen serologic data demonstrated a statistically significant decline (p=0.047) in serum HIV antigen, with a 50% decrease in antigen at 34.5 weeks.
Conclusion. A statistically significant decline in serum HIV antigen concentration was observed in patients who received more than 28 weeks of therapy with rIFN-beta and suggests an anti-retroviral effect.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.464 PHARMACOKINETIC DISPOSITION OF GLQ223 IN PATIENTS WITH AIDS AND ARC FOLLOWING INTRAVENOUS ADMINISTRATION.

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*Division of Clinical Pharmacy, School of Pharmacy, University of California, San Francisco, California, USA and **Division of AIDS Activities, Department of Medicine, San Francisco General Hospital, San Francisco, California, USA, ***Genelabs, Inc., Foster City, California, USA

Objective. To describe the pharmacokinetic aspects of GLQ223 administered intravenously to patients with AIDS and ARC undergoing an escalating dose phase I clinical trial.
Methods. Eighteen patients each received a single intravenous dose of GLQ223 as a short-term infusion (2 to 4 minutes). The doses tested were 1, 8, 16, 24 and 36 µg/kg body weight. Six patients received the 24 µg/kg dose; at all other doses 3 patients were studied. After dosing serial plasma samples were collected over a 24 hour period. GLQ223 plasma levels were determined by means of a capture ELISA immunoassay. Compartmental pharmacokinetic analysis was accomplished by the SIPHAR computer program.
Results. Patients who received the lowest dose were excluded from the analysis since measured levels were attained for only 1.5 hours.
Concentration-time profiles were best fitted by a two compartment open model with zero order input. Mean pharmacokinetic parameters were:

	Clearance (L/hr)	T1/2 α (hr)	T1/2 β (hr)	Vss (L)	Vβ (L)	MRT (hr)
mean	9.2	0.3	3.2	12.8	40.1	1.5
sd	4.2	0.1	1.0	5.0	14.5	0.4

Conclusions. After IV administration GLQ223 undergoes rapid distribution followed by a slower elimination phase with a half life of approximately 3 hours. These observations will be helpful in defining the optimal dosage regimen of GLQ223 to treat AIDS.

S.B.465 A PHASE I STUDY OF GLQ223™ IN SUBJECTS WITH AIDS AND ARC

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Objective: To evaluate the safety and pharmacokinetics of GLQ223™, a plant protein derived from root tubers of Trichosanthes kirilowii in subjects with AIDS and ARC.
Methods: Phase 1 trial with dose escalation at a University-affiliated hospital AIDS clinic. 18 subjects were enrolled. GLQ223™ was administered by rapid intravenous infusion on day 1 at doses of 1, 8, 16, 24 and 36 µg/kg. All subjects were monitored for tolerance and toxicity. Immunologic and virologic values were followed.
Results: GLQ223™ administration was not associated with significant toxicity as determined by serum chemistry, hematologic or immunologic parameters. One subject experienced a significant neurologic toxicity, that resembled an acute disseminated encephalomyelitis. No consistent or sustained changes in CD4 lymphocyte populations or HIV antigen levels were observed. The volume of distribution of GLQ223™ is small and clearance remains constant over the dose range studied.
Conclusions: Subjects administered single doses of GLQ223™ at the levels used in this study had a variety of clinically important side effects and one life threatening neurologic toxicity. Peak serum concentrations of GLQ223™ were transiently comparable to concentrations shown to have in vitro anti-viral activity. GLQ223™ serum concentrations were not of sufficient duration to approach effective in vitro activity. No clinical efficacy was demonstrated in this single bolus dose study. GLQ223™ is not currently an alternative to approved anti-retroviral medications and greater understanding of the pharmacokinetic and pharmacodynamic properties of GLQ223™ are required.

S.B.466 TRICHOSANTHIN TREATMENT OF HIV DISEASE.

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Immunology Inc.* and Project Inform***, San Francisco USA, and U. Nottingham**, Nottingham, England.

OBJECTIVE: To determine the safety and efficacy of the ribosomal inhibitory protein trichosanthin, which inhibits HIV replication in lymphocytes and macrophages, in patients with HIV disease.
METHODS: Fifty one patients with advanced HIV disease were treated in a dose escalation study. Three injections were administered over 9 to 21 days, intramuscularly or intravenously. RESULTS: Significant decreases in serum P24 antigen levels were noted one month after the first infusion in 10 of 16 patients. One patient converted to negative. Of the patients who received all three infusions and entered the study with CD4+ cells greater than 100 cells/cmm, there was a significant increase in cell numbers, and a decrease in the erythrocyte sedimentation rate. Side effects included mild and reversible myalgias, hypoalbumenia, and delayed fevers. Six patients developed dementia 36-60 hours after infusion, and 2 progressed to coma, reversing within 12 hours coincident with administration of decadron. Mental status change was not related to dose, but to low CD4+ cells. Only 1/11 tested patients developed antibodies.
CONCLUSION: Trichosanthin should be further evaluated for efficacy in conjunction with anti-retroviral agents; and should be used cautiously in patients with low CD4+ cell levels.

S.B.467 COMPARISON OF RIBAVIRIN VERSUS PLACEBO FOR PREVENTING THE PROGRESSION OF HIV INFECTED SUBJECTS FROM CDC STAGE III TO STAGE IV.

Spanish Ribavirin Study Group.
Barcelona, Bilbao and Madrid, Spain.

Objective: To compare the efficacy of ribavirin versus placebo to prevent the progression of HIV-infected patients from CDC stage III to stage IV.
Methods: 134 HIV-infected patients (23% homosexuals, 65% drug addicts) on CDC stage III, and a CD4 cell count between 50 and 500 per mm3 were included in a double blind multicentric trial and randomly allocated to receive ribavirin (15 mg/kg) or placebo. The duration of the study was 12 months. The Student-t test, the chi-square test, life-table analysis and the Mantel-Cox test were used in the statistical analysis.
Results: The 67 patients given ribavirin (group A) and the 67 given placebo (group B) had had a similar age, sex, red, white and CD4 blood cell counts. 15 (22.4%) of the 67 patients of group A progressed to stage IV (9 to stage IV-C2, 1 to IV-A, 4 to IV-C1 and 1 to IV-D) versus 15 (24%) of the 67 patients of group B (7 to stage IV-C2, 2 to IV-A and 7 to IV-C1). The difference was not statistically significant pooling together all patients progressing to stage IV or performing a separate analysis for to so reaching the CDC stage IV-C1, although in this case the figures were somewhat favorable (8.9% versus 13.4%, P<0.05). Side effects were irrelevant in both study groups.
Conclusion: Ribavirin (15 mg/kg per day) during 12 months and placebo were well tolerated but the progression rate to stage IV was not statistically different. Larger studies with longer follow-up periods or even a different pattern of administration may be needed.

S.B.468 A PHASE ONE INCREASING DOSE TRIAL OF ORAL RIBAVIRIN (RBV) IN PATIENTS WITH AIDS AND ARC

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Object: A phase I dose tolerance study of RBV in pts with AIDS and ARC.
Methods: RBV was compared at 800mg, 1200mg, or 1600mg daily for 24 wks. in 3 treatment groups: 1, 2) AIDS or ARC pts with no prior antiviral therapy; 3) AIDS and ARC pts who were AZT intolerant. All pts. had a serum HIV Ag of ≥70 (p24--Abbott Lab). Pharmacokinetics, CD4+ cell numbers, Serum HIV Ag., OIs and toxicity were measured.
Results: 38 pts. enrolled and 8 pts. received 800mg of RBV, 23 on 1200mg and 7 on 1600mg daily. 13 patients extended treatment greater than 24 weeks. 5 deaths occurred off RBV and no deaths on RBV. Mean CD4+ cells decreased progressively on 1600mg but stabilized and increased at 20 to 24 wks. on 800 and 1200. Overall median serum HIV Ag did not change, however, at 20 wks on 800 and 1200mg values were decreased. Severe anemia occurred in 1 pt. OI's occurred rarely with 3 episodes of PCP in 205 patient months, but approximately 50% of patients also received PCP prophylaxis. 2 cases of MAI were noted, no CMV during study and 6 cases of KS occurred.
Conclusion: Oral RBV showed stable CD4+ cells at 20-24 wks on 800 and 1200mg and progressive decline on 1600mg. Median serum HIV ag decreased at 20 wks in 800 and 1200mg but not overall. No deaths occurred on drug, and few OIs on RBV. Long term therapy with RBV was safe and well-tolerated, minimally toxic and associated with stable CD4+ cells (800 and 1200mg daily) and a 50% decrease in median serum HIV ag at 20 wks on 800mg daily.

S.B.469 A PHASE II STUDY OF CARRISYN (C) (ACEMANNAN) ALONE AND WITH AZT AMONG SYMPTOMATIC AND ASYMPTOMATIC HIV PATIENTS (P).

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We prospectively enrolled 47 HIV P (23 asymptomatic P, 24 ARC P) in a double-blind randomized phase II study of C, in order to evaluate safety and tolerability, with or without concomitant Zidovudine (Z) therapy. C was administered during 24 weeks at a daily dose of 1000mg (2 capsules of 125mg, 4 times daily). The 23 asymptomatic P were blindly allocated to receive either C (11 P, group 1) or placebo (pl) (12 P, group 2), as where the 24 ARC P who all received Z 1g daily during all the period study (C: 12 P, group 3; pl: 12 P, group 4). Thirty-three out of 47 P (70%) completed the 24 weeks period study (respectively 6, 9, 9, and 9 in the 4 groups). Reasons for withdrawals were: clinical evolution (8 P) (3, 3, 0, 2), patient's own will (5 P) (2, 0, 2, 1), or death (1 P committed suicide in group 3). None of the P dropped from the protocol because of side effects or poor tolerance. There was a statistically significant difference in the incidence of adverse drug reactions, mainly nausea, between group 1+2 and 3+4, due to Z therapy. There was no difference between C (groups 1+3) and pl (groups 2+4). Haematological data were statistically comparable among 4 groups at study entry. At week 24 there were statistically significant differences for red blood cell count and mean corpuscular volume between P with or without Z but no difference between pl and C P. There was no liver or renal toxicity among the 4 groups.
We conclude that Carrisyn is a very well tolerated compound with no biological toxicity. Haematological toxicity of Zidovudine was not modified by adjunction of Carrisyn.

S.B.470 EFFECT OF DIFFERENT ORAL PREPARATIONS AND PRESENCE OF OTHER MEDICATIONS ON THE PHARMACOKINETICS OF 2′,3′-DIDEOXYINOSINE

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Objective. To determine the optimum mode of oral administration of 2′,3′-dideoxyinosine (ddI), and to investigate the interaction between ddI and certain other drugs commonly given to patients with HIV infection.
Methods. ddI was administered intravenously and as several oral formulations to patients with AIDS or ARC. Selected patients received ranitidine or ganciclovir (DHPG) to determine their effect on ddI pharmacokinetics.
Results. ddI given as a solution with oral antacids to fasting patients had a peak at 30 min and a bioavailability of 37±3% (mean±SEM). Bioavailability of citrate-buffered ddI tablets was low and erratic unless additional oral antacid was given, in which case it was 36±6%. The absorption of two enteric-coated ddI preparations was similar to that of the oral solution with antacid (26±5%, 36±5%); however the peak occurred around 3 hours and was much lower than that of the standard solution. The citrate buffered sachet being used in phase II clinical trials of ddI had a bioavailability of 29±6% in fasting patients, which decreased to 17±4% when administered with food. Concurrent treatment with DHPG did not produce any significant changes in ddI pharmacokinetics. In one patient tested, the gastric acid secretion inhibitor ranitidine (H_2-antagonist) enhanced absorption of ddI.
Conclusions. Several oral dosage forms of ddI are capable of producing therapeutic blood levels of the drug. Absorption can vary markedly, however, depending on the formulation used and on when the patient last ate. Such variations must be considered when comparing clinical effects obtained with various preparations.

S.B.471 TREATMENT OF HIV INFECTION WITH 2',3'-DIDEOXYINOSINE (DDI): LONG-TERM ACTIVITY PROFILE AND EFFECT ON HIV-INDUCED DEMENTIA

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Objective: We have reported that HIV-infected pts. have short-term improvement upon receiving ddI. We now examine the long-term activity and toxicity of ddI in pts. with AIDS or ARC, its effect on HIV-induced dementia, and the influence of prior AZT therapy.
Methods: 58 pts. were studied for up to 16 months (mos.) on ddI, including 37 who first entered the original NCI Phase I trial and 5 who first received ddA. Clinical, immunologic, and virologic parameters were followed. Neuropsychologic testing was performed on 5 pts.
Results: Decreases in serum HIV p24 Ag were observed in pts. receiving ddI, irrespective of prior therapy with AZT. However, increases in CD4 cells of >25/mm3 were most often observed in pts. who had previously received AZT for ≤4 mos ($p<0.05$). Such pts. had sustained immunologic improvement upon receiving 3.2 to 9.6 mg/kg/day ddI orally, divided into 2 or 3 doses/day; for example, CD4 cells rose from 201±26 cells/mm3 (mean±SEM) at entry to 279±44 ($p<0.05$) at 8 mo. in the 7 pts. receiving 6.4 - 9.6 mg/kg/day ddI for 8 months. Also, 3 of 4 such antigenemic pts. had ≥75% declines in p24 Ag after 8 mos. on ddI. Each of 4 pts. with HIV-induced cognitive impairment had improved memory and attention on ddI, and a 5th pt. with HIV dementia had improvement on the Mattis Dementia Rating Scale from -4.83 SD to -1.64 SD. Painful neuropathy, pancreatitis, and hepatitis were limiting toxicities at 12.8 mg/kg/day or higher; however only 2 of 35 pts. receiving 3.2 - 9.6 mg/kg/day for 1 -16 mos. (median 9 mos) developed these complications.
Conclusions: 3.2 to 9.6 mg/kg/day of ddI orally is well tolerated for 16 months and such doses can induce sustained clinical, immunologic and virologic improvements. In addition, ddI, which penetrates the CSF, can induce improvement in HIV-associated dementia.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.472 Pharmacokinetics of Videx[R] (2',3'-dideoxyinosine, ddI) After Twice Daily IV or PO Administration to Patients with AIDS or ARC,

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Objective: To investigate the pharmacokinetics (PK) of ddI after both intravenous (IV) and oral (PO) administration during a Phase I trial in patients with AIDS or ARC.
Methods: This was an open, escalating dose study of parallel design. Patients received ddI for 2 weeks as an IV infusion q12h followed by 4 weeks of oral treatment at twice the IV dose. IV doses ranged from 0.4-16.5 mg/kg; PO doses from 0.8-33 mg/kg. ddI pharmacokinetics were evaluated after the first dose and at steady-state for both routes. Serial blood samples and the total urinary output were analyzed using validated methods to quantitate ddI. PK parameters were calculated using noncompartmental methods. Single dose PK parameters were compared with steady-state values using repeated measures ANOVA.
Results: Pharmacokinetics were evaluated at 8 different dose levels in 29 patients. ddI exhibits linear kinetics over the IV dose range of 0.4-16.5 mg/kg and over the PO dose range of 0.8-10.2 mg/kg. The mean values for elimination half-life, total body clearance and volume of distribution are about 1.3 hr, 11.1 ml/(min.kg) and 0.72L/kg, respectively. Absolute bioavailability of ddI is approximately 43%. ddI is actively secreted by the renal tubules. There does not appear to be any accumulation of ddI using a q12h dosing regimen.
Conclusion: ddI demonstrates linear PK behavior across the therapeutic IV and PO dose range. Approximately 43% of the dose is orally bioavailable. PK parameters do not appear to vary with repeated administration.

S.B.473 A PHASE I STUDY OF 2'-3'-DIDEOXYINOSINE (ddI) ADMINISTERED ORALLY TWICE DAILY TO PATIENTS WITH AIDS OR ARC AND HEMATOLOGIC INTOLERANCE TO AZIDOTHYMIDINE (AZT).

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Objective: To determine the safety and initial antiviral effects of ddI in patients with AIDS or ARC and hematologic intolerance to AZT.
Methods: A single center Phase 1 study enrolled 30 adults with AIDS or ARC, CD4 < 200/mm^3 and prior anemia or neutropenia on < 1200 mg/day of AZT. ddI was dosed orally at 375 or 750 mg twice daily for 12 weeks. Patients completing study (27) received maintenance therapy at the lower dose.
Results: Hematologic intolerance resulted in 2 dose reductions (1 for anemia, 1 for neutropenia) and 1 patient was removed from study for neutropenia. Hgb decreased by ≥ 2 gm/dl in 1 patient; 1 was transfused. Neutrophils < 750/mm^3 were noted in 5 patients, transiently in 3 of these. Five had peripheral neuropathy; 1 pancreatitis. Complaints attributed to ddI included: insomnia(9), nausea(7); loose stools(7); pruritic rash(4); headache(3); myalgias(2). Additional events on 2-19 weeks maintenance: pancreatitis(2); asymptomatic hyperamylasemia(3); hypocalcemia (3; 1 associated with clinical pancreatitis). Mean CD4 count at entry was 48 ± 54. Five patients had a sustained ≥ 50% increase; 3 had a ≥ 50% decrease in CD4 counts. Serum p24 antigens for the first 28 patients showed 17 positive at entry; 8/17 had a sustained ≥ 50% decrease.
Conclusion: In this population ddI was relatively well tolerated hematologically over 12 weeks. At these doses significant toxicity was noted including peripheral neuropathy, pancreatitis, and possible drug related hypocalcemia. Further study is warranted to determine long term tolerance and dose related efficacy and toxicity profiles.

S.B.474 TREATMENT WITH 2',3'-DIDEOXYINOSINE (ddI) GIVEN TWICE DAILY TO PATIENTS WITH CYTOMEGALOVIRUS (CMV) RETINITIS RECEIVING MAINTENANCE DHPG (GANCICLOVIR).

Liebman, Howard A.*; Kunches, LM*, Saunders, CA*; Kelley, SL*; McCaffrey, RP*; Cooley, TP*. *Boston University School of Medicine, Boston, MA, USA, **Bristol-Myers/Squibb Company, Wallingford, CT, USA.

Objectives. To establish safety, pharmacokinetics (PK) and interactions of ddI and DHPG given concomitantly to patients with CMV retinitis.
Methods. Patients with stable CMV retinitis were maintained on DHPG at a dose of 6 mg/kg/d, 5 days per week. Oral ddI, 375 mg twice daily, was started in the absence of DHPG therapy on day 6 of study. Serum and urine DHPG PK were performed on days 5 and 19 of study. DdI PK were performed on days 8 and 19. Serial CD4 lymphocytes and p24 antigen were studied.
Results. To date, 5 patients have been studied, with a mean treatment duration of 5 weeks (range 2-7 weeks). All patients had prior treatment with AZT; AZT was discontinued in 4 due to neutropenia. DdI has been well-tolerated in all patients without toxicity, including myelosuppression. There has been no significant change in CD4 lymphocyte counts or p24 antigen levels. Three patients have developed major opportunistic infections within 6 weeks of study entry; 2 with PCP, 1 with MAI. One patient was removed from study after 3 weeks due to progressive CMV retinitis. PK data will be presented.
Conclusion. Preliminary results in limited follow-up show that ddI given concomitantly with DHPG is well-tolerated without toxicity. Patient accrual continues at the time of this report.

S.B.475 HIV PROVIRAL DNA IN PERIPHERAL BLOOD MONONUCLEAR CELLS (PBM) IN PATIENTS ON LONG TERM THERAPY WITH DIDEOXYINOSINE (DDI), AS ASSESSED BY QUANTITATIVE POLYMERASE CHAIN REACTION (PCR)

Aoki, Shizuko; Yarchoan, R; Pluda, JM; Thomas, RV; Marczyk, K; Broder, S; Mitsuya, H. Clinical Oncology Program, National Cancer Institute, Bethesda, MD, USA.

Objective: HIV proviral DNA content in PBM from patients (pts) with AIDS or ARC receiving ddI for up to 56 weeks was quantitated by PCR and the profiles of viral load were assessed.
Methods: 12 pts receiving ddI (6.4 to 38.4 mg/kg/day) were studied. PBM were obtained before and during treatment and separated to T cells and B cells/monocytes when applicable. *gag & env* primer pairs were used for amplification, and PCR products visualized by hybridization with ^{32}P labeled probes. Optical density of PCR-product-specific bands on X-ray films was compared to a standard curve of ACH-2 cells and the number of proviral copies in pts' cell lysates were determined.
Results: In all 7 pts tested, T cells consisted the majority (90.1±7.0 %) of proviral DNA in PBM as compared to B cells/monocytes at 33 or 54 weeks after entry ($p<0.05$) and this was consistent with the previous observation in untreated pts. During treatment with ddI for 8 to 14 weeks, there was a significant decrease in proviral DNA in 9 out of 12 pts ($p<0.02$) without concomitant decrease in CD4+ T cells. Six of 12 pts had no or less than 4 weeks of interruption of treatment during the study and 3 of these 6 pts showed a decrease at week 29 to 56 . Of 6 patients with more than 4 weeks of interruption, 4 (ddI dose 9.6 to 38.4 mg/kg/day) still showed the substantial decrease in proviral DNA in PBM at week 33 to 50.
Conclusion: T cells harbored the most of proviral DNA in PBM before and after ddI therapy. Our data suggest that reduction of viral DNA in PBM as assessed by quantitative PCR is related to ddI treatment.

S.B.476 THERAPY OF AIDS AND ARC WITH 2', 3' DIDEOXYINOSINE (ddI) GIVEN ONCE DAILY. RESULTS OF LONGTERM FOLLOW-UP.

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Objective. To report longterm follow-up in a cohort of patients (pts) given ddI once daily in a Phase I study. Methods. Thirty-six pts with AIDS (18) or ARC (18) were treated; 18 had prior AZT. Pts received iv ddI once daily for 14 days at following doses: 0.8 (1), 2 (5), 3.5 (9), 6 (10), 10.2 (10) and 15.2 (6) mg/kg/d. Oral ddI was then taken at twice the iv dose. Serial T4 lymphocytes (T4L) and p24 antigen (ag) were studied. Results. Median follow-up was 27 weeks (range 17-68); 24 pts remain on study. Maximum tolerated dose (MTD) was found at 12 mg/kg/d with following: grade 3 (2) or 4 (1) pancreatitis, grade 3 peripheral neuropathy (1) at 30.4 mg/kg/d; grade 3 pancreatitis (3), grade 3 hepatitis (1) at 20.4 mg/kg/d. Other dose-limiting toxicity: grade 3 cutaneous (1), grade 3 neuropathy (1). DdI was discontinued in 1 pt with HIV cardiomyopathy with EKG changes. After 2 weeks of iv ddI, T4L rose >50/mm3 and >50% in 19/34 pts. T4L increases were sustained in 11/17 pts taking ddI >6 weeks. Serum p24 ag decreased by >50% in 17/19 pts after iv ddI and remains suppressed in 10 pts on ddI >12 weeks. No pt taking ddI >6 weeks developed a major OI. Peripheral neuropathy resolved in 8/11 pts. Increases in lymphocytes and hemoglobin concentrations were seen after 12 weeks ($p<0.01$). Conclusion. DdI given once daily is well-tolerated in longterm follow-up. MTD was found at 12 mg/kg/d. Data show efficacy with increase in T4L, decrease in serum p24 ag and improved hematologic profile.

S.B.477 SENSITIVE RADIOIMMUNOASSAY FOR DIDEOXYINOSINE (ddI)

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Objective: Dideoxyinosine (ddI) is a nucleoside with anti-HIV activity currently under study in a number of clinical trials. The goal of these studies was to develop a sensitive radioimmunoassay (RIA) suitable for use in pharmacokinetic studies and clinical trials because the high-performance liquid chromatography assay currently available has a limited sensitivity.
Methods: Rabbits were immunized with a ddI-bovine serum albumin conjugate with complete Freund's adjuvant and boosted monthly for 6 months using antigen with incomplete Freund's adjuvant. Serum from immunized rabbits was examined for antibody to ddI using an RIA based on ^{3}H-ddI and goat anti-rabbit globulin.
Results: The RIA developed using serum from these immunized rabbits detects ddI concentrations as low as 0.3 ng per ml. Cross-reactivities with other nucleosides and purines are also low: dideoxyadenosine (0.54%), hypoxanthine (0.002%), uric acid (< 0.005%), inosine (0.0001%) and adenosine (0.0001%).
Conclusion: These results suggest that the RIA for ddI will be a useful analytical tool in current and future trials of ddI.
Support: These studies were supported in part by grant AI 25903 to the Washington University ACTU from the National Institute of Allergy and Infectious Diseases.

S.B.478 PHASE I STUDY OF THE SAFETY AND PHARMACOKINETICS OF RECOMBINANT HUMAN CD4 IMMUNOGLOBULIN (rCD4-IgG) ADMINISTERED BY INTRAMUSCULAR (IM) INJECTION IN PATIENTS WITH AIDS AND ARC.

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Objective: To determine the safety, maximal tolerated dose, and pharmacokinetics of rCD4-IgG in patients with AIDS and ARC and <500 CD4 cells.
Methods: Phase I study in 2 centers with dose escalation by group in 16 patients with AIDS or ARC. rCD4-IgG was administered by IM injection once weekly for 12 weeks to 4 patients at each dose level of 30, 100, 300, and 1000 ug/kg. Patients were then continued on maintenance therapy.
Results: No significant adverse effects were noted in clinical, hematologic or serum chemistry parameters. Thus far no patient has developed detectable antibodies against rCD4-IgG. For those patients in whom data is complete, the mean CD4 count was 164 ± 136 at entry and 132 ± 120 at week 12. Preliminary pharmacokinetic data indicate a peak serum concentration of 164 to 365 ng/ml following 300 ug/kg IM injection of rCD4-IgG with a serum half-life of approximately 32 hours and bioavailability of 18-46%. Evaluation of p24 antigen and cell-free plasma culture data is not complete at this time.
Conclusion: IM administration of rCD4-IgG was well tolerated over the course of this study. Initial pharmacokinetic analysis indicates achievement of levels well within the range exhibiting antiviral activity in vitro. The relatively low bioavailability and data from other sites using intravenous rCD4-IgG would seem to indicate no advantage for IM administration in terms of serum half-life. Compared to rCD4, the half-life of rCD4-IgG is significantly longer which makes less frequent dosing possible.

S.B.479 PHASE I STUDY OF rCD4-IgG ADMINISTERED BY CONTINUOUS INTRAVENOUS (IV) INFUSION TO PATIENTS WITH AIDS OR ARC

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Objective: rCD4-IgG can block HIV infection of T cells and macrophages *in vitro* at concentrations of 100 - 500 ng/ml or higher. We studied the pharmacokinetics, toxicity, and anti-HIV activity of rCD4-IgG in patients with AIDS or AIDS-related complex (ARC).
Methods: 9 pts. with AIDS or ARC and <500 CD4 cells/mm^3 were studied. Three pts. each received 30, 100, or 300 µg/kg/day rCD4-IgG by continuous IV infusion for 2 wks, and then 2 intramuscular (IM) injections per wk (at the same daily dose) for up to 5 months. Pts. were carefully observed, and immunologic and virologic parameters monitored.
Results: Mean serum rCD4-IgG levels during the continuous infusion were: 374 ng/ml, 1588 ng/ml, and 3473 ng/ml in pts. receiving 30, 100, and 300 µg/kg/day of rCD4-IgG respectively. Trough concentrations during maintenance therapy (3 to 4 days after an IM injection) were approximately 29 ng/ml, 93 ng/ml, and 413 ng/ml respectively for the same pt. groups. No pts developed any adverse effects that appeared to be related to rCD4-IgG therapy. There were no consistent changes in CD4 cells or HIV p24 antigen in pts. receiving 30 or 100 µg/kg/day. At 300 µg/kg/day, no pts had changes in CD4 cells. However, 1 of the 2 pts. with detectable HIV p24 Ag at entry had a decrease in p24 Ag from 2444 pg/ml at entry to 1297 pg/ml after IV therapy; this later rose to 2460 on 2x/wk IM rCD4-IgG therapy (which yielded lower levels of rCD4-IgG).
Conclusions: rCD4-IgG is well tolerated when given intravenously at doses which yield levels of up to >3000 ng/ml. Substantially higher levels are attained with rCD4-IgG than with equivalent doses of rCD4. Studies of additional pts. at higher doses are planned.

S.B.480 SAFETY AND PHARMACOKINETICS OF INTRAVENOUS RECOMBINANT CD4 IMMUNOADHESIN (RCD4-IGG) (AIDS Clinical Trials Group Protocol 121)

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Objectives: To evaluate the safety, pharmacokinetics, and in vitro antiviral activity of rCD4-IgG.
Methods: Dose-escalating Phase I study of 30, 100, or 300 ug/kg of rCD4-IgG given weekly by intravenous bolus for up to 12 weeks.
Results: Twelve homosexual men (mean age 43, mean CD4 count 89±120/mm^3) with AIDS (N=7) or ARC (N=5) have entered to date. rCD4-IgG was well tolerated with no observable clinical, hematologic or blood chemistry toxicity. The maximum serum concentrations at 30, 100 and 300 ug/kg were 426, 996, and 2880 ng/ml. The volumes of distribution for rCD4-IgG were (central compartment) 85.2±12.8 ml/kg and (steady state) 125.8±32.2 ml/kg. Clearance was 3.7±0.9 ml/hr/kg, 15 times slower than for soluble rCD4. In a multi-compartmental model, the terminal elimination half-lives ranged from 18-51 hours (median 33 hours). To date, CD4, CD8 and total lymphocyte counts have remained stable over the course of the study. None of the first 6 subjects have developed CD4 antibodies. Nine of 9 subjects tested had HIV (p24) antigenemia; median levels were 120 pg/ml at entry and 94 pg/ml at week 4. Among the first 6 subjects, HIV plasma viremia was detected in all at entry. In 2 subjects whose undiluted plasma cultures at day 14 or 21 were negative, cultures diluted to 10^{-1} were positive, suggesting that the inhibition of plasma viremia was reversible.
Conclusions: Intravenous rCD4-IgG therapy is well tolerated and has a much more favorable pharmacokinetic profile than soluble rCD4. These data suggest that higher and more frequent dosing regimens will be able to provide sustained blood levels of ≥5 ug/ml. Additional study of the long-term safety of current and higher dosage regimens and antiviral efficacy of rCD4-IgG is warranted and underway.

S.B.481 A PHASE I TRIAL OF RECOMBINANT HUMAN CD4-IMMUNOGLOBULIN (rCD4-IgG) IN HIV-1 INFECTION.

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Objective: to determine safety, pharmacokinetics, and preliminary efficacy of recombinant human CD4-immunoglobulin (rCD4-IgG) given by subcutaneous (sc) injection in the treatment of HIV infection.
Methods: A phase I trial is being conducted in HIV-infected patients having 200-500 CD4+ cells/mm3 who are assigned to receive rCD4-IgG by sc self-administration at the following doses: 100, 300, or 1000 µg/kg. Four patients at each dose level are assigned to receive sc rCD4-IgG alone, whereas 4 others receive sc rCD4-IgG plus oral zidovudine 500 mg per day. Patients receive a single injection of rCD4-IgG followed by a 2 week wash-out period, then begin 12 weeks of rCD4-IgG self-administered 3x/week.
Results: Of 7 patients receiving drug thus far, no apparent side-effects have been observed with sc administration of rCD4-IgG apart from local injection site discomfort in 1 patient. First-dose pharmacokinetics from the first 3 patients receiving 100 µg/kg rCD4-IgG alone have shown the following: apparent volume of distribution = 15.2-26.5 liters; apparent clearance = 0.31-0.43 liters/hour; serum $t_{1/2}$ = 34.0-45.7 hours; maximal serum concentration = 193 ng/ml; and average serum concentration = 109-119 ng/ml. Serum levels of rCD4-IgG were still detectable 7 days after administration in all 3 patients.
Conclusions: Thus far, sc injection appears to be a safe, effective, and practical route of administering rCD4-IgG. Pharmacokinetic analysis of rCD4-IgG by this route supports the predicted long $t_{1/2}$ of this agent in humans.

S.B.482 PHASE I TRIAL OF 3'-AZIDO-2',3'-DIDEOXYURIDE (AZDU) IN PATIENTS WITH SYMPTOMATIC HIV INFECTION

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Objective: To determine the pharmacokinetics, safety, immunologic and antiviral activity of AzdU.
Methods: A phase IB dose escalation, maximum tolerated dose study of AzdU was conducted in symptomatic HIV seropositive patients with CD4 cell number < 400 /µL. Patients have received doses ranging from 3 mg/kg/d to 7.0 mg/kg bid for up to 12 weeks.
Results: To date 17 patients have been enrolled at doses up to 7.0 mg/kg/bid. The maximum tolerated dose has not been achieved. AzdU has been well tolerated with mild headache the only major subjective side effect. To date, no patient has developed anemia but one patient has developed a grade 3 neutropenia which resolved with a 50% dose decrease. Significant increases (P <0.05, paired t-test, * below) in CD4 cell number and reductions in serum HIV p24 antigen (3/5 patients) were seen. Weight gain and reversion of skin test anergy have been seen in some patients.

Variable	Baseline	1	2	3	4	5	9	13
CD4	185	239*	203	165	164	181	116	202

Conclusions: AzdU appears to be a well tolerated agent with promising antiretroviral and immunorestorative activity in patients with symptomatic HIV infection.

S.B.483 A DOSE ESCALATION STUDY TO EVALUATE THE SAFETY, ANTI-VIRAL AND IMMUNOLOGICAL EFFECTS OF 3'-AZIDO-2',3'-DIDEOXYURIDINE (AZDU) IN PATIENTS WITH HIV-1 INFECTION

Polis, Michael*; Davey, R*; Lee, D*; Falloon, J*; Kovacs, J*; Metcalf, J*; Amantea, M*; Zurlo, J*; Zunich, K*; Rosenthal, Y*; Wallenberg, J**; Desai, A**; Lane, H*; Masur, H*.
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Objective: To evaluate the pharmacokinetics, safety, anti-viral, and immunological effects of AzdU, a nucleoside analog with minimal toxicity in pre-clinical studies, and to define a maximally tolerated dose in a dose escalation study.
Methods: Eligibility criteria for a 12 week dose escalation trial of AzdU include: HIV-infected patients with CD4 counts between 200 and 400, no anti-retroviral, immuno-modulating, or chemotherapeutic agents within the previous 6 weeks, no history of an opportunistic infection, hemoglobin > 12 gm/dl, platelet count > 125,000/mm^3, and granulocyte count >1500/mm^3. Planned test doses range from 0.3 to 12.0 mg/kg po q6h. Extended therapy is available for patients who have no undue toxicity.
Results: Thus far, 13 of 21 scheduled subjects have been entered. Doses up to 6.7 mg/kg q6h have been studied to date. At baseline, 5 patients had detectable p24 antigen. Four patients have completed 12 weeks at low doses, 3 patients at least 8 weeks at 3 mg/kg q6h and 2 patients 4 weeks at 4.5 mg/kg q6h. No hematologic, renal, neurologic, dermatologic or gastrointestinal toxicity has been attributed to AzdU. Two patients had Grade I elevations in transaminases that reversed without dose modification. No significant changes in immunologic or virologic parameters, including p24 antigen, CD4 counts or percents, or NK cell activity have been seen. No patient has withdrawn from the study prematurely.
Conclusions: AzdU appears to be a well tolerated nucleoside analog agent at doses up to 18 mg/kg/d. Studies for longer terms and at higher doses of AzdU need to be tested.

Immunomodulators and Cytokines

S.B.484

EFFECTS OF THYMOPENTIN ON DISEASE PROGRESSION AND SURROGATE MARKERS IN HIV INFECTION - A 1 YEAR STUDY

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Objective: To assess the effect of thymopentin treatment on control of disease progression and laboratory markers in asymptomatic and mildly symptomatic HIV infected patients.
Methods: HIV infected patients were stratified into asymptomatic or symptomatic groups and randomly assigned to receive either 50 mg thymopentin (n=23) or placebo (n=22), double blind, 3 times per week for 52 weeks.
Results: Four clinical events occurred in the study, 3 in the placebo group (1 to AIDS and 2 to constitutional symptoms) and 1 in the thymopentin group (1 to AIDS). Too few patients were enrolled to detect significant differences in disease progression. However, consistent with findings in a larger study population treated for only 24 weeks, thymopentin had a significant impact on $CD4^+$ cells and % $CD4^+$ cells, maintaining these at or above entry values, whereas these parameters decreased in the placebo group (p=0.03 and 0.05, respectively, repeated measures ANOVA). Differences between groups were also seen for beta-2 microglobulin (decreased by thymopentin) and p24 antigenemia (maintained by thymopentin).
Conclusions: These results demonstrate that thymopentin maintains $CD4^+$ cells and improves laboratory markers of HIV infection for up to 1 year.

S.B.485

TWENTY-FOUR WEEK DOUBLE BLIND EVALUATION OF THYMOPENTIN TREATMENT ON DISEASE PROGRESSION IN HIV INFECTED PATIENTS.

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Objective: To assess the efficacy of thymopentin in controlling disease progression and surrogate marker changes in HIV infected patients.
Methods: Ninety-one (91) patients were stratified according to the presence or absence of HIV related symptoms and were randomly assigned to receive 50 mg thymopentin (47) or placebo (44), 3 times per week, s.c. for 24 weeks.
Results: Four placebo treated patients (10.1% Kaplan-Meier estimate) progressed to either constitutional symptoms (2) or AIDS (2) while no thymopentin treated patients progressed (p=0.03, two tailed Log Rank test). Consistent with the arrest of clinical progression by thymopentin, $CD4^+$ cell counts, %CD4 and CD4/CD8 ratio were maintained in asymptomatic patients treated with thymopentin while these declined in the placebo group (p=0.06, p=0.02, p=0.002) respectively. The percent p24 antigenemic patients, similar at entry for the thymopentin (17%) and placebo (19%) groups, was unchanged in the thymopentin but had risen to 36% in the placebo group at 24 weeks. Treatment related changes in beta-2 microglobulin levels were also observed at 24 weeks, with 25% of thymopentin treated patients changing from abnormal to normal versus only 3% of the placebo patients. No untoward effects attributable to thymopentin were observed.
Conclusion: These promising results suggest that immunomodulation with thymopentin alone can benefit patients at early stages of HIV infection.

S.B.486

INTENTION TO TREAT ANALYSIS DEMONSTRATES THAT IMREG®-1 DELAYS THE PROGRESSION TO AIDS IN ARC PATIENTS IN A 6-MONTH TRIAL

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Objective: To evaluate the clinical efficacy of immunosupportive therapy with the leukocyte-derived biologic IMREG®-1 in reducing the progression from ARC to AIDS in a 6-month trial.
Methods: 147 ARC patients at 8 centers were randomized into a double-blind trial to receive treatment with either IMREG®-1 or a placebo control in a 2:1 allocation ratio. Four patients were excluded due to pre-randomization ineligibility. The remaining 143 patients were followed for their probability of experiencing an AIDS-defining or -related event in 6 months, regardless of protocol compliance (intention to treat analysis).
Kaplan-Meier product-limit analysis and Cox proportional hazards regression model using forward stepwise selection of relevant covariates (to account for confounder effects) were used to calculate event probabilities.
Results: 12 of the 48 ARC patients in the control group and 5 of the 95 ARC patients randomized to treatment with IMREG®-1 experienced AIDS-defining or -related events over a 6-month period. Kaplan-Meier probabilities were 26% for the control and 6% for the IMREG®-1 treated populations (p=0.0005). Cox regression, which eliminates any covariate effects, demonstrates a relative risk (RR) of 5.05 [95% confidence interval (CI): 1.74 - 14.63, p=0.001] for patients not receiving treatment with IMREG®-1. For only AIDS-defining events, 10 placebo (21%) and 4 IMREG®-1 (5%) patients experienced events (p=0.0013). Cox RR was 6.17 (95% CI: 1.84 - 20.64, p=0.001).
Conclusion: Intention to treat analysis supports the clinical use of IMREG®-1 to slow the progression to AIDS in patients with AIDS-related complex and confirms initial analysis of these data.

S.B.487

RESULTS OF A PHASE I/II PLACEBO-CONTROLLED DOSE FINDING PILOT STUDY OF LENTINAN IN PATIENTS WITH HIV INFECTION

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Objective: To determine the tolerance and side effects of Lentinan in HIV infected immuncompromised patients while also evaluating the agent for potential immunorestorative and anti-retroviral effects.
Methods: Lentinan (MW 500,000 daltons) is a purified polysaccharide of a beta glucan extract from the edible mushroom Lentinus edodes. Lentinan has been used as an antitumor agent in Japan and has been demonstrated to have immune potentiating activity by stimulating the T-cell mediated cytotoxic immune response and also effecting non-specific macrophage mediated responses. In this phase I/II pilot dose finding study, 40 HIV infected patients with 200-500/mm3 CD4 lymphocytes were randomized to receive one of four doses (0,2,5 or 10 mg) of weekly intravenous lentinan for eight weeks. Patients were closely monitored with frequent immune evaluations. After 8 wks on study and a 4 wk washout., pts who tolerated lentinan and whose immune parameters demonstrated a positive trend were offered weekly maintenance injections until the study was completed and unblinded.
Results: Thirty-nine of the target 40 patients have been enrolled to date with the trial remaining blinded . Six adverse experiences have occurred including acute lumbar pain in 2 pts; anaphylaxis, rigors, vasovagal response and exacerbation of granulocytopenia, in 1 each. Of 30 pts completing 12 weeks of blinded study, 9 were offered maintenance on the basis of a positive trend of increased CD4 lymphocytes. The mean increase was from 291 mm3 at baseline to 405 mm3 at week 8 (range of 50-260 mm3 increase in CD4 cells) in these pts. No positive immune trends were noted in the remaining 21 pts.
Conclusion: Thirty percent of the subjects in this as yet blinded placebo-controlled dose finding pilot study of lentinan have demonstrated a trend towards increased CD4 lymphocytes. The trial will be completed and unblinded by March 1990.

S.B.488 PHASE I STUDY OF DEHYDROEPIANDROSTERONE (EL-10) THERAPY IN SYMPTOMATIC HIV DISEASE

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Objective: To study the safety and pharmacokinetics of three doses of oral DHEA administered for 16 weeks to patients with early grade IV HIV disease. In vitro studies have suggested that DHEA may have a beneficial immunomodulatory effect in viral infection.
Methods: Patients (pts) with symptomatic HIV disease and CD4+ lymphocyte counts of 250-600 cells/uL were enrolled and treated (rx'd) with escalating doses of DHEA from 750-1500 mg/d for at least 8 weeks. Patients were evaluated biweekly for adverse clinical and laboratory effects. Hormonal, virologic, and immunologic studies were obtained at baseline and week 8.
Results: 13 pts were rx'd and tolerated DHEA with no serious toxicity noted. Five pts rx'd with >750 mg/d had CD4+ cells increase from a mean 373/uL pre-rx to 463/uL after 8 wks of DHEA rx (p=.44, Wilcoxon signed-rank test), while 8 pts rx'd with 750 mg/d had CD4+ cells decrease from a mean 415/uL pre-rx to 331/uL after 8 wks (p=.05). At least 2 of 3 lymphocyte function studies (PHA mitogen stimulation, mixed lymphocyte culture, and CMV antigen stimulation) were improved at 8 wks compared to pre-rx values in 3/5 pts rx'd with > 750 mg/d vs. 0/8 pts rx'd with 750 mg/d (p=.035, Fisher exact test).
Conclusion: Pts with symptomatic HIV disease tolerated oral DHEA without serious toxicity and appeared to have improved immune function in a dose-dependent fashion after 8 weeks of rx.

S.B.489 A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF DIETHYLDITHIOCARBAMATE (Ditiocarb, Imuthiol®) IN PATIENTS WITH ARC AND AIDS.

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Objective: To determine the effects of Ditiocarb (DTC) therapy on the course of disease in patients with ARC and AIDS.
Methods: Patients with ARC or AIDS were stratified by ARC or AIDS status, CD4 + cell count and Ziduvodine therapy at entry and were randomly allocated to receive weekly DTC, 400 mg/M^2 orally or placebo for 24 weeks. Patients were followed with standard parameters and progression events were recorded. Data was evaluated by an intent to treat analysis.
Results: There were 191 DTC and 196 placebo patients. Clinical and laboratory parameters were not significantly different at entry. The following results were noted: new opportunistic infections (OI): DTC:10, placebo:25, recurrent OI: DTC:4, placebo:6; other events (fall in CD4 + cells < 200/mm^3 or other infections) DTC:3, placebo:11; total events: DTC:17, placebo:42. The relative risk (RR) and p values for total events were: all patients: RR 0.42, p=.002; AIDS patients: RR 0.37, p=.034; ARC patients: RR 0.50, p=.038. There were 8 deaths in each group. There were no significant changes in CD4 + cells or delayed hypersensitivity in either group during the 24 weeks.
Conclusion: DTC is active in reducing OIs and other events relating to progression in ARC and AIDS. Supported by a grant from Merieux Institute.

S.B.490 IMPROVEMENT IN T4 LEVEL AND DECREASE IN OPPORTUNISTIC INFECTIONS AND LYMPHOMAS (OI/L) IN ARC/PRE-ARC PATIENTS (T4= 60-300) RECEIVING AMPLIGEN COMPARED TO PLACEBO

Strayer, David R.*, Brodsky, I.*, Pequignot, E.*, Miller, S.M.**, Schulof, R.S.***, Simon, G.L.***, Suhadolnik, R.****, Reichenbach, N.****, Strauss, K.*, Gillespie, D.H.*, and Carter, W.A.*. *Hahnemann Univ., Phila., PA; **Baylor Col. Med., Houston, TX; ***George Wash. Univ., Wash., DC.; ****Temple Univ., Phila., PA USA. 20 ARC/pre-ARC patients (pts) (mean T4 = 196/µl) received 100-200 mg Ampligen (Amp) formulated in glass bottles IV twice weekly for 4.5-36 mos. One of the 20 pts developed an OI after 16 mos. The frequency of OI/L was compared to a similar cohort of ARC/pre-ARC pts (mean T4 = 198) who received placebo (pla) in a multicenter study of Amp (AMP101). Amp increased time to OI/L (p<.05, Wilcoxon, one-sided) compared to pla (18/158, mean time to OI/L = 83 days). There was no significant differences in baseline mean T4, % p24 + (Amp = 50%, pla = 48%) or the % of pts with ARC symptoms (Amp = 60%, pla = 61%). Amp decreased p24 (p<.05) and increased T4 cell number (p<.05) compared to pla. In contrast similar ARC/-pre-ARC pts receiving Amp formulated in plastic IV bags (now recognized as Amp-like material or Alm) developed OI/L at a rate no different than pla. Physicochemical studies showed that the plastic bag formulation (Alm) yielded a drug with a higher sedimentation value (indicative of partial denaturation, p<.05), shorter RNase resistant cores (lower double helicity needed to activate anti-viral pathways, p<.002) and reduced ability to activate 2'-5' oligoadenylate synthetase (p<.001). These studies suggest that the similar progression rates to OI/L in the pla and Alm arms in the AMP101 study was related to structural changes in Amp upon exposure to plastic bags. Clinical, immunological/ virological effects and safety of Amp formulated in glass bottles continue to suggest Amp is active and safe in ARC/pre-ARC.

S.B.491 A PHASE I STUDY OF AUTOLOGOUS, ACTIVATED CD8(+) LYMPHOCYTES EXPANDED IN VITRO INFUSED INTO PATIENTS WITH ADVANCED ARC OR AIDS (ACTG 080)

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Objective: Determine safety and feasibility of administering autologous CD8(+) lymphocytes to individuals with ARC or AIDS.
Methods: Autologous CD8(+) lymphocytes were derived from a one unit leukapheresis by a proprietary method in which the CD8(+) lymphocytes are specifically adsorbed to monoclonal antibodies covalently bound to the surface of a T-CELLector™ CD8 cell culture flask (Applied ImmuneSciences, Inc.) The CD8(+) cells were grown in the presence of phytohemagglutinin and recombinant interleukin-2 and harvested after 14 days of growth. The activated, expanded CD8(+) cells were infused over 30 minutes into a peripheral vein.
Results: Up to 10^{10} CD8(+) have been administered without ill effects. There were minimal changes in the peripheral blood lymphocyte subsets 24 hours after infusion. The expanded CD8(+) populations exhibited the following phenotypic characteristics: 99% of the cells were CD3(+)CD8(+)CD4(-) lymphocytes, 27% coexpressed the CD56 antigen, between 22 and 66% were HLA-DR(+) and 81-88% were CD11b(-), the phenotype associated with cytotoxic cells. Only 11-18% had the repressor phenotype, CD11b(+). None of these cells were found to be positive for pan-B (CD20) or pan-monocyte (CD14) antigens.
Conclusion: These data show that the expanded CD8(+) cells have the cytotoxic phenotype. When infused into HIV-infected individuals these may participate in antiviral cell-mediated cytotoxicity.

S.B.492 THERAPY OF HIV INFECTION WITH AS-101 AND ZIDOVUDINE

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Objective: To determine the safety, immunologic and anti-viral effects of AS-101 in combination with zidovudine (AZT) in pts with HIV infection and low CD4+ T cell counts.
Methods: HIV-infected adults with a CD4+ T cell count < 200/mm³ and/or < 20% of lymphocytes who tolerate a minimum of 600 mg per day of AZT receive AS-101 by short intravenous infusion 3 times per week for 12 wks at a dose of 3, 5, or 8 mg/m². Immunological, virological, clinical, and routine laboratory parameters are monitored. All pts receive pentamidine 300 mg by aerosol q 4 wks.
Results: Five patients received 3 mg/m² AS-101 3 times per wk with 1200 mg AZT per day. Two have completed a 12-wk course without dose modification; 3 had AS-101 prematurely terminated. One developed non-fatal Stevens-Johnson syndrome with rhabdomyolysis after 3 doses; 1 developed fevers after dosing with transient localized maculopapular rash after 5 doses; and 1 developed a transient scattered papular rash with several lesions on the palate. Other toxicities noted included a garlic body odor in all patients and lightening of newly grown hair in 2 pts. Four of 5 pts had rash. No hematologic toxicity was noted. No changes in immune function (CD4 cell % or number, NK cell activity, blastogenesis responses) were noted in treated patients to date.
Conclusions: AS-101 toxicities include rash, garlic body odor, change in hair color, and fever. One episode of non-fatal Stevens-Johnson syndrome was noted. No immuno-augmenting effects of AS-101 have been seen thus far at 3 mg/m² three times per wk. Future patients will receive 5 or 8 mg/m², and observations on the toxicity and immune-enhancing effects of AS-101 will continue.

S.B.494 RESTORED ANTI-P24 ANTIBODY AND CD4 LYMPHOCYTES BY THE CHINESE HERBAL, ANGINLYC, IN HIV SEROPOSITIVE MEN

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Objective: A special non-toxic combination of herbal extracts with demonstrated immune enhancing properties was tested in HIV seropositive men to evaluate for clinical efficacy and/or toxicity.
Methods: 18 asymptomatic HIV+ men were enrolled in a 6 month randomized double-blind placebo-controled pilot study, given Anginlyc (ANG) or placebo capsules 50 mg TID and no other ongoing HIV-related treatments. Baseline and monthly labs were: complete blood count, basic chemistry panel, beta-2 microglobulin, p24 antigen and anti-p24 antibody (p24Ab), CD4 lymphocyte % and count. Diet and symptoms were monitored daily.
Results: ANG for 6 mo:n=5, 3mo:2, 2-1 mo:4. Placebo 3mo:2. Drop outs (2 ANG, 3 placebo) because of lab costs. No adverse effects or labs from the herbal. Beta-2 did not change and p24 antigen remained negative. CD4 % with ANG group improved over baseline in 8 of 11 (73%), maintained in 1/11 (9%), decreased (by 2%) in 2/11 (18%); of 6 mo subset: 2/5 increased 2/5 decreased (by 2%); of 3-6 mo subset: 4/7 increased CD4% (notably 1.6x more in 6mo, 1.2x in 3mo). Three of these 7 had p24Ab and it tended to increase on ANG; 4 had no p24Ab. One remarkable case had none for 3 mo, but in the 4th mo increased dramatically almost 10-fold (55 to 500) then 42% more (500 to 708) by month 6. This is the first documented case of natural restoration of p24Ab production by an immunomodulator without toxicity.
Conclusion: This pilot study supports the Chinese studies of the immune enhancing effects of Anginlyc without toxicity, by increasing CD4 lymphocytes and, for the first time in HIV infection, restoring anti-p24 antibodies.

S.B.493 HIV-1-INFECTED PATIENTS RESPOND FAVORABLY TO ORAL ACEMANNAN (ACE-M)

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Objective: Two studies assessed response of HIV-1 infection to ACE-M and determined if laboratory values could predict response to treatment.
Methods: Subjects who were HIV-1 antibody positive and symptomatic were treated with 800 mg ACE-M daily and evaluated clinically using modified Walter Reed clinical scoring (MWR). T4/T8 lymphocyte counts and HIV-1 (P-24) core antigen levels indicated immune competence and active virus load.
Results: In the first study, the 15 original subjects had an average MWR of 5.6, but after 350 days of therapy the surviving 13 had an average of 1.8. T4 levels in 10 subjects increased from 346/mm³ to 471/mm³ within 90 days and to 610/mm³ at 180 days. Five of the 15 patients had detectable serum core antigen; by 350 days only 3 of 13 had detectable, but reduced, serum antigen. Data from this first study suggested that values for T4 and serum antigen levels could predict the response to ACE-M. A second study with 26 subjects confirmed this. The aggregate group had an average MWR of 3.0 at the start, and 90 days later their average was 1.8. The T4 levels of 16 "responders" rose from 313/mm³ to 372/mm³ during this period, but in 10 others went from 63/mm³ to only 77/mm³.
Conclusion: Fifteen of 16 individuals predicted to respond favorably had improved MWR, increased T4 counts and reduced antigen, indicating that the extent of immunosuppression and viral load influences response to therapy.

Other Treatments for HIV

S.B.495 ACTIVE IMMUNIZATION OF RECOMBINANT PRODUCED GP 160 IN PATIENTS WITH EARLY HIV INFECTION: PHASE 1 TRIAL IMMUNOGENICITY AND TOXICITY.

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Objective: To evaluate the immunogenicity and toxicity of recombinant GP 160 vaccine in patients with early HIV infection.
Methods: Patient Selection:Walter Reed Stage 1 and 2 HIV infection were immunized with a baculovirus expressed gp160 vaccine (MGS).
Vaccine Schedule: Patients were randomized into 6 different groups based on increasing vaccine dosages (40ug, 160ug, and 640ug) and two vaccine schedules (days 0,30,120 and days 0,30,60,120,150, 180).
Immunogenicity: Humoral response to viral specific proteins and envelop epitopes were quantitated by Western blot techniques. Cellular immune responses to viral specific proteins were determine by T cell proliferative assays.
Toxicity: In addition to local and systemic toxicity, alteration of clinical cellular immune parameters were assessed to include CD4 count, antigen specific T cell proliferation responses, and delayed hypersensitivity skin test reactivity.
Results: To date 28 patients have been randomized in one of six immunization regiments. Presently, eight patients have completed the vaccine schedule. Four of eight demonstrated evidence of vaccine induced alteration in the viral specific immune response to HIV as determined by increased humoral antibody directed against gp 160 to include seroconversion to gp160 specific epitopes; and the development of T cell proliferative responses to gp 160. No toxicity has been noted to date.
Conclusion: Active immunization of an HIV envelop derived viral protein product can induce measurable modifications in the host's viral specific immune response in a portion of individuals with early chronic HIV infection.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.496 THE EFFECT OF HIV+ SERA ON SOLUBLE CD4 BASED THERAPIES

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Objective: To determine whether HIV+ serum interferes with the binding of sCD4 to gp 120.
Methods: We developed 2 assays to quantitate the amount of sCD4 binding to either solid-phase r-gp 120 (Genentech) or HIV_{111B} infected H9 cells. Sera from 61 HIV+ persons and 10 HIV- persons were tested for their ability to inhibit the solid phase assay at a dilution of 1/100. The amount of blocking antibodies in several sera was determined by the amount of sCD4 needed to overcome 50% of the blocking inhibition during coincubation. The extent of reactivity against the gp 120-CD4 binding domain was also measured.
Results: 56 out of 61 HIV+ (92%) sera at a dilution of 1/100 blocked at least 50% of the sCD4 binding to solid-phase r-gp 120. None of the HIV sera displayed blocking activity. Blocking activity was confirmed on HIV+ cells for several selected sera. The amount of sCD4 blocking antibodies in several HIV+ sera at a dilution of 1/100 was equivalent to between 0.5 to 5.0 μg/ml of sCD4. The blocking antibodies comprise approximately 20% of the total antibody reactivity against gp 120.
Conclusion: The presence of high concentrations of antibodies that block the binding of gp 120 to CD4, essentially mimicking sCD4, and the inability of these antibodies to prevent the onset of HIV-related disease, would appear to undermine the strategy upon which sCD4 therapy is based, as well as directly inhibit any toxin-CD4 conjugate therapy.

S.B.497 THE USE OF MEDICINAL HERBS AMONG AIDS CLINIC PATIENTS.

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The use of herbs and plant products for medicinal purposes has been advocated as alternative treatment strategy for HIV related illness. This is consistent with reports of a high frequency of FDA unapproved medical treatments among such patients.
Objective: To describe the use of medicinal herbs among AIDS clinic patients.
Methods: We interviewed 56 randomly selected patients attending a university based AIDS clinic, and participating in a cohort study of health services utilization.
Results: Fourteen participants (25%) reported use of one or more herbs (range 1-8) in the prior three months, at a mean cost of $49 per month (range 0-150). 28% were unable to identify the herb that they used. Use of herbs was not correlated with a diagnosis of AIDS or ARC, nor with the number of symptoms reported. Of those patients taking herbs, 57% reported that they obtained their information from alternative healers such as herbal practitioners, acupuncturists, chiropractors, or homeopaths, and 36% actually received their herbs from an alternative healer. Of those taking herbs, 21% were involved in clinical drug trials. Several patients reported taking herbs in amounts at which pharmacologic or even toxic effects have been seen in case reports. Potential adverse effects of these herbal medications include anaphylactic and anaphylactoid reactions, skin rashes, GI irritation and diarrhea, thrombocytopenia and coagulopathies, changes in mental status, hepatotoxicity, and electrolyte disturbances. These can also be symptoms of HIV disorders or side effects of drugs given to treat HIV infected patients.
Conclusion: The prevalence of medicinal herb use underscores the need for physicians treating AIDS patients, and those running clinical trials to obtain specific information on patients' use of herbs. Patient care and clinical trials could be confounded by the use of herbs whose pharmacologic effects can resemble commonly occuring symptoms in HIV disorders or side effects of prescribed or protocol medications.

S.B.498 EVALUATION BY PCR OF HIV-1 STATUS OF AIDS PATIENTS RECEIVING PASSIVE IMMUNOTHERAPY

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Objective: To assess by PCR the HIV-1 status of AIDS and ARC patients on passive immunotherapy.
Patients and Methods: A hyperimmune plasma collected from healthy, HIV-1 infected individuals with high titers of neutralizing antibodies was administered to 7 AIDS and 3 ARC patients. 500ml of plasma was administered monthly for 10 months. All patients were monitored for viral antibodies, antigen and viral nucleic acid by the polymerase chain reaction (PCR). DNA and RNA specific PCR was performed on nucleic acid isolated from serum using primers from the gag region of the HIV-1 genome.
Results: HIV-1 DNA and RNA were detected prior to administration of immunoglobulin in all patients. No viral nucleic acid could be detected in serum after the first transfusion in any patient and this remained so for the length of the study in the ARC patients. Viral sequences were detected in 3/7 AIDS patients towards the end of the trial (10-11 months). HIV-Ag was not detected except in 2 AIDS patients late in the course of the study. Patients receiving hyperimmune plasma showed high titers of antibodies to HIV.
Conclusions: Passive immunotherapy with hyperimmune plasma eliminated detection of HIV nucleic acid from the plasma in both AIDS and ARC patients, although the effect was not as sustained in AIDS. This result suggests that passive immunization may be effective in clearing plasma viremia, especially in ARC patients.

S.B.499 LONG-TERM FOLLOW-UP ON THE EFFECTS OF PASSIVE IMMUNIZATION IN PATIENTS WITH ARC AND AIDS

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Objective: to assess the safety and potential efficacy of passive immunization in ARC and AIDS patients with hyperimmune plasma.
Methods: Advanced AIDS and ARC patients who were consistently HIV-1 p24 antigen positive for a mean of >6 months were given monthly transfusions of 500ml ABO matched pooled plasma starting in March 1988. All patients were monitored at monthly intervals for: HIV-1 p24 antigen, antiviral antibody profile by Western blot (WB) and antibody titre by the Karpas cell test, CD4+ cell count and clinical status.
Results: Plasma transfusions resulted in sustained clearance of HIV-1 p24 antigen. WB revealed extensive deficiency or absence of detectable antibodies to most HIV-1 structural proteins. The total level of antiviral antibodies was maintained in the AIDS patients with a dramatic increase of 8-fold in the level of one of the ARC patients. The CD4+ cell count decreased in the AIDS patients but was stable in the ARC patients. Clinically there was an initial improvement in all patients. 5/6 of the advanced/terminal AIDS patients died by the 17th month. The ARC patients remained in clinical remission.
Conclusion: Passive immunization appears to be a safe procedure in ARC and AIDS patients. It reduces HIV-1 p24 antigen to undetectable levels. To advanced/terminal AIDS patients the benefit is of limited duration, while to ARC patients it may be long-term. Therefore it appears that passive immunization should start early in the disease.

S.B.500 PHASE I TRIAL OF HIV IMMUNE GLOBULIN IN PERSONS WITH AIDS

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Objective: To assess the safety and pharmacokinetics of HIV immune globulin (HIVIG). To develop information to design efficacy studies of HIVIG.
Methods: Plasma from asymptomatic, HIV Ag and plasma HIV culture neg HIV infected persons with high anti-p24 titer was inactiviated with 1% Tri-N-butyl phosphate and cold alcohol fractionated to produce HIVIG. Subjects were HIV-infected persons who had had pneumocystosis 5-32 (mean 13.4) mo previously and were receiving zidovudine. All subjects received HIVIG q28d x4: 2 doses at 50 mg/kg then 2 at 200 mg/kg. Anti-p24 titer was obtained by competitive EIA. Toxicity assessment included CBC, platelets, liver function tests, CH 50, C1q binding, uric acid, Ca, PO_4, CXR, EKG.
Results: One subject noted 20 min lightheadedness after the 3rd dose. Three subjects developed reversible pneumocystosis and one wasting during HIVIG treatment. Otherwise no clinical or laboratory toxicity was observed. Mean antibody changes (pre to 24h post dose) after the 2 low and 2 high doses were, respectively: total IgG rise .64, 2.63g/L and anti-p24 5436, 19199. Mean $T_{1/2}$ of anti-p24 after dose 4 was 15.9 days. CD4 count and beta-2 microglobulin pre 1st dose and 28d post 4th dose were, respectively, 54, 51 $x10^6$/L; 3.24, 3.17µg/L. In all 5 subjects who were HIV Ag pos pre 1st dose, HIV Ag became undetectable and the anti-p24 $T_{1/2}$ was shorter. Paired plasma HIV cultures pre and 24h post dose were available for 37/48 doses: 20 were +/+, 5 +/-, 3 -/+, 12 -/-. Of 7 1st dose +/+ pairs, the post dose time to positivity was equal or longer in all (mean 8.9d to 17.9d).
Conclusions: HIVIG is safe in persons with AIDS. HIVIG kinetics are typical of immune globulins. Anti-p24 $T_{1/2}$ is shorter in HIV Ag pos persons.

S.B.501 PEPTIDE T PHASE I STUDY:IMMUNO/VIROLOGIC RESULTS

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Objective. To evaluate the toxicity and possible response measures to Peptide T (D-ala-1-peptide-T-amide), a homologue of VIP and gp-120, and gp-120 receptor blocker.
Methods. In this study, 9 AIDS and 11 ARC patients have received IV Peptide T (dose range:.06-3.2mg/kg/day) for either 4 (n = 6) or 12 weeks (n = 14) followed by 8 weeks or more of intranasal dosing (25 mg/day). The patients receiving 12 weeks of drug had fixed doses; the others received escalating doses for 30 days. No other antiviral agents were given.
Results.Pruritis was observed in one patient; no other toxicity was observed. T4 counts remained stable during drug testing; T 8 count increased in many patients up to 50% of baseline. 7 patients were p24 Ag positive (>50 mcg/ml) at baseline and remained positive during drug testing; the others stayed negative throughout the study. Quantitative PCR results were available on 14 patients. Of the 8 patients with initially high PCR values, 4 decreased significantly on drug. Of the 6 patients with initially low PCR values, one increased significantly on drug.
Conclusion. Peptide T was well tolerated up to 24 weeks. The immunologic and virologic measures in this study showed stability across drug testing periods without consistent worsening or improvement.

S.B.502 END-USER EVALUATION OF A NOVEL EXPERIMENTAL AIDS TREATMENT INFORMATION SERVICE

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Objective: To evaluate end-user preferences for the dissemination of AIDS clinical trials and treatment information.
Methods: 700 recipients of AmFAR's AIDS/HIV Experimental Treatment Directory (TD) were surveyed and asked to evaluate the format and content of the TD and to indicate delivery system preferences for receiving treatment information (print, on-line, diskette, CD-ROM). Respondents were stratified by profession, reason for use and client type.
Results: Interim analysis of 228 respondents' evaluation of print product:
health care providers (40%), AIDS service providers (28%), PWA/concerned individuals (15%), others (17%).

	Description of AIDS Drugs/Treatments				Information on Clinical trials			
(%)	Excellent	Good	Fair	Poor	Excellent	Good	Fair	Poor
Usefulness	61	29	<1	0	42	39	<1	0
Clarity	56	33	<1	0	36	44	4	0
Timeliness	42	42	8	0	33	44	6	0
Thoroughness	47	38	8	0	34	44	5	0

Delivery system preference:
Print (36%), On-line (30%), Diskette (27%), CD-ROM (5%)
Conclusion: Respondents in all categories indicated a preference for printed clinical trial and treatment information, with the TD rated as a valuable resource by a heterogeneous audience. However, an on-line information system was chosen as the most efficient method for distributing current treatment and trial information.

S.B.503 THE INFLUENCE OF PROPHYLACTIC SUBSTITUTION WITH INTRAVENOUSLY APPLICABLE IMMUNOGLOBULINS (ivIg) IN HIV INFECTED PATIENTS STAGE WR5-6(CDC IV C).

Brunkhorst,U., Beermann,M., Scheffel.D., Tschechne,B., Deicher,H., Schedel, I., Hannover Medical School, West Germany

Objective: To evaluate, whether the clinical course of HIV infection in patients on standard AZT-therapy will be influenced by regulary prophylactic administration of ivIg and to further characterize the B-cellular immunodeficiency in HIV-infection in vitro.**Methods:** Since 10/1989 49 pat. with HIV-1 infection stages WR 5 (n=11) or WR 6 (n=38)were enrolled in a prospective randomized clinical trial. All pat. were on treatment with AZT and PcP-prophylaxis. 25 pat. were additionally treated with ivIg (200 mg/ kg body weight every two weeks). Peripheral blood cells of all pat. were determined by FACS anylysis for T-cell (CD 3,4,8,25) and B-cell markers and serum was measured for in vivo Ig synthesis and HIV-specific antigen (p 24 Antigen ELISA). In addition, in vitro Ig synthesis (Ig G,A,M), liberation of tumor necrosis factor, IL 4 and IL 6 production after cultivation of PBMC for 2 , 6, and 10 days was analysed. **Results:** Before starting therapy serum Ig was elevated in both groups of HIV-infected pat. B-cell surface markers showed a diminished number of cells with markers for early, proliferable B-cells and an increased number of late B-cells and plasma cells compared to controls. Results of in vitro studies before therapy and after 3 and 6 months of therapy will be demonstrated.
This study is supported by a grant of the BGA/Berlin, Germany.

S.B.504 VIROXAN® — A NEW THERAPEUTIC AGENT FOR THE CLINICAL MANAGEMENT OF ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS).

Herman, Stephen D.*; Herman, James A.*; Reinhardt, Jeffrey H.**
*Stephens Pharmaceuticals Group, Inc., Brea, California, USA; **Marin Clinic of Preventive Medicine and Health Education, San Rafael, California, USA.

Objective: To synthesize a safe and effective compound with bifunctional activity as an anti-infective agent with an immunomodulatory action that is effective in the clinical treatment of ARC and/or AIDS. *Methods and Results:* VIROXAN®, a terpane alkoxide, has been synthesized using the method of Neel as modified by one of us. Animal toxicity studies revealed a minimally toxic compound with acute oral toxicity of greater than 5,000 mg/Kg in rats and intraperitoneal (i.p.) toxicity greater than 1,500 mg/Kg in Swiss Webster mice. Human volunteers, including one of us, who were given VIROXAN® by intramuscular (IM) or intravenous (IV) injections, evidenced no signs or symptoms of acute or systemic toxicity; clinical laboratory values also remained normal. In vitro studies of VIROXAN's® range of activity against pathogenic bacteria, fungi (Candida albicans), and viruses including the HTLV-3 virus produced results with minimal inhibitory concentrations (MICs) of from 0.1 to 80 µg/ml. When VIROXAN® was administered to a group of ten self-selected AIDS (N=4) and ARC (N=6) patients in an open, clinical evaluation, both clinical signs and symptoms and laboratory correlates improved in all of the volunteers who have been asymptomatic for as long as 22 months. The group mean T-4 lymphocytes increased from 305 to 740; the percent (%) T-4 lymphocytes increased from 22% to 35%; and the helper to suppressor (H:S) ratio increased from 0.38 to 0.85 over 6 months. Over these 6 months, all of the VIROXAN®-treated volunteers evidenced a marked decrease in fatigue; gain in weight; reduction of lymphadenopathy; clearing of thrush, pulmonary congestion, diarrhea, and neurologic symptoms. *Conclusion:* Preliminary clinical evaluation with intravenous (IV) VIROXAN® in a limited number (N=10) of self-selected patients has produced positive clinical responses in ARC and AIDS patients. Quantitative-structure-activity relationships predict the utility of VIROXAN® as a broad-spectrum, therapeutic agent which crosses the blood-brain barrier, and will be useful in the treatment of the infectious diseases and the immune suppression characteristic of AIDS.

Oncology

S.B.506 HODKIN'S DISEASE IN INTRAVENOUS DRUG USERS (IVDU) WITH HIV INFECTION. A REPORT OF 27 CASES IN MADRID.

Rubio, Rafael; Serrano,M; Flores,E; Buzón,L; Yebra, M; Escobar,Y; Pintado,V; Gª-Polo,I; Gíl,A; Costa,JR.
Cooperative Study Group: H. 12 Octubre; H. Ramón y Cajal; H. Gregorio Marañón H. La Paz; C. Puerta Hierro; H. Princesa.

OBJETIVE: To determine the clinico-pathological characteristics of Hodgkin's Disease (HD) in patients (ps) with HIV-Infection, in our area of Madrid — (Spain).
METHODS: We report 27 ps with HD and HIV-Infection diagnosed in 6 hospitals of Madrid from 1984 to January 1990. Twenty-six (96.2%), were males and 1 - woman, with a mean age of 25.6 years (range 18-35).
RESULTS: All belong to AIDS risk groups, being 88.4% IVDU. The histological - subtypes were: Mixed Cellularity = 44.4%; Nodular Esclerosis = 22.2%; — Lymphocytic Depletion = 11.1%; Lymphocytic Predominance = 7.4%. At diagnosis 24 ps (88.8%) were in advanced clinical stages (IV = 17 ps; III = 7 ps). 19 ps (70.3%) had B symptoms. The mean of CD4+ lymphocites was 260 ± 51 mm^3. Fourteen of 23 ps (60.8%) developed AIDS after the HD diagnosis. The response to therapy was poor. The overall mortality was 69.5%, being the oportunistic infections the main cause. The median survival was 15 months.
CONCLUSION: 1) The HD is the third most frecuent neoplasia in IVDA with HIV-Infection in our area, being the ratio Non-Hodgkin's Lymphoma/Hodgkin's — Disease = 1.8. 2) HD behaves in a very different way in this patients from the general population, showing advanced stages, B Symptoms, agressive — histologies, high frecuency of medular invasion, substancial depletion of - CD4+ lymphocites, poor therapeutic response and short survival. 3) Because of this reasons we think that HD in HIV-Infected patients could be included in the definition of a case of AIDS.

S.B.505 PEPTIDE T STUDIES: NEUROPSYCHIATRIC RESULTS

McGrail, Michael*, Heseltine,P.N.R.*, Eaton, E.*, Parker, E..*, Ingraham, L**, Ruff, M.**, Pert, C.**, Bridge, P.**,and Goodwin, F.**
*University of Southern California, Los Angeles,CA., U.S.A.
**National Institute of Mental Health, Bethesda, MD.,U.S.A.

Objective. To evaluate neuropsychiatric outcome in open trial of Peptide T (D-ala-1-peptide-T-amide), a homologue of VIP and gp-120, and a gp-120 receptor blocker.
Methods. In these 24 week on-off-on studies, 15 AIDS and ARC patients received escalating fixed IV doses of Peptide T (.06-3.2mg/kg/day) in open trial without other antivirals. Repeat measures neuropsychologic evaluations were taken after training to minimize learning effects.
Results. No toxicity was observed. Significant ($p < .05$) changes across 5 HIV relevant neuropsychologic measures were observed comparing on-off-on drug periods. Neuropsychologic change across time correlated significantly ($r = .77$) with protection against gp-120 induced neurotoxicity from patient CSF in hippocampal cell culture assay.
Conclusions. Neuropsychologic function variation during an on-off-on design suggest potential drug associated effects on neuropsychiatric function in HIV patients. Observed correlation of neuropsychologic change with reduced gp-120 associated neurotoxicity suggests a possible anti-gp-120 mechanism of action for Peptide T in HIV patients.

S.B.507 HIV-ASSOCIATED LYMPHOMAS (HAL): REPORT OF 160 CASES FROM FRANCE

Rothmann, Sérgio; Toledano, M.; Tourani, J.M.; Andrieu, J.M.
Laennec Hospital, Paris, France.

From 1/87 to 5/89 160 HAL were recorded by the French Registry of HIV Associated Tumors. Main characteristics and clinical outcome are summarized in the tables.

CLINICAL CHARACTERISTICS

	PTS	RISK GROUPS				HIV STATUS		TUMOR STAGE		
		Homo	IVDA	Both	other	Non AIDS	AIDS	I+II+III	IV	Extranodal
HD	34	38%	41%	3%	18%	94%	6%	70%	24%	6%
BL	45	47%	18%	4%	31%	88%	12%	27%	69%	4%
ILC	81	65%	6%	5%	23%	58%	42%	18%	42%	40%

(pts:patients, HD:Hodgkin's disease, BL:Burkitt's like lymphoma, ILC:immunoblastic and large cell lymphoma, IVDA:intravenous drug abuse.)

CLINICAL OUTCOME

	CR	MEDIAN SURVIVAL months	2-YEAR SURVIVAL	CAUSE OF DEATH	
				O.I.	TUMOR+/- O.I.
HD	86%	19	48%	93%	7%
BL	35%	5	18%	35%	65%
ILC	34%	5	0%	20%	80%

(CR:complete remission, O.I.:opportunistic infection.)

An history of IVDA is more frequently associated with HD than with non Hodgkin's lymphoma (NHL) ($p<0.0001$). HD and BL occur earlier in the course of HIV infection than ILC. Disseminated disease is frequent in the three settings but purely extranodal disease is mainly observed in ILC ($p<0.0001$). CR in HD is similar to that of primary HD but it is very low in HIV associated NHL. Causes of death are different for each type of lymphoma: in HD it is mainly due to O.I. while in NHL it is generally associated to tumor progression.

(Supported by AREMAS and Ligue Nationale Contre le Cancer)

1047

S.B.508

THE EPIDEMIOLOGY AND CLINICAL FEATURES OF KAPOSI'S SARCOMA (KS) IN AFRICAN WOMEN WITH HIV INFECTION.

Desmond-Hellmann SD*, Mbidde, Edward K**, Kizito A**, Hellmann NS*. *University of California, San Francisco, California, USA, **Uganda Cancer Institute, Kampala, Uganda (UCI).

Objective: KS is uncommon in females with HIV infection in developed countries, where it occurs almost exclusively among the homosexual male risk group. We evaluated the features of KS in women presenting to the UCI.
Methods: All patients presenting to the UCI with KS were evaluated with history, physical exam, biopsy, and HIV ELISA (Cambridge Bioscience Recombigen). Comparisons were made between male and female patients.
Results: From 1/1/88 to 12/31/89, 188/193 KS patients presenting to the UCI were evaluable: 163 males and 25 females, of whom 112 males and 23 females were classified as epidemic (HIV-associated) KS. Male:female ratios among epidemic KS = 4.9:1 and endemic KS= 25.5:1. New cases of KS in females are increasing: 14/23 patients presented in the last 6 months of 1989.

	Female Epidemic KS	Male Epidemic KS
Median age (yrs)	28	33
Median duration of symptoms (mo)	7	6
Median survival (days)	85	170
HIV ELISA Positive	17/17 (100%)	82/83 (99%)

Oral and genital KS were common in both sexes. Females were significantly more likely to have diffuse lymphadenopathy (OR = 5.4, p = 0.01).
Conclusions: HIV-associated KS is occurring at increasing rates in both male and female patients in Uganda who are exclusively heterosexual. Compared to males, females are younger, have more aggressive disease with diffuse lymph node involvement, and die sooner. The role of hormonal factors in the initiation and pathogenesis of KS should be investigated further.

S.B.509

INTERFERON ALPHA-2B ASSOCIATED WITH ZIDOVUDINE IN PATIENTS (P) WITH AIDS-RELATED KAPOSI'S SARCOMA (KS) : PRELIMINARY RESULTS.

Hermans, P.; Sommereijns, B.; Cauchie, E.; Payen, M.C.; Clumeck, Nathan. Div. of Infectious Diseases, St Pierre University Hospital, Brussels, Belgium

Objective: To evaluate the efficacy and safety of combined therapy Interferon Alpha-2B (Intron-A) with Zidovudine in P with AIDS-related KS.
Method: Since August 1988, 16 P with AIDS and KS received Intron A (3MU/d SC) 5 times weekly associated with an oral daily dose of 600mg of zidovudine. Clinical response using Krigel's criteria was evaluated after at least 4 weeks of treatment and adverse reactions were recorded.
Results: KS staging was: stage II=4; stage III=12; subtype A=9; B=7. The average delay between KS diagnosis and therapy was 215d (range: 22-708). Mean duration of therapy was 50d (24 to 78d). Fifteen P were evaluable for efficacy: complete response=1; partial=10; stable disease=1; progressive disease=3. All P were evaluated for safety: 1 P was dropped out for severe (WHO grade 4) but reversible bone marrow toxicity at day 23. Eight other P developed transient hematotoxicity (50%). Mild increases of hepatic enzyme levels were reported in 5 P. Side effects were: flu-like symptoms (12 P), digestive troubles (2 P), alopecia (1 P), weight loss (1 P), psychiatric (1 P) and neurologic (1 P) disorders. The mean period of follow-up after the onset of therapy is 304d (45 to 510d). Thirteen P are still alive.
Conclusion: This regimen appears to be at least as efficient as previous monotherapy with higher doses of Intron-A. Clinical adverse events are mostly easily manageable. Close monitoring of laboratory data is required to avoid transient but significant bone marrow toxicity.

S.B.510

A RANDOMIZED TRIAL OF CHEMOTHERAPY WITH OR WITHOUT RECOMBINANT GRANULOCYTE MONOCYTE COLONY STIMULATING FACTOR (rGMCSF) IN HIV-ASSOCIATED NON-HODGKIN'S LYMPHOMA (NHL): EFFECT OF TREATMENT ON SERUM HIV P24 ANTIGEN LEVELS.

Kaplan, Lawrence*; Kahn, J*; Crowe, S*; Volberding, P*; Grossberg, H**; McManus, N*; and Mills, J*. *Department of Medicine, San Francisco General Hospital, San Francisco, California; **Schering-Plough Corp, Kenilworth, New Jersey.

Objective: To observe the effect of chemotherapy with or without rGMCSF on serum HIV p24 antigen levels in patients with HIV-associated NHL participating in a randomized therapeutic trial.
Methods: Between August, 1988 and September, 1989 20 patients with HIV-associated NHL were randomized to receive treatment with either cyclophosphamide 1g/m^2 d1, doxorubicin 40 mg/m^2 d1, vincristine 2 mg d1 and prednisone 100 mg/m^2 d1-5 (CHOP) or CHOP with rGMCSF, 10-20 mcg/kg/d subcutaneously, d1-10 or d4-13. Serum samples were obtained prior to chemotherapy (day 1), d8 of treatment and d15. Specimens were frozen, batched and assayed using a standard (Abbott) HIV-I antigen capture assay.
Results: Changes in serum HIV-I p24 antigen levels are shown below for all patients who were p24 antigen-positive (35pg/ml) prior to therapy:

	Day 1	Day 8	Day 15	
N	13	10	5	
Mean p24 (pg/ml)	1000	95	315	D1 vs D8 p=0.017
Range (pg/ml)	59 - 3319	4 - 243	135 - 674	

There were no significant differences in p24 antigen changes between the chemotherapy only and the chemotherapy with rGMCSF groups. No significant rise in serum p24 antigen was observed in any patient in either group.
Conclusion: HIV-1 serum p24 antigen levels are significantly reduced by the administration of chemotherapy for NHL. This is likely due to a cytotoxic effect rather than a direct effect on HIV replication. Evidence for rGMCSF-induced up-regulation of HIV replication based on p24 antigen levels was not demonstrated in this setting.

S.B.511

BLEOMYCIN IN TREATMENT OF AIDS RELATED KAPOSI SARCOMA

GUERMONPREZ G., KATLAMA C., CAUMES E., BRUCKER G., ROSENHEIM M., GENTILINI M.
Infectious Diseases Department Pitié-Salpêtrière PARIS (France)

Objective : Evaluate, in an open prospective study, the efficacy and tolerance of Bleomycin as a single chemotherapeutic agent in AIDS Kaposi sarcoma (KS).
Method : AIDS patients were included if they have a progressive muco-cutaneous KS (≥ 5 lesions) and/or opportunistic infections (OI). Bleomycin 5 mg/day was given intramuscularly during 3 days every 2 weeks. Clinical and biological evaluation were recorded every 2 weeks.
Results : 50 patients have been included. By now, 38/50 with a follow up ≥ 8 weeks are presented here. 14/38 (37%) have prior OI ; mean CD4 cells was 121/mm3 (3-519). All patients received zidovudine (600 mg-1 g/day).
Results : Clinical response was as follows :
. Favorable : 19/38 (50%) with complete response 3/38, partial response 16/38.
. Stability : 13/38 (34%)
. Failure : 6/38 (16%)
Mean duration of treatment was 4 months (2-10)
Side effects were observed in 14/38 (37%) with discontinuation of Bleomycin in 4/38 (10%) : skin rash (2), acrosyndrom : (2), fever (6), anemia/leucopenia (6)
Conclusion : Bleomycin is an effective treatment of AIDS KS with a clinical response in 50% of cases ; side effects are unfrequent. The hematologic tolerance of Bleomycin allows concomittant use of zidovudine in AIDS patients.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.512 KAPOSI'S SARCOMA IN HIV-1 SERONEGATIVE HOMOSEXUAL MEN.

Friedman-Kien Alvin E.[1], Saltzman BR[2], Cao YZ[1], Mirabile M[1], Li JJ[1], Nestor M[1], and Peterman TA[3].
[1]New York University Medical Center, NY NY, [2]Beth Israel Medical Center, NY NY, [3]Centers for Disease Control, Atlanta GA.

Objective: To present 7 cases of Kaposi's Sarcoma (KS) in HIV-1 seronegative homosexual men.
Methods: 350 serum samples from sexually active homosexual male patients with biopsy proven KS were tested for antibodies to HIV-1 by ELISA and Western Blot (WB) techniques. 286 of the 350 serum samples were also tested by using the HIV-1 p24 antigen capture assay. Detection of HIV-1 DNA sequences in the peripheral blood mononuclear cells (PBMC) from the HIV-1 seronegative KS patients were performed using a polymerase chain reaction (PCR) test with HIV-1 gag primers. The presence of HIV-1 neutralizing activity (NT act.) was determined by using a neutralization assay performed with the H9 clones as target cells and HTLV-RF as the virus inoculum in the HIV-1 seronegative samples.
Results: 343 of the 350 samples (98.0%) from these patients with KS were positive for antibodies to HIV-1. 106 of 279 HIV-1 seropositive samples (37.9%) were positive for HIV-1 p24 antigen. 7 of the 350 samples (2%) tested were HIV-1 seronegative. All 7 of these individuals had normal absolute numbers of CD4 T-helper cells. The PBMC samples available from 6 of the 7 HIV-1 seronegative patients with KS were HIV-1 DNA/PCR negative. HIV-1 serum NT act. was negative in all 7 HIV-1 seronegative samples.
Conclusion: These findings suggest that KS occurring in homosexual men may possibly be caused by yet another sexually transmitted infectious agent other than HIV-1, perhaps more readily expressed in the setting of HIV-1 infection.

S.B.513 COMBINATION THERAPY WITH INTERFERON-α (IFN-α), ZIDOVUDINE (AZT), AND RECOMBINANT GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR (GM-CSF): A PHASE I TRIAL IN PATIENTS WITH AIDS-ASSOCIATED KAPOSI'S SARCOMA.

Krown, Susan E.; Paredes, J.; Bundow, D.; Flomenberg, N.
Memorial Sloan-Kettering Cancer Center, New York, NY, USA.

Objective: To improve the hematologic tolerance of the IFN-α/AZT combination in patients with AIDS-associated KS by the addition of GM-CSF.
Methods: Patients with KS receive AZT 200 mg PO q4h and GM-CSF (Schering/Sandoz) 5ug/kg SC daily; successive cohorts will receive 5, 10 or 20 million U of IFN-α2b SC daily until the maximum tolerated dose is determined.
Results: Of 5 patients treated at the first IFN-α dose level, all have required reduction of the GM-CSF dose, to 1.25-3.75 ug/kg/d, because of leukocytosis (mean peak neutrophil count, 14.6 x $10^3/mm^3$); no reductions in the doses of IFN-α or AZT have been required. In addition, mean CD4 counts and % CD4 increased at week 4, from 278±78/mm^3 (18.4%) at baseline to 363±79/mm^3 (23%) at week 4; the increase in % CD4 was statistically significant (p=0.03, paired t-test). By week 8, mean CD4 values returned to baseline.
Conclusion: The addition of low doses of GM-CSF prevented neutropenia induced by the combination of 5 million U of IFN-α daily and 200 mg of AZT q4h. Patient entry at higher IFN-α doses is continuing. In our earlier Phase I trial of the IFN-α/AZT combination, a higher KS regression rate was seen in patients receiving 200 vs 100 mg AZT q4h (61.5% vs 37.5%) and in patients receiving moderate-to-high vs low IFN-α doses (52% vs 33.3%). Increasing the tolerance of both drugs, through the addition of GM-CSF, will permit future prospective testing of the potential superiority of a more intensive drug regimen. (Supported by an AIDS Clinical Trials Group grant.)

S.B.514 KAPOSI'S SARCOMA AND AIDS - ANNUAL RATE AND SURVIVAL AT THE GAFFREE & GUINLE UNIVERSITY HOSPITAL - 1983-1989.

Dias, Martha Guimarães*; Quinhões, EP*; Pacheco, RG*; Miguez, LA*; Guimarães, MDC**; Morais-de-Sá, CA*.
* Gaffrée & Guinle University Hospital, University of Rio de Janeiro (UNI-RIO), BRAZIL
** Federal University of Minas Gerais; FIOCRUZ.

Objective: To study the annual rate and survival of Kaposi's Sarcoma patients.
Methods: Of 440 AIDS patients (CDC criteria - IV) from 12/01/83 to 12/31/89 we retrospectively studied 80 adult patients with Kaposi's Sarcoma (KS) confirmed by biopsy. Annual rate, cumulative survival and survival associated with opportunistic infection (OI) were studied (Kaplan-Meier).
Results: 80 patients with Kaposi's Sarcoma, were all male, mean age 36,33 ± 9,08; 50 (63%) homosexual, 27 (34%) bisexual and 3% with multiple risks; 69 (86%) white, 11 (14%) mulatto. For the entire population in the study the cumulative survival was 18,46 ± 2,67 (MO) with median = 13;for patients with KS only was 22,24 ± 5,46 with median = 17, and patients with KS and OI the survival was 13,3 ± 1,35 with median = 12. The KS and OI patients were separated into two groups according to there distinctive interval of diagnoses: 1- KS/OI patients (OI-free survival) mean = 5,6±0,78 MO and median = 3 MO, survival time $\bar{X}$ = 12,20; 2- OI/KS patients (KS-free survival) mean = 14,21 ± 3,7 MO and median = 10,5 MO, survival time $\bar{Y}$ = 8,5.

ANNUAL RATE OF NEW KS CASES AMONG NEW AIDS CASES

AIDS CASES / YEAR	N = 440	KS	n = 80	ESTIMATED INTERVAL WITH p < 0,05
1983	(n = 2)	1	(50 %)	± 0,69
1984	(n = 18)	5	(27,7%)	± 0,23
1985	(n = 36)	15	(41,6%)	± 0,16
1986	(n = 58)	10	(17,2%)	± 0,12
1987	(n = 90)	14	(15,5%)	± 0,10
1988	(n = 146)	24	(16,4%)	± 0,06
1989	(n = 90)	11	(12,2%)	± 0,10

Conclusion: 1) Survival is longest in KS patients without OI.
2) KS/OI patients survival was longer than OI/KS patients survival.
3) There seems to be a downward trend at annual rate of new KS cases from 1986 through 1989.

S.B.515 SURVIVAL OF 30 PATIENTS WITH AIDS RELATED KAPOSI'S SARCOMA (KS) TREATED WITH AZT AND ALPHA 2 A INTERFERON (IFN).

Gonzalez-Canali Gustavo, Louvet C., Navarro-Carrola E., De Gramont A., Demuynck B., Roussard Ph., Krulik M. Hôpital Saint-Antoine, Paris, France.

30 patients (pts) with AIDS-KS were treated during 3 months with AZT 600 mg orally (200 mg every 8 hours) associated with Alpha 2 A IFN (18 MU daily S/C). All pts had biopsy proven KS. KS staging was IA = 2 pts, IIA = 15 pts, IIB = 3 pts, IIIA = 9 pts and IIIB = 1 pt (KRIGEL). They presented a minimum of 3 mesurable lesions and no concurrent opportunistic infection with a performance status equal or below 1 (WHO). 24 pts had less than 400 T4 cells of which 5 had less than 100 T4 cells. Median age was 32-year-old (19-43). Risk factor for AIDS was homosexuality in 26 an intravenous drugs abusers in 4. All pts were evaluable for toxicity and response. 25 pts (82%) présented a clinical response : Complete Response in 14 pts (46%) (2 = IA, 10 = IIA, 1 = IIB and 1 pt = IIIA) ; 11 pts (36%) presented a Partial Response (4 pts = IIA, 1 pt = IIB and 6 pts = IIIA) ; 5 pts remained stable (1 pt = IIA, 3 pts = IIIA and 1 pt = IIIB). No progression was observed. IFN was then diminished to 18 MU S/C three times a week for the following 27 months. When leucopenia appeared in 13 pts (43%), AZT was diminished of 50%, 4 pts stopped treatment due to persistent myalgia and leucopenia. T4 cells remained stable in 13 pts (43%) and no opportunistic infection was observed among the pts who continued treatment. The 4 pts who stopped the treatment developed Ks progression and opportunistic infection after 3 to 6 months. This treatement confirmes a high response rate with a tolerable toxicity, at present all pts are alive after 30 months. Further studies in other AIDS manifestations should be encouraged with this treatement.

S.B.516 RESULTS OF TREATMENT OF KAPOSI'S SARCOMA IN PATIENTS WITH HIV INFECTION.

Latif, Ahmed; Pozniak, A; Neill P; Houston, S; McLeod,D; Bassett, M; Ndemera, B. University of Zimbabwe Medical School, Harare, Zimbabwe.

Objective: To determine the outcome of patients with Kaposi's Sarcoma treated with single-day and 5-day monthly pulses of combination chemotherapy using actinomycin D, Bleomycin and vincristine.

Methods: Subjects with histologically proven Kaposi's Sarcoma were investigated, clinically staged and treated. Subjects with stages I and II Kaposi's Sarcoma were treated by radiotherapy and these with stage III and IV treated with cytotoxics.

Results: 268 subjects with Kaposi's Sarcoma and HIV infection were enrolled over 4 years (males 82%). The mean age of males was 34.5± 9.6 years and that of females was 30.9± 10.2 years. 4% of subjects had localised disease and were treated with radiotherapy. In all these, complete remission was obtained. Of subjects with generalised disease, complete remission was achieved in 35% of those treated with 5-day pulses and in 37% of those on single-day pulses. The 6 month survival rate of subjects on the 5-day regime was 36% and that for subjects on single-day pulses was 51%.

Conclusion: Subjects with Kaposi's Sarcoma respond well to treatment with radiotherapy or cytotoxics. The result of treatment of generalised disease is poor. Subjects treated with single-day pulses given monthly respond better than those on 5-day pulses. Subjects with pulmonary disease have a worse prognosis.

S.B.517 RISK OF HUMAN PAPILLOMAVIRUS (HPV) AND CERVICAL SQUAMOUS INTRAEPITHELIAL LESIONS (SIL) HIGHEST AMONG WOMEN WITH ADVANCED HIV DISEASE.

Vermund, Sten H.*; Kelley, K.F.; Burk, R.D.; Feingold, A.R.; Schreiber, K.; Munk, G.; Schrager, L.K.*; Klein, R.S. Montefiore Med Ctr/Albert Einstein College of Med, Bronx NY, USA (*now at DAIDS, NIAID, Bethesda MD, USA).

Objective: To test the hypothesis that advanced stage of HIV infection among women co-infected with HPV is associated with increased risk of cervical SIL.
Methods: 132 women at high risk for HIV and with known HIV antibody status underwent a gynecologic examination, STD screen, Pap smear, physical exam, & standardized questionnaire. Cervicovaginal cells collected by lavage were tested for HPV by Southern blot. Chi square, Mantel-Haenszel techniques and unconditional logistic regression were used for stratum-specific analyses. Women with asymptomatic (asx) HIV infection, symptomatic (sx) for HIV infection, or without HIV infection were compared.
Results: HIV+ sx women had the highest rates of HPV ($p<.05$) and the strongest association of HPV and SIL, even when controlling for age, race, sociodemographic characteristics, and presence of other STDs:

	Sx HIV+		Asx HIV+		HIV-		
	SIL	No SIL	SIL	No SIL	SIL	No SIL	
HPV+	13	11	6	5	3	13	
HPV-	0	12	3	22	4	40	**estimated, add
	O.R.=29**		O.R.=8.8		O.R.=2.3		0.5 each cell

[Mantel-Haenszel summary O.R. = 7.0, 95% c.i.: 1.9, 17]
Conclusion: This study suggests that women with sx HIV infection and HPV are at highest risk for cervical SIL; asx HIV+ women are at somewhat lower risk, but still significantly higher risk than HIV- women. No association between HIV and cervical SIL was demonstrated in the absence of detectable HPV.

S.B.518 CERVICAL INTRAEPITHELIAL NEOPLASIA IN HIV SERO POSITIVE AND HIV SERO NEGATIVE DRUG ABUSERS.

Pomeroy Louise *, Boylan, P.**; Murphy, J.***;Mulcahy,F.M.****
Department of Genito Urinary Medicine, St. James's Hospital,Dublin 8.Ireland.

Objective: To ascertain the incidence of Cervical Intraepithelial Neoplasia (CIN) amongst a cohort of HIV positive intravenous drug abusers (IVDA), attending the Genito Urinary Medical Clinic, St. James's Hospital, Dublin, and to compare it with the incidence of CIN in a cohort group of HIV sero negative IVDA.
Methods: 50 HIV positive women attending the HIV clinic St. James's Hospital had cervical cytology performed between 1987-1989. All of these were either current or previous IVDA. Those showing evidence of CIN underwent colposcopy, biopsy and appropriate treatment. Each patient was clinically staged according to the Centre for Disease Control, Atlanta Scheme. Results were compared to those of a similar, but HIV negative group of IVDA.
Results: 49 HIV positive patients underwent cervical cytology. In all cases the risk factor for acquisition of HIV was IVDA. 39 patients (80%) had CIN, 13 CIN 1, 17 CIN 11 and 9 CIN 111. These results will be compared to the incidence of CIN in HIV sero negative IVDA.
Conclusion: We confirm that HIV positivity is a risk factor in the development of CIN in IVDA. Clinical staging of HIV disease is discussed in relation to incidence of CIN and response to standard therapy in these patients assessed.

S.B.519 Increased Frequency of Cervical Dysplasia/Neoplasia in HIV-Infected Women is Related to the Extent of Immunosuppression

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A group of 111 HIV-infected women, 84 with a history of injecting drugs (IDU), has been regularly controlled for cytology of the uterine cervix and for impairment of the immune system. The cytological observations are compared with findings in 76 female IDU's negative for HIV-antibodies and in a group of 526 women from the average outpatient population of the hospital. Cervical dysplasia/neoplasia including 5 cases of invasive carcinoma was seen in 41% of the HIV-infected patients. In HIV-negative IDU's dysplasia/neoplasia was seen in 9% and in the sample from outpatients in 4%, including two cases of invasive carcinoma ($p<0.01$).
Cytological features attributable to infection with human papillomavirus (HPV) were observed twice as often in women with HIV-infection than in HIV-negative female IDU's and more than 4 times as often than in the average outpatient population ($p<0.01$).
Frequency and severity of dysplasia appear to increase with diminishing numbers of $CD4^+$-lymphocytes and correlated significantly ($p<0.01$) with a loss of blastogenic response to PHA, PWM and tetanus toxoid. These results suggest an increased risk for developing HPV-related dysplasia of the uterine cervix in women with HIV-infection which in turn depends on the extent of immunosuppression.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.520 OCCURRENCE OF MALIGNANCY IN THE SETTING OF ANOGENITAL WARTS IN THE GAY MALE POPULATION

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Objective: The occurrence of carcinomatous lesions in young males presenting with anogenital condylomata was formerly perceived to be an unusual lesion. This concept has been challenged in the setting of the immunocompromised patient. This study was designed to determine the occurrence of malignant anal lesions in the immunocompromised male population versus the non-immunocompromised group.
Methods: A retrospective review of 67 charts of patients with venereal warts was made, comparing the occurrence of an atypical malignant transformation to the typical presentation of benign neoplasia in the HIV positive-versus-negative patient subgroups, using histopathologic criteria. The variance of rates of malignancy in the above groups was analyzed via chi-square test.
Results: Severe dysplasia, carcinoma-in-situ, and squamous cell carcinoma occurred exclusively in the HIV positive group. Only one case of moderate dysplasia was found in the HIV negative group. These populations were determined to be statistically different at the $p < .02$ level of confidence. Seventeen percent of the HIV positive patients presented with carcinoma-in-situ or invasive carcinoma.
Conclusion: HIV positive males have a high incidence of anal squamous carcinoma when presenting with "typical" venereal warts. This rate diverges highly from that in the non-wart, probably non-gay, setting which has previously had an extremely low incidence rate, occurring predominantly in females and almost exclusively in the "sixth decade" of life.

Staging and Disease Markers

S.B.521 QUANTITATION OF HIV DNA AS A PREDICTOR OF THE DISEASE

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Objective: To apply the amount of HIV DNA in CD4+ T lymphocytes to a new virological marker, we developed a method to quantitate the DNA amplified by the polymerase chain reaction. Methods: Thirty cycles of amplification were performed using 3 primer pairs (GAG, ENV, LTR). The resultant reaction mixtures were hybridized with ^{32}P labeled probes in liquid solution and were subjected to 10 % PAGE. The cpm of the corresponding band was measeured by a beta-scanner and compared with values from the standard curve. Nineteen Japanease hemophiliacs (5 patients with AIDS treated with AZT (group A), 7 asymptomatic carrier (AC) treated with AZT (group B), 7 AC without any treatment (group C)) were examined. All of them were infected with HIV between 1982 and 1986. Results: HIV DNA was detected in all of the patients tested. The viral burden of group A was significantly higher than that of group B ($p<0.05$; Wilcoxson rank sum test), while there was no differences between group B and C. In group C, the number of CD4+ T lymphocytes was inversely related to the viral burden ($p<0.05$; Spearman's rank correlation coefficient). Conclusion: Quantitation of proviral levels may serve as a new virological marker and a predictor of progress of the disease.

S.B.522 LABORATORY ASSAYS FOR HIV: LACK OF CONCORDANCE BETWEEN HIV NEUTRALIZING ANTIBODY (NA) AND IMMUNOPEROXIDASE (IP) TITERS

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It has been suggested that an immunoperoxidase (IP) method based on fixed HIV-infected reagent cells was an accurate predictor for neutralizing antibody (NA) titers. This claim was important because the IP method is much more rapid, simple, and practical in clinical studies. We are engaged in a study of passive immunotherapy in AIDS, in which donor selection is partly dependent on high titer HIV antibody. In the current study, we examined HIV antibody titers by both NA and IP techniques. Serum of 64 donors solicited for preparation of HIV immune globulin was inactivated at 56°C for 30 minutes. NA were assayed after dilution in conditioned infective medium containing 100 tissue culture 50% infective doses of HIV with 8×10^5 H9 cells in 150 ul. The titer was the highest concentration of serum in which reverse transcriptase assay was less than three times the control mean after 14 days incubation. IP assays were conducted by the method of Karpas, in which doubling dilutions of inactivated serum were incubated for 1 hour at 37°C in wells containing 10^5 acetone-fixed T-cells, washed, and developed with Protein A-horseradish peroxidase and AEC peroxide. There was no detectable statistical relationship between the results of the two assays, although most sera had moderately high titers using both methods. This observation suggests that immunoperoxidase assay was a poor predictor of NA titer. The most striking observations were in two samples, one of which had high NA and low IP titers, and the other which had the converse findings. Our results suggest that the convenient, rapid and inexpensive IP assays can not be used to reliably predict NA titers.

S.B.523 PROGRESSION OF HIV INFECTION AND CHANGES IN THE LIPID MEMBRANE STRUCTURE OF CD4(+) CELLS.

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Objective: High content of unsaturated fatty acids (FAS) in membrane lipids leads to an increase in cell membrane fluidity and affects membrane integrity. Recently, we showed that infecting CD4(+) cell lines with HIV resulted in an increase in the concentration of linoleic acid (18:2) (LA) in the membrane of the cells. The aim of the present work was to test whether HIV infected subjects demonstrate a similar change in the composition of fatty acid residues in the membrane of their CD4(+) lymphocytes.
Methods: Male subjects (n=20) were divided into the following four equal groups: 1. Control, HIV (-) heterosexuals, 2. Control, HIV (-) homosexuals, 3) HIV (+) asymptomatic homosexuals with CD4(+) count of $>500/mm^3$ and 4) HIV (+) asymptomatic homosexuals with CD4(+) count of $<500/mm^3$. CD4(+) cells were separated from peripheral blood by means of mouse anti human-CD4- MoAbs bound to magnetic beads. The cells were extracted according to the Folch method. The lipids were hydrolysed and transmethylated to produce FA methyl esters and analysed by gas chromatography. The concentrations of the following FAs were measured: 1. Palmitic (16:0), 2. Stearic (18:0), 3. Oleic (18:1), 4. LA, 5. Arachidonic (20:4), and 6. Docosahexaenoic (22:6).
Results: The measurements of FA concentrations in cell membranes showed that, except for LA, no difference was found among the corresponding FAs of the four groups of patients. LA was undetectable in groups 1,2 and 3. A significant peak of LA at the level of 610+/-170 pmol/10^6 cells ($p<0.001$, Scheffe's method) characterized the fourth group.
Conclusion: The present results suggest that a rise in the concentration of LA in CD4 cells precedes and is associated with progression of HIV infection.

S.B.524

INTENSIVE LYMPHOCYTE MONITORING IN HIV-SEROPOSITIVE PERSONS.

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Objective: Surrogate markers such as CD4 lymphocyte counts have become important indicators of HIV-disease progression. We evaluated HIV+ persons to assess the variability of CD4 counts over short time intervals.

Methods: 36 HIV+ persons (13 asymptomatic, 11 ARC, 12 AIDS) underwent intensive immunologic evaluations. 404 lymphocyte subsets were drawn over 4-24 weeks. We evaluated the intraperson change over 2 month intervals ($\bar{x}$ = 6 subsets/interval). Standard flow cytometry techniques were used.

Results: The absolute CD4 counts varied widely during the 2 month intervals. The mean per patient change in CD4 counts were: asymptomatic 375 (166-699), ARC 159 (57-461), and AIDS 58 (11-250). The absolute CD4 count was much more variable than the measured %CD4.

	Mean coefficient of variation	
	%CD4	CD4 count
Asymptomatic	9.3%	19.5%
ARC	12.2%	26.0%
AIDS	36.0%	48.8%

A comparison of the CV of paired samples indicated that CD4 counts were 2.1 fold more variable than the %CD4. The short-term changes in CD4 counts predominantly reflected changes in white blood cell and total lymphocytes.

Conclusion: The results of a single CD4 count may be quite misleading given the degree of variability of this measure among HIV+ persons. Short-term changes in CD4 count primarily reflect changes in WBC or lymphocyte counts; the proportion of CD4 cells (%CD4) was subject to less variability. Clinical trials and therapeutic decisions should consider expanded use of %CD4 as a surrogate marker.

S.B.525

SHORT TERM VARIABILITY IN MEASUREMENT OF LYMPHOCYTE SUBSETS IN SERIAL DETERMINATION ON ASYMPTOMATIC HIS SEROPOSITIVE MEN.

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Objective: Serially measured T cell subset counts are widely used to assess staging and progression of HIV immune disease in asymptomatic seropositive people. We wish to demonstrate the comparative variability of measured and derived parameters in close serial determinations.

Method: Forty-two HIV seropositive asymptomatic men had 3 or 4 weekly determinations of absolute lymphocyte counts (ALC), percent CD3, CD4 and CD8 cells, with calculation of absolute CD3, CD4 and CD8 cell counts and CD4:CD8 ratio. Mean, adjusted standard error, coefficients of variation (CV) and reliability coefficients (RC) for intra-patient variability was calculated.

Results: Adjusted CV's were greater for each calculated absolute cell count and ratio, than corresponding direct percent measure:

	ALC	CD3%	CD4%	CD8%	CD3	CD4	CD8	CDA:CD8
CV%	1.6	1.0	2.3	1.8	2.2	2.8	2.3	3.4
RC	0.93	0.81	0.86	0.81	0.91	0.84	0.93	0.84

Conclusion: Directly measured percent values of lymphocyte subsets show less short-term physiologic or systematic variation, in staging of HIV related immune disease. Clinical assessment of asymptomatic HIV related immune disease progression with serial measurements of lymphocyte subsets should compare percentage measurements rather than absolute subset counts.

S.B.526

RELATIONSHIP BETWEEN OPPORTUNISTIC INFECTIONS (OI) AND MALIGNANCY (OM) IN HIV PATIENTS AND CD4 LYMPHOCYTE NUMBER.

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OBJECTIVE: To define the order of HIV related OIs and OMs encountered in HIV+ individuals based on CD4 lymphocyte numbers.

METHODS: Charts were reviewed for 181 patients who experienced 265 AIDS defining illnesses (ADI), and had T lymphcotye subset analyses performed within 2 months prior to the diagnosis or one month after the diagnosis. Also included were 22 patients with oral candidiasis and 20 asymptomatic patients.

RESULTS: One hundred and forty-nine events were index ADIs and 138 were subsequent ADIs. Significant differences exist in the CD4 counts between the 12 categories of ADIs examined.

OIs (n=10) and OMs (n=2) can be grouped into 5 general categories. 1) Asymptomatic CD4 >500/mm^3, 2) oral candidiasis and TB 250-500/mm^3, 3) KS lymphoma, cryptosporidiosis 150-200/mm^3, 4) PCP, toxoplasmosis, cryptococcal infection, MAC, HSV, oesophageal candidiasis 75-125/mm^3, 5) CMV 50/mm^3. Use of zidovudine did not influence the CD4 number at which the common OIs developed.

CONCLUSION: Our data generally concur with clinical impressions and will provide a basis for interim treatment and chemoprophylaxis recommendations.

S.B.527

ABSOLUTE LYMPHOCYTE COUNT AS A SCREEN FOR CD4 COUNTS

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Objective: Recent studies have shown that PCP prophylaxis is indicated when the CD4 count is less than 200, and that HIV infected individuals might benefit from zidovudine therapy if initiated when the CD4 count is below 500. CD4 assays are expensive. We sought an absolute lymphocyte count (LYM) above which the CD4 count would reliably be above either 200 or 500, and thus eliminate the need for a CD4 determination to help make these decisions.

Methods: HIV infected individuals presenting for entry into ACTG protocols and 6 months later had a history, physical exam, CBC with electronic differential and CD4/CD8 counts by 2 color flow cytometry per ACTG protocol. The LYM was paired with its corresponding CD4 count in 197 asymptomatic patients and 85 zidovudine recipients.

Results: Sixty-eight percent (134) of the asymptomatic patients had LYM above 1500. Only 2 of these patients had CD4 less than 200. Similarly, of 85 non-AIDS patients who were receiving zidovudine for over 6 months, 60% (51) had LYM over 1500 and none of these patients had CD4 counts less than 200. These results are shown in the following 2 by 2 table:

197 Asymptomatic Patients	Lym≤1500	Lym>1500	Sum
CD4<200	14	2	16
CD4>200	49	132	181
Sum	63	134	197

85 AZT non-AIDS patients	Lym≤1500	Lym>1500	Sum
CD4<200	16	0	16
CD4>200	18	51	69
Sum	34	51	85

Conclusion: In asymptomatic HIV infected patients and non-AIDS patients on zidovudine, if the LYM is over 1500, the CD4 count is reliably above 200, and CD4 testing may not be necessary. While no useful LYM could be found that would reliably indicate a CD4 count over 500, in asymptomatic patients if the LYM is less than 1450, the CD4 count is reliably under 500. WBC, platelet count, and hemoglobin added no further discrimination. (Supported by USPHS grant AI25924)

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.528 CD8 LYMPHOCYTE SUBSETS PROVIDE PROGNOSTIC MEASURES OF HIV DISEASE PROGRESSION

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The primary pathogenetic event in HIV infection appears to be the depletion of CD4 lymphocytes. However, the CD8 cell compartment has been implicated as a measure of host response to HIV infection. In this study we report the results of an analysis of the display of CD8 activation antigens correlating CDC clinical classification. A cohort of 103 Seropositive (confirmed by Western Blot) individuals (CDC Class II-IV), 14 High Risk Seronegative (by Western Blot) individuals and 38 healthy subjects were studied using two-color flow cytometric analysis. All data were obtained from lysed whole blood. Samples were stained with LeucoGATE™, CD14 (Leu M3)/CD45(HLe-1), CD4/CD8 (Leu 3/Leu 2), CD8/CD38 (Leu 2/Leu 17), CD8/HLA-DR, and CD8/CD57 (Leu 2/Leu 7). All data was acquired using LeucoGATE™, SimulSET™ software and a FACStar™ flow cytometer.

MEAN PERCENT POSITIVE

CLASSIFICATION	N	$CD4^+$	$CD8^+$	CD4/CD8	$CD8^+/CD38^+$	$CD8^+/DR^+$	$CD8^+/CD57^+$
Normal Control	38	45.0	33.0	1.5	11.7	4.5	8.1
High Risk Seronegative	14	38.1	39.9	1.0	13.6	8.4	15.3
Asymptomatic	54	26.1	57.1	0.5	29.5	23.4	20.7
LAS	17	20.6	61.3	0.4	36.8	29.8	22.5
ARC	21	14.7	67.1	0.2	44.2	30.9	23.4
AIDS	11	12.2	68.5	0.2	44.4	29.8	29.4

Our observations demonstrate that CD8/CD38 coexpression increases with HIV disease progression. Increased HLA-DR expression is an early event and that maximal levels are seen by the ARC stage of clinical disease. Progressive increase for CD8/CD57 double positive cells were noted with clinical progression. The combination of these three activation markers allow for stratification of HIV infected patients based on the cellular immune response to HIV infection.

S.B.529 DISCRIMINATION OF CELLULAR CD8 EXPRESSION AND ASSIGNMENT TO T CELLS OR NK CELLS AFFECTS THE HELPER SUPPRESSOR RATIO IN NORMALS AND HIV INFECTED INDIVIDUALS

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The most common two color combination used to define cellular CD8 expression on human peripheral lymphocytes is CD4/CD8 which does not distinguish between T cell and NK cell CD8 expression.
In a study of 24 HIV seropositive individuals of all CDC clinical stages it was found that the cytotoxic/suppressor T cells can be clearly identified by the dual expression of CD8 and CD3. The expression of CD8 on non-T cell (NK cells) can also be readily identified and separated from $CD8^+$ T cells when using the CD3/CD8 combination. Our study indicates progressive loss of CD8 within the NK compartment during the course of HIV infection. Two patterns of CD8 expression were noted for T cells including both bright and dim populations; the former increases during HIV infection. An additional benefit of combining CD4 and CD3 was noted in that lymphocytes which coexpressed both antigens could be clearly separated from monocytes which express CD4 in low copy numbers Flow cytometric determination of a "true" T cell helper/suppressor ratio by means of pairing CD8 with CD3 and CD4 with CD3 provides a better measurement of the T cell compartment. It also allows assessment of changes in the expression of CD8 within the NK cell compartment during the course of HIV infection. Finally, the high level of variability of the $CD8^+$ NK cell compartment in HIV infected patients may in part explain the limited usefulness of the conventional CD4/CD8 ratio in evaluating these patients.

S.B.530 CD38 EXPRESSION ON T AND NK CELLS IN HIV INFECTED INDIVIDUALS USING THREE COLOR FLOW CYTOMETRY

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Two color analysis has previously shown that a progressive elevation in the number of double positive CD8/CD38 cells following HIV infection is correlated with the staging of the disease. Since these antigens are found on both NK and T cells, it is desirable to determine whether one or both of these cell lineages are affected. Direct labelling of EDTA anti-coagulated blood was accomplished by incubation with peridinyl-chlorophyll protein (PerCP) labelled anti Leu 4™ (CD3), Phycoerythrin (PE) labelled anti Leu 2a (CD8) and Fluorescein (FITC) labelled anti Leu 17 (CD38), or labelled isotype matched controls. Red cells were lysed with FACS lysing solution, and the residual fixed leucocytes analyzed on a FACScan™ flow cytometer. Data was collected in list mode for 2 light scatter and 3 fluorescence parameters. Using a scatter gate on lymphocytes set by LeucoGATE™ (CD45/CD14), CD3 positive and negative events were further analyzed by a second gate set on the PerCP histogram, with displays of the CD8 and CD38 cells as 2-parameter (FITC/PE) dot plots. Three fluorescent parameter studies demonstrate that there is an expansion in the number of T cells which express both CD8 and CD38 during the course of HIV infection. Additionally the surface density (copy number) of CD38 appears to be increased. These studies indicated that specific changes in the T cell compartment rather than the NK cell compartment are responsible for the previously noted increase in CD8 CD38 positive cells in progressive HIV infection.

S.B.531 IMMUNE ACTIVATION MARKERS PROGNOSTIC FOR AIDS PROGRESSION IN THE SAN FRANCISCO GENERAL HOSPITAL COHORT.

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Objective: To compare the prognostic utility of the immune activation (IA) markers Beta-2 microglobulin (B_2M), neopterin (Neop), and soluble CD8 (SCD8) in combination with CD4 lymphocyte count and HIV p24 antigen (p24ag) or p24 antibody (p24ab) in predicting AIDS.
Methods: Progression to AIDS was studied prospectively over 36 months in 210 HIV positive untreated homosexual men. Serological assays were performed on serum stored from 1984-85. We developed a trivariate model which categorizes a subject's level of AIDS risk by the number of tests abnormal out of three. Each trivariate model examined contained CD4 count, p24ag, and one IA marker. For each model progression rates stratified by the number of markers abnormal were compared.
Results: IA markers correlated highly with one another (.51-.61) and were strongly associated with progression to AIDS independent of CD4 count and p24ag. Using fewer than 3 markers assigns a small proportion of progressors a > 50% probability of AIDS. Depending on the IA marker included in the model, 78%-82% of 45 men progressing to AIDS were abnormal on 1 or more test.

ACTUARIAL 36-MO. PROGRESSION RATES TO AIDS (N PROGRESSING)

No. tests abnorm (of 3)	CD4<400,p24ag+ B_2M >3.5	CD4<400,p24ag+ Neop >14	CD4<400,p24ag+ SCD8 >1200
0	9% (10)	10% (10)	8% (8)
1	22% (10)	26% (12)	29% (15)
2-3	73% (25)	68% (23)	67% (22)

Conclusion: Regardless of which IA marker was included, the models gave similar progression rates among subjects stratified by the number of tests abnormal, although more men were identified at high risk by including B_2M and more at moderate risk by including SCD8. Counting the number of abnormalities among CD4 count, p24ag, and one IA marker, somewhat more than half of men progressing in 3 yrs can be classified at high risk of AIDS (67%-73% progression) and another quarter classified at moderate risk (22%-29% progression).

S.B.532

LONGITUDINAL ANALYSIS OF LABORATORY MARKERS DURING HIV INFECTION

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Objective: To evaluate changes in laboratory markers during the natural history of HIV disease.
Methods: Laboratory measurements including: mean $CD4^+$ T cells; median titer of antibody to p24, serum neopterin, and Beta-2 Microglobulin; and %p24 antigen positive were evaluated. The study population (San Francisco Men's Health Study) consisted of 32 seroconvertors and 389 HIV seropositives, 118 of whom developed AIDS during 4 years of follow-up.
Results:

	SEROCONVERTORS 6 MOS POST	SEROPREVALENT 1984	1988	INCIDENT AIDS 2 YR PRE	AT Dx
CD4+ (cells/ul)	725	721	496	450	200
NEOPTERIN(mg/ml)	2.1	3.0	3.4	3.6	5.5
B2M (mg/L)	2.2	2.4	2.8	3.[illegible]	5.5
p24 Ab(ln titer)	5.7	5.9	5.9	3.3	2.4
p24 Ag(%positive)	5.9%	10.4%	15.6%	39.0%	56.0%

In incident p24 antigen positives, only 24/65 (36%) had more than a 2 fold p24 antibody decline during follow-up.
Conclusions: $CD4^+$ T cells decline while Beta-2 Microglobulin and Neopterin increase with advancing HIV disease. In contrast, antibody to p24 remains relatively stable with lower initial titers in individuals who developed AIDS. Antibody decreases preceding the appearance of antigen were not usually observed.

S.B.533

THE SPECIFIC IMMUNE RESPONSE TO HIV AND IMMUNE SYSTEM ACTIVATION DEFINE THREE PATTERNS OF HIV DISEASE PROGRESSION

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Objective: To study the relationship between the specific immune response to HIV, represented by antibody to core protein (p24), and the degree of immune system activation, represented by serum neopterin, and HIV disease progression.
Methods: Neopterin concentration and p24 antibody titer were determined for initial serum samples of 238 seropositives in the San Francisco Men's Health Study. The results were divided at the median for each marker and related to the incidence of AIDS in each group during 4 years of follow-up.
Results: Independent of CD4, low p24 antibody with high neopterin was most predictive for the development of AIDS (61.2% incidence). Abnormal levels of one marker alone had an intermediate level of risk (33.3% incidence for neopterin and 34% for p24 antibody respectively). Patients with low neopterin and high p24 antibody titers, were least likely to develop AIDS (9.6% incidence).
Conclusion: We propose that these findings indicate two independent components of the pathophysiology of HIV disease: a variable strength of the specific immune response to HIV; and a variable degree of non-specific immune stimulation. Innate differences in these responses to HIV infection become evident prior to substantial CD4 decline or the development of clinical symptoms and predict the pattern of subsequent HIV disease.

S.B.534

PROGNOSTIC FACTORS FOR CLINICAL PROGRESSION AND IMMUNOLOGIC CHANGES IN ASYMPTOMATIC HIV-INFECTED PERSONS.

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Objectives: To determine predictors of the development of AIDS and of increasing slope in CD4+ cell counts in 1338 persons with asymptomatic HIV infection.
Methods: Regression methods were applied to the results of a double-blind clinical trial of the ACTG involving 1338 patients with asymptomatic HIV infection. Proportional hazards models were used to determine baseline predictors of the development of AIDS. Logistic regression models were used to determine baseline predictors of whether a participant's CD4 slope (estimated by linear regression of repeated CD4+ counts) is positive.
Results: Participants with lower baseline platelet counts (P=.01), detectable HIV p24 antigen (P=.002), and lower baseline CD4+ cell counts (P<.0001) had significantly higher rates or progression to AIDS. Baseline predictors of increasing CD4+ slopes included number of CD8 cells (P=.004), platelet count (P=.02), level of HIV p24 antigen (P=.01), and initial CD4 count (P=.003).
Conclusions: Except for number of initial CD8 cells, predictors of HIV progression are similar to those for changes in CD4 cells.

S.B.535

IMMUNOGLOBULINS (IgA) AND HIV INFECTION IN INTRAVENOUS DRUG USERS.

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Objective: To evaluate the usefulness of IgA level as prognostic marker for HIV infection and progression in a longitudinally study among current heroin abusers.
Methods: From June 1984 to May 1988, 374 (299 M,75 F) were included because acute organic diseases including AIDS or related conditions (200 patients) and detoxification (174).All of them accomplished an epidemological anamnesis related to risk practices and physical exam focused on HIV related signs;HIV Ab were analyzed by EIA and Western Blot.IgA (mgs/100) was determined by a nephelometric method.
Results: Mean age was 24.5±4.1 years and the length of addiction was 54.6±14.8 months.264 out of 374 (70.5) were HIV+. IgA levels were 242.2±114.7 in HIV- patients and 230.4±113 in HIV+ (pNS).IgA was not related to HIV clinical status (CDC criteria):IgA-Group II(n=63):235±94.3 ;IgA-Group III (n=133):226.6±106.8; IgA-Group IV(n=68):275.3±143.1 (pNS).
Conclusion: IgA levels are not correlate with HIV infection and clinical progression.Continous polyclonal hypereactivity of the B cells, inherent to parenteral drug habbit could mask the positive predictive value of IgA as prognostic marker for AIDS in chronic heroin abusers.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

S.B.536 ACHT/ß ENDORPHIN and ACHT/CORTISOL RATIO IN HIV HUMAN INFECTIONS : EARLY BIOLOGICAL MARKERS OF INFECTION IN SERONEGATIVE PARTNERS OF SEROPOSITIVE INDIVIDUALS.

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Objective : To study ß endorphin, ACHT, and Cortisol blood levels in 3 male homosexual groups : 1) AIDS patients, 2) seropositive asymptomatic individuals and 3) their seronegative partners.
Methods : 3 different male homosexual groups have been compared to heterosexual seronegative group (n=15) : full blown AIDS patients (n=19), seropositive asymptomatic individuals (n=15), and their seronegative partners (n=15). Daily evaluations of blood levels of ß endorphin, ACTH and cortisol (8 am-5pm) have been determined by radio-immunoassay. HIV infection has been evaluated in seronegative partners by PBL cultures and PCR. Data were analysed by both parametric and non parametric tests (Wilcoxon, Man and Withney).
Results : Both seropositive individuals and their seronegative partners show similar hormonal neuroendocrin patterns : a rise of plasmatic, ACTH/ß Endorphin ratio, N=0,69±0,41 ; S+ =0,42±0,3 S- =0,41±0,26 ; and loss of the normal ACTH/total Cortisol coupling. PCR was positive in some seronegative partners (4/15).
Conclusion : Neuroendocrinological disorders can be described in HIV infected individuals and in their seronegative sexual partners. These neurohormonal distubances might be related either to social behaviour or to HIV infection in seronegative partners may be raised. If this is proven, studies of ßendorphin ACTH and ACTH/cortisol ratio may reflect early signs of HIV infection ; the normalisation of these ratio may be one of the acceptable criterias of the efficiency of immune-vaccines or antiretroviral therapy.

S.B.537 DEFECT IN TISSUE FACTOR EXPRESSION IN MONOCYTES CORRELATES WITH DISEASE PROGRESSION IN PATIENTS WITH ARC AND AIDS

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Objective: To determine the usefulness of cytokine expression in monocytes as a surrogate marker for HIV disease progression.
Methods: Tumor necrosis factor (TNFα), interleukin 1-ß (IL-1ß) and tissue factor (TF) were evaluated in monocytes from HIV seropositive patients. RNA was extracted from monocytes with or without LPS stimulation, and hybridized with cDNA probes. Blood was evaluated for T4 cell counts; and plasma levels of p24 antigen, p24 antibody, and ß-2 microglobulin were determined by EIA.
Results: Steady state levels of TNFα, IL-1ß, and TF mRNA were low to undetectable in all monocytes before LPS stimulation. In contrast, LPS induced levels of TF mRNA were depressed in patients' monocytes, while TNFα and IL-1ß were "normal." Induced TF mRNA was reduced 66% in monocytes from AIDS patients, and 20% in ARC patients. The defect in TF expression did not correlate with the presence of HIV antigens or p24 antibodies in plasma. However, there was a significant correlation between T4 cell number and TF expression ($r=0.62$; $p<0.001$). Additionally, TF expression decreased as plasma levels of ß-2 microglobulin increased in symptomatic patients ($p<0.05$).
Conclusion: TF may provide an effective surrogate marker for monitoring the progression of HIV disease by signaling an alteration in monocyte functions.

S.B.538 HIV QUANTITATION PROCEDURES FOR VIROLOGIC END-POINTS IN CLINICAL TRIALS: RESULTS OF A MULTICENTER STUDY.

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OBJECTIVE: To evaluate new techniques for HIV end-point determinations to be used in various treatment protocols within a multicenter NIH clinical trials program.
METHODS: Forty-eight coded whole blood samples from normal donors and HIV-infected individuals were shipped to 11 AIDS Clinical Trials Units (ACTU) virology laboratories over a period of one year (4 samples per month). On two occasions, blood from HIV-infected patients was serial diluted with normal donor blood prior to shipment. Procedures that were evaluated included the polymerase chain reaction (PCR), dilution of PBMC in microculture tubes, dilution of plasma, and an indirect immunofluorescent flow cytometric method (lymphocyte p24-FCA). Results were compared to conventional HIV coculture performed by the same laboratory using the ACTG consensus protocol.
RESULTS & CONCLUSION: Initial results indicate that while plasma culture may provide virologic end-point data in clinical trials, its widespread applicability may be limited because fewer samples are culture positive. The PCR, when performed by a laboratory with quantitative capabilities, can be a powerful tool in assessing changes in HIV genomic content. This was appropriately documented with [illegible] samples that were serially diluted. Similarly, the microculture PBMC end-point dilution technique and the lymphocyte p24-FCA procedure also provided excellent quantitative data. However, each procedure is prone to technical errors. To control for this, consensus protocols are being developed. When carefully followed, precision will be improved and adoption by other virology laboratories can be readily accomplished.

S.B.539 PRODUCTIVE HIV INFECTION LEVELS IN THE COURSE OF ANTI-VIRAL THERAPIES.

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The amounts of HIV produced by unfrozen patient's mononuclear cells (MNCs), following lethal gamma-irradiation and co-cultivation with normal PHA-stimulated lymphocytes have been shown to monitor actual levels of productive HIV infection in the patient and to correlate with disease status (D. Mathez et al, 1990, submitted).

Radiation-Resistant HIV Expression Levels ex Vivo (R-HEV) significantly declined in blood MNCs from 18/20 patients within 3 months of AZT treatment (300mg x 4/d). In half AZT-treated patients, R-HEV levels had returned to pretreatment levels within 6 months. Similarly, R-HEV scores initially diminished in blood MNCs from 12 patients receiving AZT once-a-day (500mg) but had returned to baseline values in most patients after 6 months. Sequential R-HEV scores from patients receiving alpha-interferon, or component Q, or low dose AZT (100mg x 3), or DDI at either of 2 doses (2mg/kg/day or 10mg/kg/day), or AZT and DDI in combination in the same patient, will also be presented.

In conclusion : the monitoring of productive HIV infection levels by R-HEV demonstrates efficacy or inefficacy of anti-retrovirals within a few months of treatment, independently of clinical end-points and with each treated individual serving as his own control. In phase I - II studies, the system has also provided early guideline information on drug dosage and regimen.

S.B.540 WHICH HIV ANTIGEN EIA DO YOU USE ? YOUR THERAPUTIC AND CLINICAL EVALUATIONS MAY DEPEND UPON THE CHOICE.

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OBJECTIVE: To evaluate and compare commercially available HIV antigen EIA kits and assess their applicability in multicenter clinical trials.
METHODS: An experimental test specimen panel, consisting of normal human plasma spiked with either HIV viral lysate (DuPont) or affinity purified HIV p24 antigen (Abbott) at various concentrations (0 to 200 pg p24/mL) and HIV-infected patient plasma samples containing various concentrations of HIV antigen, was tested using HIV antigen EIA kits from five manufacturers: Abbott Laboratories, DuPont, Coulter Immunology, Cellular Products, and Pharmacia-ENI. HIV antigen EIA controls supplied by the Virology Reference Laboratory (VRL, NIH/NIAID/DAIDS) were run in each assay and used as the basis for comparison.
RESULTS: When comparing the results generated for the spiked samples (using the VRL viral lysate Reference Standard for the standard curve), it appeared that the Coulter and the Pharmacia-ENI were fairly similar assays. These two kits produced equivalent results and routinely resulted in HIV p24 antigen values that were 1.6 to 2.0 times higher in the specimens spiked with Abbott purified p24 antigen than in those spiked with the DuPont viral lysate. The Cellular Products and Abbott assays showed similar differences between the DuPont and Abbott spiked samples but the resultant picogram values were consistently lower for Cellular Products assay while the Abbott assay yielded values that were at least 2 times higher than the other assays. The DuPont assay did not show as extensive a disparity between the Abbott and DuPont spiked specimens. In contrast to the spiked samples, HIV-infected patient samples produced completely different comparisons. In this situation, the Pharmacia-ENI results were similar to those generated by the Cellular Products' kit, a pattern that was not seen with the spiked samples. The other assays varied considerably from each other.
CONCLUSION: The results generated indicate that not all commercial monoclonal HIV p24 antigen EIA kits are identical and that they are all different from the polyclonal Abbott HIV antigen EIA kit. Which set of values is a better predictor of therapeutic efficacy is being evaluated.

S.B.541 COMPARISON OF TWO SKIN TEST SYSTEMS FOR ANERGY IN INTRAVENOUS DRUG USERS ON METHADONE MAINTENANCE

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Objective: Recently, Multitest CMI (Merieux Institute) has been advocated to be superior to the inexpensive single antigen skin test when screening for skin reactivity/anergy. This study was designed to determine both the necessity of, and the most cost-effective method of skin testing for anergy in association with tuberculin screening of intravenous drug users (IVDA's) in drug treatment, in a high HIV seroprevalence area.
Methods: 400 consecutive methadone maintenance (MM) patients in Newark, N.J. consented to skin testing. The Multitest CMI was placed on one arm and a candida antigen (0.1 cc 1:10 dilution of Dermatophyton ("O") and a 5TU PPD were placed on the other arm. HIV testing was concomitantly performed. Patients with negative candida antigen skin tests were retested with mumps and tetanus antigens.
Results: 1) Three subjects (.75%) were found to be anergic on both the Multitest CMI and candida skin tests. 2) Multitest CMI was not more sensitive than candida antigen and did not exhibit any advantage over single antigen testing. 3) Additional single antigens did not improve the sensitivity of either candida alone or the Multitest CMI.
Conclusions: 1) The rate of anergy in IVDA's on MM was low. 2) The Multitest CMI did not prove to be superior to the single candida antigen as a screening tool. 3) Because of the potential for missing TB infection in IVDA's an inexpensive candida skin antigen test should be used, when screening for TB in a high HIV seroprevalence population.

S.B.542 HIV-1 REPLICATIVE ACTIVITY IN HEMOPHILIAC PATIENTS: ROLE IN CLINICAL PROGRESSION AND EFFECTS OF ZIDOVUDINE TREATMENT.

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OBJECTIVE: To study the clinical course of HIV-1 infection in relation to viral replicative activity and modifications in the natural history induced by Zidovudine treatment in a group of asymptomatic infected hemophiliacs.
METHODS:31 infected hemophiliacs belonging to the class II and III CDC(24 with hemophilia A,6 with hemophilia B,1 with Von Willebrand D.s.,means age 23 years CD4 cells count within 100-400/ul)were seen every three months over a period of 18 months and HIV isolation from PMCs was attempted for each patient. Nine subjects were enrolled in a placebo-controlled AZT trial.
RESULTS:At baseline 16% of pts. had positive viral culture(ISOL+).The means of CD4 % was 22%(24% for ISOL-,15% for ISOL+);CD4 cells absolute number was 276.4 (292 for ISOL-,193 for ISOL+).After one year untreated patients showed an increased HIV-1 isolation rate(38%)while among treated subjects we observed an inhibition or a delay of culture positivity in almost all cases.CD4 cells were 339/ul(19%)for treated and 269/ul(18%)for untreated subjects.
CONCLUSIONS:Our preliminary results suggest that.1)clinical and immunological deterioration in hemophiliacs is related to replicative activity of HIV-1. 2) Zidovudine treatment in the early stages of HIV-1 infection can effectively inhibit or reduce viral replication thus allowing a slower progression of the disease.

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TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

Determinants of Risk Behavior: Drug Users (cont. from Friday)

S.C.543 RISK FACTORS FOR SHOOTING GALLERY ATTENDANCE AMONG HETEROSEXUAL MALE INTRAVENOUS DRUG USERS IN BALTIMORE.

Celentano, David D.;* Vlahov, D.; Cohn, S.; Anthony, J.C.; Nelson, K.E. The ALIVE Study, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, MD, USA.

Objective: The identification of sociodemographic, drug use behaviors, and risk factors for attendance at shooting galleries among heterosexual male IVDUs and the elucidation of their role in HIV-1 prevalent infection.
Methods: Information on risk factors for HIV-1 infection was obtained from a sample of 1908 heterosexual male currently active IVDU. in Baltimore who joined a natural history study of HIV-1 infection in IVDUs (the ALIVE Study); history of recent (past 6 months) and past use of shooting galleries, demonstrated to be a risk factor for HIV-1 infection (OR=1.7 and 2.3, respectively), was analyzed to assess risks for this behavior.
Results: Among 1908 male IVDUs, 34.3% reported recent use of shooting galleries (SG), 20.4% reported a history of SG use but ceased going, and 45.3% denied use of SG in the prior ten years. Compared to IVDUs with no SG use, risk factors associated ($p < 0.05$) with recent use of SG on univariate and multivariate logistic analysis included: minority racial/ethnic grouping, low socioeconomic status, prior involvement with the criminal justice system, daily intravenous drug use, and IVDU sexual partners. Characteristics of those who ceased SG use were similar to those who persisted in SG use except that recent users were more likely ($p < 0.05$) to share needles and have less education.
Conclusions: A variety of factors may contribute to use of shooting galleries, a known risk behavior for HIV-1 acquisition. SG users differ significantly from non-users although they are similar to past users.

S.C.544 EFFECTS OF SAMPLING FRAME ON SUSPECTED RISK FACTORS FOR HIV-1 ANTIBODY AMONG IV DRUG USERS

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Objective: To compare a profile of risk factor relationships for HIV-1 antibody obtained by studying IV drug users (IVDUs) currently enrolled in drug abuse treatment programs to a corresponding profile from those not enrolled.
Methods: A total of 1629 IVDUs volunteered for interviews, serologic screening and counseling at an independent study clinic, following recruitment by extensive community outreach for a natural history study of HIV. We used logistic regression to estimate risk factor relationships for treated and untreated IVDUs. Factor-treatment interactions tested for differences in degree of association between HIV seropositivity and each factor.
Results:

N (% HIV+):	Drug Tx 274 (27.4%)	Not Drug Tx 1355 (24.4%)	p-value for
Factor	OR (95% CI)	OR (95% CI)	interaction
Black	10.29(2.43,43.62)	2.93 (1.77,4.86)	0.10
Age < 35 yrs	1.31(0.77, 2.24)	0.99 (0.77,1.28)	0.42
Inject before 1982	0.76(0.31, 1.23)	1.14 (0.86,1.52)	0.12
Inject ≥ 1/day*	1.26(0.74, 2.15)	1.36 (1.06,2.24)	0.70
Shooting gall. use*	1.58(0.90, 2.76)	1.37 (1.06,1.77)	0.73

(*Last six months)
Conclusion: Though subject to widely appreciated limitations, these preliminary data indicate that estimates of odds ratios for HIV-1 correlates were similar for treated vs. untreated IVDUs.

S.C.545 ETHNIC DIFFERENCES IN HIV KNOWLEDGE AND HEALTH BELIEFS IN NYC IVDUS.

Goodloe, Linda P.; Tross, S.; Abdul-Quader, A.S.; Des Jarlais, D.C.; Rosenblum, A. Narcotic and Drug Research, Inc., New York, NY. USA.

Objective: To examine ethnic differences in AIDS knowledge and health beliefs in NYC IVDUs.
Methods: IVDUs, contacted by street outreach workers on the Lower East Side of NYC, were interviewed about HIV knowledge and health beliefs. HIV knowledge was assessed on open-ended questions.
Results: 544 IVDUs (40% white, 25% black, 35% Hispanic; 69% male, 31% female) were interviewed. HIV Knowledge: Whites spontaneously named a greater number of AIDS symptoms than Blacks or Hispanics ($p < .001$). HIV Health Beliefs: Blacks and Hispanics were more likely than whites to believe someone infected with HIV would eventually get AIDS ($p < .001$). Blacks were less likely than whites to believe they had been exposed to HIV ($p < .01$). Hispanics were more likely than whites or Blacks to claim that if they themselves were infected with HIV they would be able to avoid developing AIDS ($p < .001$). Taken together, this combination of greater perceived severity and greater perceived self-efficacy in the Hispanics may be viewed as the "optimistic bias" described by Weinstein in health belief studies.
Conclusions: Ethnic differences were obtained in perceived severity of HIV infection, perceived HIV susceptibility, and perceived self-efficacy to avoid AIDS. The HIV health beliefs of both Black and, especially Hispanic IVDUs were distinguished from those of the white IVDUs by their greater "optimistic bias". This optimism is a positive indication for targeted HIV prevention programs with IVDUs of color.

S.C.546 Condom Use Among Heterosexually Active Street Recruited IVDU's in New York City

Abu S. Abdul-Quader*; Tross S*; Des Jarlais DC**
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Objective: Previous research among IVDU's has shown that sexual risk reduction often lags behind drug use risk reduction. This research reports on condom use at baseline and follow-up on a sample of street recruited IVDU's on the lower east side of Manhattan.
Methods: 208 heterosexually active IVDU's were interviewed by ex-IVDU outreach workers, at baseline (T1) and at a 4-month interval (T2) to assess use of condoms. As part of AIDS prevention outreach activities, education materials and condoms were distributed. Condom use refers to average monthly use during the previous year (T1) or during follow-up interval (T2). Subjects were divided into two groups: those who never used condoms and those used condoms some or all of the time.
Results: Frequency of some condom use significantly increased from T1 (58% of the subjects) to T2 (69%) ($p<.01$, McNemar's Chi-square test). 50% of the sample used condoms some or all of the time at both T1 and T2. This represents 85% of the sub-sample ($n=120$) using condoms at T1. Forty-five percent of T1 non-users initiated condom use by T2. Subjects with more than one partner at T1 were more likely to use condoms at T2 than subjects with only one partner at T1 ($p<.005$). Sex, ethnicity, age, years of injection, drug treatment status and homelessness were not associated with T2 condom use.
Conclusion: In IVDU's, sexual risk reduction may be becoming more widespread. In a sample of street recruited NYC IVDU's, condom use significantly increased over a 4 month period. One-half of the heterosexually active sample used condoms some or all of the time at T1 and T2. This may, in part, be due to condom distribution that was part of an AIDS prevention outreach program.

S.C.547 PERSISTENT SEXUAL RISK BEHAVIOR AMONG HETEROSEXUAL IVDU PARTNERS REGARDLESS OF HIV ANTIBODY STATUS

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Objective: To assess whether antibody discordant couples report more safer-sex behavior than antibody concordant couples.
Methods: Twenty-three heterosexual couples of parenteral drug users presented to our study. Subjects were adults, mainly of Afro-American or Latin-American background, and from a deprived socioeconomic level. They agreed to blood testing and interviewing. The results of ELISA and Western Blot assays were use to determine four subgroups:

		MALES -	MALES +
FEMALES	+	A, N=6	B, N=9
	-	C, N=5	D, N=3

Each subject's sexual behavior during the six months prior to the interview was evaluated by means of the Sexual Risk Behavior Assessment Schedule (SERBAS; Meyer-Bahlburg et al., 1988). We analyzed the response to those questions which explored unprotected peno-vaginal and peno-anal intercourse.
Results: 22 out of 23 couples reported peno-vaginal intercourse between 88 to 98% of the time. Of those occasions, concordant couples reported condom use 18% of the time, while males in the discordant couples reported condom use 4% of the time and women 18% of the time. (Discrepancies in self reports between males and females may be due to multiple partners or errors in recall.) The incidence of peno-anal intercourse was low with no condom use reported by women.
Conclusion: This initial data seem to indicate that sexual behavior which involves high risk for HIV transmission continues to occur among heterosexual couples of intravenous drug users. It also indicates that those couples where only one member is HIV antibody positive are not more likely to protect themselves than those couples in which both members have same serostatus.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.548 PEER CULTURE AND RISK REDUCTION AMONG STREET IV DRUG USERS

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Objective. To analyze the influence of IV drug user (IVDU) peer culture on drug and sexual risk reduction. The specific focus is whether risk reduction varies according to whether IVDUs talk about AIDS with IVDU and/or non-IVDU peers.
Methods. IVDUs (N=1,169) were recruited through street outreach in New York City in 1988 and 1989. The sample was 39% Black, 48% Hispanic, 13% White, and 73% male; mean age was 34. Risk reduction variables include the percent of times that subjects used bleach, new needles, needles or syringes in sterile wrappers they used only once, and condoms. Questions determined which relatives and friends of subjects were and were not IVDUs and whether subjects had discussed AIDS with them. Reported results are statistically significant at the .05 level by analysis of variance .
Results: Fully 46% of subjects discussed AIDS with both IVDUs and non-IVDUs, 19% only with IVDUs, 22% only with non-IVDUs, and 13% with neither Those who discussed AIDS only with IVDUs used bleach 21% of the time while those who discussed AIDS with both used bleach 29% of the time. New needles were used 53% of the time by those who discussed AIDS only with IVDUs compared to 62% of the time for those who discussed AIDS only with non-IVDUs. Using needles from sterile wrappers only once was done 16% of the time by those discussing AIDS only with IVDUs compared to 27% of the time for those who discussed AIDS only with non-IVDUs. Condom use was not significantly related to discussing AIDS with any of the groups
Conclusion: Two-thirds of IVDUs talk about AIDS with non-IVDUs. Such talk increases somewhat the tendency to safer injection practices. IVDUs who discuss AIDS only with other IVDUs appear to engage in less risk reduction. Thus peer culture, as embodied in discussing AIDS, affects drug-related risk reduction. Interventions to affect the frequency and content of IVDU discussions with non-IVDUs and to provide skills training to make such discussions more effective should be developed.

S.C.549 SOCIAL NETWORK CHARACTERISTICS AND AIDS RISK FACTORS AMONG INTRAVENOUS DRUG USERS IN PHILADELPHIA

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Objective: To describe the social networks of intravenous drug users (IVDUs) and examine the relationships between network characteristics and AIDS risk factors.
Methods: Interviews and blood tests were conducted with 155 IVDUs (a random sample of 113 in-treatment (IT) and 42 not-in-treatment (NIT)). Along with background, health, addiction, risk, and related data, respondents described, by individuals, their close (focal) social networks in terms of relationships, sex, age, communication, drug discussion, satisfaction, and influence. A risk-stratified, probabilistic sub-sample of 32 black, male, seronegative IVDUs (age 18-45) also received a more detailed network interview. Uniquely, we believe, all available adult network referrals (persons mentioned) by this sub-sample are being interviewed ($\bar{x}$=5.3 refs./resp.).
Results: Preliminary results show differences between IT and NIT groups in mean network size (4.2-3.8), mean satisfaction with network relations (p=.02), mean network influence received (p=.09), and other network characteristics. For the total group (155), smaller network size was associated with greater felt likelihood of developing AIDS (p=.08) and more frequent drug injection (p=.06). Less network satisfaction was also associated with more frequent drug injection (p=.01).
Conclusion: Initial network characteristics seem associated with AIDS expectations and risk behaviors. Such data suggest the possibility of useful network interventions to reduce high risk behavior. We believe that this is the first IVDU network analysis based on interviews with all referrals.

S.C.550 PSYCHIATRIC SYMPTOMS SEROPOSITIVITY AND HIGH RISK BEHAVIORS AMONG INTRAVENOUS DRUG ABUSERS IN METHADONE TREATMENT

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Objective: To examine the relationship between psychiatric status and behaviors associated with the transmission of HIV among intravenous drug abusers--needle sharing and unprotected sexual contact.
Methods: As the first step in a longitudinal study, one hundred forty eight methadone patients were randomly selected and assessed on a range of demographic, behavioral, drug use, and psychological variables prior to HIV testing. All subjects had a history of intravenous opiate abuse.
Results: These subjects had an average age of 40 yrs. and 69% were male. Thirty percent were white; 60% black; and 7% hispanic. These patients had been in treatment for an average of 36 months. With regard to high risk behaviors, 36% reported having shared needles during the six months prior to assessment and only 17% reported using condoms regularly. Thirteen subjects (8.8%) tested positive for HIV. The results of analyses directed at understanding the role of psychiatric symptoms confirmed our earlier findings from other samples of methadone patients. Significantly elevated psychiatric symptoms were found for those who had recently engaged in needle sharing. Significant differences in symptom levels were also found when these subjects were compared based upon their level of risk resulting from unprotected sexual contact. Also, those who subsequently tested positive for HIV reported higher symptom levels. Other variables associated with high risk behaviors included length of time in treatment, gender, and benzodiazapine use. When tested via discriminant function analysis (DFA) psychiatric symptoms were found to account for the greatest amount of variance in high risk behaviors.
Conclusions: These data suggest that psychological factors may play an important role in the maintenance of behaviors which transmit HIV among IVDUs. Prevention and intervention activities with this population must be designed with an awareness of the potential role of psychiatric factors.

S.C.551 A COMPARISON OF HIV RELATED RISK BEHAVIOUR BETWEEN A NON-CLINIC SAMPLE OF INJECTING DRUG USERS AND ATTENDERS AT A NEEDLE EXCHANGE CLINIC

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Objective: To compare relative levels of HIV related risk behaviour between injecting drug users in contact with a needle exchange service and those purchasing injecting equipment at a retail pharmacy located in an area where drug injecting is widespread.
Methods: Semi structured interviews with 102 individuals within a retail pharmacy and 51 individuals attending a needle exchange clinic.
Results: The age distribution of both groups was similar with an under-representation on both of female injecting drug users and individuals aged under 20. 47% of the needle exchange group and 84.3% of the pharmacy sample had non drug injecting sexual partners. Condom use was lower in the pharmacy group (21.1% compared to 31.4%). Needle sharing was reported by 81.4% of the pharmacy group and by 58.8% of the needle exchange group.
Conclusions: This study is identifying higher levels of HIV related risk behaviour among a sample contacted at a non clinic site compared to attenders at a needle exchange. However significant levels of risk behaviour have been identified for both groups.

S.C.552 ASSESSMENT OF RISK BEHAVIORS AND HIV INFECTION IN IV DRUG USERS FROM A MINORITY COMMUNITY BASED ORGANIZATION HIV PREVENTION PROGRAM IN HOUSTON, TEXAS

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Objective: To assess the prevalence and determinants of risk behaviors and HIV infection among IVDUs from a minority community based organization HIV prevention program in Houston, Texas.
Methods: Over the Hill, Inc., a minority community-based organization serves ex-offenders on parole or probation, most of whom are IVDUs and Black, for vocational training and drug/AIDS education. Since September 1989, a risk behavior survey has been conducted among IVDUs and/or ex-offenders at Over The Hill, Inc. in order to assess the HIV prevention program. The interviews were carried out at Over The Hill, street outreach, half-way houses and restitution centers by community health outreach workers (CHOW'S). HIV testing was offered to IVDUs.
Results: To date, 310 IVDUs and/or ex-offenders have been surveyed. 80% male; 60% black, 19% hispanic and 13% white. Preliminary results indicate that 1) IVDUs have higher rates of risky sexual behaviors - e.g. men having sex with men, sexual partners either having AIDS or at risk, multiple sexual partners, history of STDs, prostitution, anal sex, etc; 2) Among current IVDUs, two thirds share needles, and do not clean needles. There are no differences in risk behaviors between male and female. Black are more likely to engage in risk behavior. 3) The HIV infection rate in IVDUs who were tested was 12%. The infection rate seemed to increase with the presence of risky sexual behavior.
Conclusions: IVDUs have high rates of risky sexual behaviors in addition to sharing unclean needles. Community-based support and outreach education/service is needed for this high risk population.

S.C.553 RISK BEHAVIOR OF IV STIMULANT USERS

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Objective: To examine risk behavior of stimulant preferring, non-opioid addicted intravenous drug users (IVDUs) compared to methadone maintained IVDUs.
Methods: After providing a structured interview regarding drug use and sex practices 207 male IVDUs received random assignment to 1 of 3 AIDS prevention conditions: 1) wait list 2) group AIDS education 3) education plus optional HIV testing. Repeat interview in 4 months assessed behavior change.
Results: Primary stimulant users (n=44) were younger ($\bar{x}$ age±SD=36.3±5.9) and had fewer months in treatment ($\bar{x}$ mos=5.5±18.2) than stimulant using (n=70, $\bar{x}$ age=39.5±7.2, $\bar{x}$ mos=11.5±19.7) or non-using IVDUs on methadone (n=93, $\bar{x}$ age=40.6±7.3, F=5.7, p<.004; $\bar{x}$ mos=34.7±43.1, F=16.5, p<.0001). They also reported more needle sharing ($\bar{x}$=6.3±16.2) and female sex partners ($\bar{x}$=10.3±33.0) in the past year than did non-stimulant using IVDUs on methadone ($\bar{x}$ sharing=2.5±6.7, $\bar{x}$ sex=1.8±2.4) but similar rates to stimulant using methadone maintained IVDUs ($\bar{x}$ sharing=7.4±16.8, $\bar{x}$ sex=3.3±3.5; Kruskal-Wallis χ^2 for sharing partners=19.4, p=.0001; χ^2 for sex partners=16.7, p=.0002). Only 43% of primary stimulant users followed up versus 63% and 83% respectively for stimulant using and non-using IVDUs on methadone (χ^2=22.5, p<.0001). All groups significantly decreased numbers of needle sharing partners during follow-up regardless of intervention condition, but primary stimulant users evidenced the greatest reductions (F=2.48, p<.09). Of the 65 initially promiscuous subjects in the follow-up sample, 58.5% changed to non-promiscuous sexual behavior with no significant variation by stimulant use group or intervention condition.
Conclusion: Stimulant preferring IVDUs exhibit considerable risk behavior and poor treatment retention, but those retained demonstrate substantial capacity to diminish needle sharing. They need enhanced outpatient programs that address high risk behavior.

S.C.554 NEEDLE SHARING BEHAVIOURS IN TREATMENT INJECTION DRUG USERS (IDUs) IN TWO CANADIAN CITIES

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Objective: To identify factors associated with needle sharing in 353 IDUs undergoing treatment in Toronto and Montreal drug treatment centers.
Methods: Eligible participants (injected within six months of recruitment) in this seroprevalence study answered a detailed questionnaire concerning drug history, needle sharing behaviours, and sexual practices, and provided blood for HIV antibody testing prior to commencement of drug treatment.
Results: The overall study population consisted of 243 males and 110 females with a mean age of 30.3 years. The seroprevalence rate was 3.1%. Sharing was associated with difficulty obtaining personal injection equipment (p=0.00015), injection of cocaine (p=0.01), and needles obtained from shooting galleries (p=0.008). HIV infection was documented only in Montreal (p=0.00245), and attendance at shooting galleries (p=0.0007) in that city.
Conclusion: Multiple injections with cocaine and difficulty obtaining injection equipment were associated with sharing equipment.Consequently, prevention strategies aimed at IDUs should focus in part, on means to obtaining sterile needles as well as disinfection of used needles.

S.C.555 KNOWLEDGE ON HIV AND RISK BEHAVIORS AMONG INJECTION DRUG USERS (IDUs) IN MONTREAL (MTL) AND TORONTO (TOR)

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Objective: To assess the degree of knowledge and beliefs on HIV infection and to correlate those to actual risk behaviors.
Methods: IDUs from both cities were recruited and interviewed using a standardized questionaire.
Results: Up to nov. 1 1989, 353 IDUs were recruited (183 in Mtl and 170 in Tor). In both cities, 90% + IDUs answered correctly to questions on ways of transmission and general knowledge on HIV infection and AIDS. Informations came mainly from TV and papers (67%). Only 5.8% IDUs received information from their doctors and 11.4% from brochures, although 83% were involved in some treatment program at the time of interview. In Mtl, 78 IDUs (42.6%) reported changes in drug use and 42 (23%) changes in sexual behavior because of fear of acquiring AIDS. There was no correlation between reported sexual or drug changes and HIV status but changes in drug use were associated with Hepatitis B markers (p<0.0005).
Conclusion: IDUs in Mtl and Tor are well informed on HIV infection, mainly by media. Changes in behavior, especially sexual, are still very low. Development of specific strategies is needed and treatment centers should be more involved.

S.C.556

PILOT PHASE OF A EUROPEAN COMMUNITY HIV-STUDY ON RISK FACTORS, ATTITUDES AND PREVENTIVE COMPETENCES AMONG EUROPEAN IV DRUG USERS

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Objective: To validate the techniques of the saliva test, to determine the acceptability of the study in the field, to assess the method of recruiting IVDU and the relevance of the questionnaire.
Methods: A total sample of 40 IVDU of both sexes and various ages were to be recruited by each of 13 centres in BEL,DEN,FRA,FRG,GBR,GRE,IRE,ITA,NET,POR,SPA,SWE,SWI within 4 months, half from the street by snow-ball technique and intermediaries, and half recently entering treatment. The study used a standardised questionnaire and serological tests were performed on blood and saliva samples.
Results: 1. Among 359 interviewed and tested subjects 44%, were from the street. The mean age was (29 yr ±6SD) and male:female ratio 2.7:1. 2. In cases for which we obtained a sufficient quantity of saliva specimen the specifity was 98.5% and the sensitivity was 93%. 3. The pilot phase has led to the addition of new dimensions (behaviour change, HIVrelated measures and institutions, fear) and open questions to get more original information about the national specifities, to catch new trends with no or low quantitative relevance and to allow the interviewee to play a more active role. 4. To give a second source of more reliable and more valid data about behaviour change and preventive competence available, the interviewer rates these parameters. 5. The pilot phase allowed a more precise set of indicators (e.g.an empirical pattern of high risk factors and low preventive competences) to be constructed and theoretical models (e.g. a model of 5 levels of drug related preventive competences and one of 3 levels of sex related preventive competences, which were linked with types of prevention measures for IVDU) to be designed for interpreting the results of the main phase. 6. To reach a more common standard of recruitment and a more common comprehension of the questionnaire a technical meeting for all participating interviewers was held. Guidelines for recruitment of intermediaries and the IVDU on the street were distributed. 7. Main phase will be repeated over 3 yr in this cross sectional study.
Conclusions: The pilot phase has proved to be useful for demonstrating the study feasibility, validation of biological techniques, modification of the questionnaire and building up the analysis framework of the main phase. Modifications will allow us "to measure the change in behaviour and prevalence of HIV over the years in relation with prevention measures" in the the main phase (study protocol for the main phase).

S.C.557

SEXUAL LIFESTYLE AND PATTERN OF BEHAVIOUR CHANGE IN INJECTING DRUG USERS IN ITALY

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Objective: To analyse sexual habits of injecting drug users (IDUs) by drug injecting and non-drug injecting sex partners and to investigate behavioural changes.
Methods: Injecting drug users attending public assistance centres for drug dependency were interviewed by a standard questionnaire and were offered HIV Ab-testing.
Results: Out of 1363 IDUs, 1327 reported information on sexual lifestyle and kind of behavioural change. Males were 1003 (75.6%) and females were 324 (24.6%). Among heterosexual IDUs, the proportion of IDUs with non-drug injecting sex partners was 23.0% (males: 51.0% ; females: 21.7%), proportion of IDUs with drug injecting sex partners was 33.3% (males: 16.6% ; females: 42.3%) and proportion of IDUs with both types of sex partners was 33.3% (males: 32.5% ; females: 36.0%). Heterosexual IDUs with non-drug injecting sex partners reported more sex partners per year than IDUs with drug injecting partners. 'Always' use of condom was more frequent with non-drug injecting partners (12.2% vs 6.5%), and proportion was greater among female IDUs than among male IDUs (26.7% vs 8.7%).
Among IDUs reporting sexual behaviour change, HIV negative IDUs were more likely to have reduced the number of sex partners (38.4% vs 27.7%), while HIV positives reported more frequently to have modified sexual practices (60.6% vs 51.2%).
Conclusion: Analysis of sexual lifestyle of kind of partner is an important issue to assess risk of spread of HIV-1 infection by sexual intercourse either among IDUs or from them to the rest of the sexual active population.

S.C.558

DETERMINANTS OF INJECTING AND SEXUAL RISK BEHAVIOR AMONG HIV-NEGATIVE INJECTING DRUG USERS (IDU).

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Objective: To study determinants of 1) borrowing needles and 2) unsafe sex among HIV-negative IDU.
Methods: HIV-neg. IDU were studied at 2 separate occasions: at time 1 (t1), 50 current IDU and 69 sexually active IDU (SIDU) were studied; at time 2 (t2, ± 4 mo.later), 48 current IDU and 48 SIDU. Predictor variables were psychopathology, extent of exchanging needles, self-efficacy in safe use and in safe sex and attitude about condoms. T1 criterion variables were previous and subsequent risk behavior; t2 criteria were previous risk behavior and behavioral intentions. Statistics used were t-tests on standardized means.
Results: 1) On average, combining t1 & t2, 16% of current IDU borrowed in the previous 4 mo. and 48% said always to exchange. Neither psychopathology nor extent of exchanging were related to previous or subsequent borrowing. Previous borrowing was related to low self-efficacy ($p<0.01$), but this was not related to intentions since all current IDU had positive intentions.
2) On average, combining t1 & t2, 67% of SIDU had unsafe sex (did not use condoms at each vaginal contact) in the previous 4 mo. Psychopathology was not related to previous or subsequent unsafe sex. Unsafe sex was strongly related to judging condoms inconvenient ($p<0.01$) and to low self-efficacy ($p<0.05$). Low self-efficacy was related to negative intentions ($p<0.01$). 23% of SIDU did not intend to use condoms.
Conclusion: Risk behavior among IDU is associated with low self-efficacy and not with psychopathology. Borrowing is not related to extent of exchanging. This implicates that prevention efforts should aim at enhancing self-efficacy. Unsafe sex is also an attitudinal problem, as in non-drug users.

S.C.559

PREVALENCE OF HIV INFECTION IN PATIENTS UNDER TREATMENT FOR COCAINE AND/OR OPIATE DEPENDENCE. A NATIONAL STUDY (SPAIN).

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Objective: To ascertain the prevalence of HIV infection, and its determinants, in a national sample of patients with drug dependence under ambulatory care.

Methods: A sample of 1,233 patients with cocaine and/or opiate dependence, who were under treatment in 83 centers of Spain between April-1-1989 and September-30-1989, was studied. Sampling was performed in two steps. First, the treatment centers were randomly selected from a list submitted by the Ministry of Health. Second, patients were randomly chosen up to a quota determined for each center. The maximum sampling error estimated was ± 2.56%. The outcome variable was HIV infection (confirmed by western-blot) and was submitted by the center. Data regarding risk factors and determinants of the infection were gathered by a direct interview. All the interviewers were trained in filling in the questionnaire. The main variables studied include the use of intravenous route, use of syringes shared with other people, sexual practices, use of condoms, level of knowledge on HIV transmission and prevention measures, etc. The statistical methods used include univariate, bivariate, and multivariate logistic regression procedures. The SPSS package was used.

Results: The prevalence of HIV infection obtained was a 40%, being higher in patients from metropolitan areas. The level of knowledge on HIV transmission was high, without significant differences between HIV (-) and HIV (+) patients. Despite this fact, patients did not change their risky behavior. For the six months before the interview, a 42% of the sample did not use condoms habitually, the intravenous route was used by a 51%, and almost a third part of the sample had shared syringes and needles with other people. These percentages were significantly higher in HIV(+) patients and remained significant after controlling for confounders including the knowledge of their HIV infection status in a logistic regression model.

Conclusion: 1. The prevalence obtained is much lower that of patients with drug abuse studied at hospitals or prisons. 2. HIV (+) patients have more risky practices than HIV (-) patients. 3. Knowledge of HIV transmission is not enough to detem risky habits. Then it is necessary to look for more motivations to change a risky behavior.

S.C.560 SEXUAL RISK BEHAVIOUR AMONG DETAINED FEMALE DRUG USERS IN STOCKHOLM

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Objective: To evaluate the level of sexual risk behaviour with regard to HIV among drug using women in Stockholm.
Method: Since 1987 all drug users admitted to the Remand Prison in Stockholm are offered to participate in an investigation, including a standardized interview and an HIV test. Between October 1988 and September 1989 101 detained drug using women were interviewed about drug use, prostitution, pregnancies, sexually transmitted deseases (STD), number of sex partners and use of contraceptives.
Result: The mean age was 31 years (range 19-50). The main drug used was amphetamine intravenously (iv)(80 women). The rest used heroin iv (16), amphetamine orally (3) and haschish (2). Five were HIV positive. Eleven were active prostitutes (all HIV negative), 4 former prostitutes (1 HIV positive). Of the 96 HIV negative women 55 used no contraceptive at all and 72 never used condoms. Of the 5 HIV positive women 3 used no contraceptive, one used condoms and one had no intercourse. Of all 101 74 had been pregnant and 40 had had at least 1 STD in the last 6 years. Excluding the 11 active prostitutes, the remaining 90 women reported a mean of 9 sex partners the last 3 years (range 1-40) of which 3 were non-iv drug users (range 1-20).
Conclusion: Drug using women in Stockholm tend to be sexually active, to have several sex partners, a very low use of condoms and a low use of any contraceptives. Although the HIV prevalence in this group is still low (5 of 101 in this sample) there is an obvious risk of future sexual spread of HIV to and from this group. The risk for mother-child infection must also be considered.

Determinants of Risk Behavior: Blood Donors

S.C.562 WHY DO HIV-SEROPOSITIVE HETEROSEXUALS WHO ARE AWARE OF THEIR PARTNER'S RISK CONTINUE TO DONATE BLOOD?

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Objective. To determine why HIV-seropositive heterosexuals who are aware of their partner's risk do not defer from donating blood.
Methods. From May 1988-Sept 1989, 457 HIV-seropositive blood donors were interviewed for risk behaviors and reasons for donation; 28 (8%) of 341 males and 61 (53%) of 116 females had had no other HIV risk except heterosexual contact with a person at risk for AIDS/HIV (HC). We report data on 18 males (64%) and 38 females (53%) who had had HC and knew their partner's risk before the date of donation. Perception of risk was measured on a 10-point Likert scale (10=highest).
Results. All males were partners of intravenous drug users (IVDUs). Among females, 3 were partners of bisexual men and 35 were partners of IVDUs. Fifty-one (94%) reported reading self-deferral information provided by the blood bank, but only 1 person used the confidential unit exclusion option. Reasons for donation included: felt pressured to donate (18% males, 29% females); wanted to be tested (<1%, 13%); did not think they were at risk (38%, 20%); misunderstood educational materials (12%, 17%). Mean perception of risk score was 2.0 for males and 2.4 for females. Not belonging to a "risk group" was given as a reason for low risk perception by 59% of the males and 39% of the females.
Conclusions. Despite knowledge of partner's risk, many persons who had had HC did not perceive themselves at risk. To improve donor deferral, educational materials must enhance risk perception by emphasizing heterosexual transmission and stressing behavior, not group membership.

S.C.561 RISK FACTORS FOR HIV INFECTION AMONG INJECTING DRUG USERS IN THE NORTH WEST OF ENGLAND

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Objective To reveal variables associated with injecting and sexual risks among injecting drug users.
Methods The sample comprised 303 injecting drug users contacted through drug agencies(60%) and through outreach work (40%).Semi-structured, tape-recorded interviews covered a wide range of topics, e.g. drug use, treatment, AIDS beliefs and knowledge, health, personal relationships. After 6 months 169 respondents were seen again to assess changes in risk activity. Cross tabulations and regression analyses were performed on the data.
Results and Discussion The incidence of sharing injecting equipment ('lending'-62%,'borrowing'-44%) was related to a number of other variables. Important among these were:a low level of knowledge about drug-related health problems ($p<.001$), homelessness ($p<.05$), use of Temazepam (a benzodiazepine) ($p<.005$),peer relationships with a history of sharing ($p<.001$), and lack of close friends ($p<.05$). Condoms were unpopular -75% never used them. Respondents reporting casual sexual encounters (35%) were more likely to use them ($p<.01$).They were rarely used in long-term relationships. Two factors were associated with casual and unprotected sex and were also associated with sharing - homelessness and the use of Temazepam. Data from the follow-up interviews revealed less sharing, fewer sexual partners and a small but significant increase in the use of condoms (all$p<.05$).
Conclusions Sharing and sexual risk behaviors were influenced by a number of variables that merit further research.

S.C.563 HIV POSITIVE BLOOD DONORS WHO DONATE AGAIN FOLLOWING NOTIFICATION

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Objective: To understand the reason(s) for repeat donation(s) once the donor has been informed that he/she is anti-HIV positive. Our hypothesis is that these repeat donors are using the blood center as a facility for retesting.
Methods: Repeat HIV positive donors were recontacted by phone and/or certified letter informing them of the risk of donating anti-HIV positive blood and requesting them to contact the blood center for further counseling.
Results: Within 2 to 48 months following an HIV positive notification, during which the importance of not donating blood, tissues, organs or semen was emphasized, 10 HIV positive donors made repeat blood donations. Four of these 10 had also been notified as to the presence of various hepatitis markers (ALT, HBc, HBsAg). This group included 8 males and 2 females ranging in age from 20 to 41 years. Four of the 10 donors contacted responded either in person or via telephone. All reported donating again to obtain another HIV test. One donor self-excluded on the original donation and again after notification. Three others self excluded on the donation following notification.
Conclusion: HIV positive donors who donate after being notified may be using the blood center to reconfirm their original anti-HIV positive status. We believe it is vitally important to counsel donors as to the risks of continuing to donate HIV infected blood and we urge all those involved in donor notification to include this in their protocols.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

S.C.564 A COMPARISON OF RISK FACTORS FOR HIV INFECTION AND HTLV-I/II INFECTION IN BLOOD DONORS IN THE GREATER NEW YORK CITY AREA

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Objective: To compare risk factors for HIV infection and HTLV-I/II infection in blood donors.
Methods: Blood donors who tested ELISA repeat reactive and Western Blot positive for antibodies to HIV or HTLV-I/II were interviewed to ascertain risk factors for infection.

Results: Risk	HIV Positive N=240	HTLV-I/II Positive N=83
Homo/Bisexual Male	78 (33%)	0 (0%)
Intravenous Drug Use (IVDU)	29 (12%)	2 (2%)
Blood Transfusion	10 (4%)	6 (7%)
Homo/Bisexual or IVDU Partner	61 (25%)	9 (11%)
Heterosexual/ Multiple Partners or no Identified Risk	84 (35%)	66 (80%)
Born in Endemic Area	2 (.8%)	35 (42%)
Occupational Exposure	4 (2%)	16 (19%)
Other & Undetermined Risk	2 (.8%)	0 (0%)

** NS. Donors may report more than 1 risk factor.
Conclusion: Among blood donors in the New York/NJ Metropolitan area the highest risk factors for HIV infection are homosexual activity and/or IVDU by donor or donor's sexual partner. Origin from endemic area, and occupational exposure play a more significant role in HTLV-I/II transmission. Heterosexual contact may play a role in both groups.

Determinants of Risk Behavior: Women, Children, and Adolescents

S.C.566 SEXUAL PRACTICES AND REPRODUCTIVE CHOICES OF HIV+ AND HIV- PREGNANT WOMEN IN A RURAL COMMUNITY WITH HIGH HIV SEROPREVALENCE IN THE UNITED STATES

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Objective: To describe and compare attitudes and behaviors about sex, pregnancy, AIDS, contraception, and drug use of HIV+ and HIV- pregnant women.
Methods: For this cross-sectional study, women attending a prenatal clinic in western Palm Beach County, Florida were interviewed and tested for HIV.
Results: In a farming community, 219 (99%) of 222 consecutive pregnant women registering at a prenatal clinic voluntarily consented to be studied. Most study participants were 21 years of age or less (52%), black or Hispanic (92%), unmarried (68%), and unemployed (90%). One-fourth were primigravidas; another 27% were secundigravidas. Eighty-seven percent of study participants knew all 3 modes of HIV transmission, and 208 (95%) thought they should take precautions to avoid HIV infection. One hundred six (48%) reported having had sex before age 16. Previously, 145 (66%) had used birth control pills and 114 (52%) condoms; however, only 15 (7%) had used condoms during 80% of sexual contacts. Four (2%) had used IV drugs, but none had ever shared needles. Twelve (5.5%) of the 219 women tested positive for HIV. HIV+ women were younger at time of first sexual intercourse and had more sex partners: a) during the last 12 months; b) for entire life; c) who were born outside U.S.; and d) with whom they cohabited, as compared to HIV- women ($p<0.01$).
Conclusion: Heterosexual contact is an important mode of HIV transmission for women of reproductive age in this community. Education should begin at an early age and emphasize condom usage and limiting the number of sex partners.

Determinants of Risk Behavior: Health Care Workers

S.C.565 RISK OF ACDQUIRING HIV INFECTION AT EMILIO RIBAS HOSPITAL

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This study outline the professional risk of acdquiring HIV infection in the care of Aids patients at Emilio Ribas Hospital Methods:In 1985 we started to make anti-HIV Elisa test to Health Care Providers (HCP) after accidents with blood and body fluids. The blood samples were tested using Elisa FDA approved two times and if positive we performed Western Blot.It was reported to the infection Control Committee 212 HCP with accidents with blood/ body fluids and 361 HCP tested reported no accidents.A standard 10 questions confidencial interview was applied to all HCP by the executive nurse of the Infection Control Committee.We exclude from this analysis the 110 HCP that have less than 3 months of follow up after accident and include the HCP with 6 or more months of follow up.Results:From 212 HCP with accidents we analysed 84 with more than 6 months of follow up and none were positive.From 361HCP with no accidents 6 were positive and had confirmed risk factors.Conclusion:In Sao Paulo,Brazil as reported already in other contries the risk of adcquiring HIV infection in the care of HIV/AIDS patients is very low but infection control committes play an important rule in the follow up of HCP with accidents .

S.C.567 CLASSROOM INSTRUCTION AND HIV KNOWLEDGE AS PREDICTORS OF IV DRUG BEHAVIOR AMONG ADOLESCENTS: EVIDENCE FROM A NATIONAL SCHOOL-BASED SURVEY, 1989

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Objective: To determine the independent relationships among exposure to HIV-related classroom instruction, HIV knowledge, and self-reported drug behavior.
Methods: HIV knowledge, beliefs, and behaviors were measured by a 39-item self-administered, anonymous questionnaire completed by students selected through a probability sample of all 9th through 12th grade students in the U.S.
Results: Eighty-one percent of selected schools and 83% of selected students provided usable responses. Of the 8,098 respondents, 2.7% (95% CI=2.3, 3.2) and 1.7% (95% CI=1.3, 2.1) reported injecting illegal drugs ever and during the past year, respectively. The corresponding prevalences of needle sharing were 0.8% (95% CI=0.5, 1.1) and 0.5% (95% CI=0.3, 0.7), respectively. The mean number of correct knowledge items was 14.5 (Range=0 to 17); 53.7% of students reported receiving HIV-related instruction in school. By logistic regression, students with higher knowledge scores were less likely (OR=0.9, 95% CI=0.8, 0.9) and males more likely (OR=2.8, 95% CI=1.4, 5.6) to have ever used drugs. HIV knowledge was similarly associated with the other outcome measures of drug behavior: HIV instruction did not directly influence IV drug and needle sharing behavior. HIV instruction was, however, positively associated with HIV knowledge (B=0.95, SE=0.05) by linear regression.
Conclusion: While these data do not establish a causal relationship, they suggest that HIV knowledge and school-based instruction may play a role in maintaining low levels of HIV-related drug behavior among high school students.

S.C.568 HIV-RELATEL KNOWLEDGE, BELIEFS, AND BEHAVIORS AMONG A NATIONAL SAMPLE OF HIGH SCHOOL STUDENTS IN THE U.S., 1989

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Objective: To determine HIV-related knowledge, beliefs, and behaviors among high school students in the U.S.
Methods: HIV-related knowledge, beliefs, and behaviors were measured by an anonymous, self-administered questionnaire completed by a national probability sample of 9th through 12 grade students.
Results: Eighty-three percent of selected students from 81% of selected schools provided usable responses. Of the 8098 responding students nearly all knew HIV can be transmitted by sharing needles used to inject drugs (99%) and from having sexual intercourse (98%). Fewer students knew HIV cannot be transmitted from having a blood test (74%), using public toilets (72%), giving blood (64%), or through insect bites (45%). Some students (23%) did not know you cannot tell if people are infected with HIV by looking at them. The percentage who reported ever using IV drugs and ever sharing needles was 3% (±0.5%) and 1% (±0.3%), respectively. The percentage who reported ever having sexual intercourse and ever having four or more sexual partners was 58% (±3.0%) and 21% (±2.3%), respectively. More boys than girls reported practicing behaviors that can result in HIV transmission.
Conclusion: Results from this national survey provide baseline information to help evaluate the impact of national programs and to develop educational interventions to prevent HIV infection among high school students.

S.C.569 SURVEY OF SEXUALLY TRANSMITTED DISEASES (STD) AND DRUG ABUSE RISK FACTORS FOR HIV INFECTION IN INCARCERATED ADOLESCENTS

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OBJECTIVE: To determine the history of STD's, drug abuse patterns, and their relationship to high risk factors for HIV infection.
METHOD: Minors in Los Angeles County juvenile halls who requested counseling about AIDS and the Voluntary HIV Testing Program were given individual interviews by specially trained health educators. The minors were asked about their history of STD's and drug abuse using a standardized questionnaire.
RESULTS: 1069 were interviewed. 18.3% had a history of gonorrhea—most prevalent among black minors. The incidence of syphilis was 2.2%; chlamydia, 1.1%; and genital warts, 1.5%. Among females, the history of Trichomonas was 5.5% and genital herpes, 2.5%. The overall rate of drug abuse was 73.2% with IV drug abuse, 10.1%. 63.1% smoked marijuana and 13.9% used PCP. Cocaine was snorted by 9.2%; 7.7% smoked crack and injected by 3.9% of the minors. Amphetamine and heroin were used less. The use of cocaine, heroin and PCP was most prevalent among Hispanic minors while amphetamines were used most by white juveniles.
CONCLUSION: Incarcerated adolescents give a history of a high incidence of previous sexually transmitted diseases and drug abuse. Early intervention programs need to address these risk factors.

S.C.570 HOMELESS ADOLESCENTS IN HOLLYWOOD: HIGH RISK BEHAVIORS FOR HIV EXPOSURE

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Objective: To document the prevalence of high risk behaviors for HIV exposure among homeless adolescents and their relationship to attitudes and knowledge about AIDS.
Methods: Ninety-three adolescents (ages 13-17) were systematically sampled from 30 "street" and service sites of the Hollywood area of Los Angeles County. knowledge, attitudes, and behaviors related to HIV exposure were assessed. Non-parametric statistics were used.
Results: About half of the sample (51%) reported at least one high-risk behavior for HIV exposure including IVDU (26%) or recent sexual behaviors including male homosexual contact (13%), sex with an IV drug user (17%), prostitute (18%) or the respondent's own prostitution clients (32%). Many (20%) reported both sex with high risk partners and IVDU. Risk of exposure was related to duration of homelessness. Knowledge did not insure use of protective behaviors against exposure.
Conclusion: Findings here and elsewhere suggest that homeless adolescents are a high risk group for both HIV exposure and transmission.

S.C.571 PREVALENCE OF SEXUALLY TRANSMITTED DISEASES(STD) AND HIV IN A HOMELESS YOUTH MEDICAL CLINIC IN SAN FRANCISCO(S.F.)

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Objective: To determine the prevalence of STDs/HIV and risk factors among homeless youth requesting confidential HIV antibody(Ab) testing in S.F.
Methods: From April-December 1989 patients(pts) at a street based health clinic in a homeless youth multiservice center requested HIV-Ab testing. Pts gave informed consent, participated in pre-test counseling sessions, completed a history, physical exam, and tests for hepatitis A and B(Hep), gonorrhea(GC), chlamydia(CT), syphilis(S), and HIV. Pts returned in 2 weeks for results and post-test counseling.
Results: 81 pts had pre-test counseling, 2 were discouraged, and 61 returned for Ab testing. 100% obtained HIV Ab results. Characteristics of the 61 pts: 38% female(F), 62% male(M); age 16-22 yrs, mean 17.5; 74% white(W), 12% Latino, 11% African-American, 3% Asian/Pacific Islander(PI). Among M(N=38), 8% had intercourse with M, 39% with F, 53% with M/F. Among F(N=23), 91% with M, 9% with M/F. 100% reported drug use and 80% were intravenous drug users (IVDUs). Pts reported 1-6 yrs of unsafe behaviors, mean-3; onset of unsafe behaviors between 11-18 yrs, mean-14; 67% had STDs(61% of M, 78% of F), 54% were GC positive(+), 38% GC and CT+, 11% S+; of the 30 screened for Hep, 7 had B, 1 A, 3 A and B; 8% were HIV Ab+. The 5 HIV+ were all male IVDUs; W-4, A/PI- 1. Sex partners: M-1, F-1, M/F-3; 2 had no STDs.
Conclusion: (1) Homeless youth in an AIDS epicenter are at serious risk for HIV infection. (2) Community based youth-sensitive primary care clinics provide accessible and acceptable sites for confidential HIV-Ab testing. (3) Homeless and other high risk youth deserve immediate attention for comprehensive medical and social services to reduce their HIV and related risks.

S.C.572 DETERMINING FACTORS OF THE CHANGES IN INFORMATION, ATTITUDE AND PRACTICES CONCERNING STD AND AIDS. A PROSPECTIVE STUDY AMONG UNIVERSITY STUDENTS IN PARIS

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Objective : Exploration of the knowledge, attitude and practice of University students about health, STD and AIDS. Study of the factors of change from 1988 to 1993. Creation of a dynamic link with the students allowing health education recommandation regularly assessed and adjusted.
Methods : The interviews, the group discussions and a pilot phase were followed by a questionnaire of 140 items, strictly anonymous and non mandatory was completed by 648 male and female students, 17 to 22, from the 1st year of University in a 1/5 random sample. 203 000 data were collected.
Results : A feed back report was released showing along with the results of the questionnaire a lack of information and the need to be sensitized and motivate the students to adopt attitudes and behaviors revealed lacking, or to correct them if they are inappropriate : 41,8% of the students having had sexual intercourse claims having changed their practice because of AIDS, 19% of them think they should carry a condom with them and 10,3% say they use condom "if necessary". 65,4% of the students claims they are ready to take part in an information program on AIDS prevention for other young people.
Informal relay groups of volunteers regularly discuss with the research team about a theme chosen by themselves about STD and/or AIDS and their difficulties to adopt a preventive measures. Students comment upon that experience around them (feed in). Then, they report on the reaction they met (diagnostic) which allows to further adjust information.
A 128 pages book is now being distributed among all students of the University preparing the second phase of the prospective study where changes and factors associated will be assessed.

S.C.573 CONDOM USE, MIS-USE, AND NON-USE AMONG HOMELESS YOUTH

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OBJECTIVE: The social world, survival strategies and risk for HIV of street youth in Brazil and the United States was studied and their attitudes, beliefs, and behaviors surrounding condom use evaluated.
METHODS: Ethnographic study including structured interviews and observational techniques in clinical and natural locations. Chain referral sample of 100 street youths aged 13-19 in Rio de Janeiro and 100 similarly aged youth in San Francisco.
RESULTS: Street youth engage in unprotected receptive anal activity, do not perceive the threat of AIDS, nor the consequences, and minimize the need for condoms given more pressing factors. Conflicting social world beliefs are counterproductive to condom usage. Prejudice, guilt and shame associated with disease states in general; sexually transmitted diseases and condom use in particular, confound the problem.
CONCLUSIONS: 1) Condoms must be provided at no charge in natural areas, and must be durable. Poor quality condoms tear leading youth to mistrust utility and as a result, many go unprotected. 2) The possession of condoms by street youth is not indicative of unlawful activity; condoms should not be comfiscated for the larger public welfare. 3) Most condoms are too large for youth, and more variation in size is needed. In the developed and developing worlds, prepubescent street youth engage in receptive anal sex with adults and age peers, and appropriately sized condoms must be made easily available.

S.C.574 PREVALENCE AND PREDICTORS OF AIDS HIGH RISK BEHAVIORS AMONG MALE ADOLESCENTS IN DETENTION

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Objectives: To examine: 1. patterns of sexual behaviors and drug use; 2. relationships between AIDS risk behaviors and medical and psychosocial variables.
Method: 120 male detainees were interviewed at entry and at a three-month follow up. Items included behavioral, medical and psychosocial variables based on a modified health belief model. A medical exam and STD screening were done at entry. The mean age of study participants was 15.8 years (range:11-18), 71% of the Ss were Black.
Results: 43% of the Ss had a history of STDs, the most commonly reported ones were gonorrhea (22%) and chlamydia (12%). 96% stated that they had used illegal drugs at least once. The two most common drugs were marijuana (77% ever, 31% daily), and crack (17% ever). 77% of the participants stated that they had sex while high on alcohol or other drugs. Knowledge scale scores were high (mean=11 out of 15). Sexual behavior and contraceptive use varied according to partner status:

BEHAVIOR	MAIN PARTNER	OTHER PARTNER
Vaginal sex (last 3 mo)	17 (r=0-100)	12 (r=0-80)
Anal sex (last 3 mo)	5%	8%
Condom use (always)	14%	33%

Follow up data will be presented at the conference.

Conclusion: Male adolescents in detention engage in several behaviors which place them at risk for HIV transmission in spite of having high AIDS knowledge scores. Most sexual risk taking appears to occur with one's main sexual partner. These issues need to be addressed in prevention programs targeting this population.

S.C.575 ALCOHOL AND CONDOM USE AMONG ADOLESCENTS

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OBJECTIVE: To test whether sexually active adolescents are less likely to use condoms after drinking than when sober.
METHODS: In the fall of 1988 and 1989, two independent anonymous random digit dial telephone surveys in Massachusetts, N=1773 and N=900, examined condom use among adolescents aged 16-19 who had sex after drinking and when sober. Response rates were 82% and 87%. Chi square test of symmetry examined whether unprotected sex was more likely to occur in the same individual after drinking than when sober. Chi square tested differences in demographic characteristics, knowledge and beliefs about AIDS between those less likely to use condoms after drinking vs. other respondents.
RESULTS: From 1988 to 1989, the proportion of sexually active adolescents who always used condoms during intercourse increased from 31% to 36%. The proportion having sex after drinking declined from 71% to 67%. In both 1988 and 1989, respondents were significantly less likely to use condoms after drinking than when they were sober. Sixteen percent used condoms less often after drinking in 1988, and 13% in 1989. Respondents who used condoms less often after drinking were less concerned about becoming pregnant and believed male to female sexual transmission was less likely. They were also less likely to know about male sexual transmission, more likely to believe drinking and drug use reduce sexual pleasure and were less likely to report changing their contraceptive or drug use because of AIDS.
CONCLUSION: Educational programs about HIV should stress that drinking can disinhibit adolescents from using condoms during intercourse.

S.C.576

CHANGES IN ADOLESCENT CONDOM USE, KNOWLEDGE AND BELIEFS ABOUT AIDS IN MASSACHUSETTS, 1986-1989.

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OBJECTIVE: To assess whether, since 1986 in Massachusetts, adolescent condom use and knowledge and beliefs about HIV transmission have changed.
METHODS: In the fall of 1986, 1988 and 1989 statewide anonymous random digit dial telephone surveys of 863, 1773 and 900 adolescents aged 16-19 were conducted, response rates 86%, 82% and 87%. Respondents were asked about possible modes of transmission in all three surveys, and in 1988 and 1989 about Health Belief Model beliefs concerning HIV and condoms.
RESULTS: From 1986 to 1988 the proportion who knew that HIV can be transmitted during heterosexual intercourse and when injecting drugs increased from 92% to 99% and by sexual intercourse between men from 98% to 99%. The proportion who worried some or a great deal about getting AIDS increased from 22% in 1986 to 42% in 1988 and 45% in 1989. Between 1988 and 1989 the proportion who thought HIV infection to be very likely during intercourse increased from 67% to 71%. The proportions did not change who believed people with AIDS will die, condoms are effective in reducing transmission or reduce sexual pleasure. In 1989 (vs 1988) more respondents ssid they would be embarrassed if asked to use condoms, 15% vs 20% and more asked partners to use them 43% vs 33%. The proportion who adopted condom use because of AIDS increased from 2% in 1986 to 14% in 1989. Those reporting they always use condoms increased from 30% to 35% since 1988.
CONCLUSIONS: Most adolescents are aware of the principle modes of transmission. Education must now focus on reducing barriers to condom use, altering beliefs about susceptibility to infection and effectiveness and social acceptability of condoms.

S.C.577

DO BELIEFS ABOUT HIV, CONDOM USE, PREGNANCY AND STD'S PREDICT ADOLESCENT CONDOM USE?

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OBJECTIVE: To test whether Health Belief Model beliefs about HIV, condom use, other sexually transmitted diseases (STD's), pregnancy and social acceptability of condoms each independently predict adolescent condom use.
METHODS: In the fall of 1989, 900 Massachusetts 16-19 year olds were anonymously surveyed in random digit dial telephone interviews, response rate, 87%. Logistic regression tested whether after socio-demographics and substance use were controlled, perceived susceptibility of HIV infection, severity of HIV, effectiveness of condoms in prevention, barriers to condom use, and education about AIDS predict whether sexually active adolescents always use condoms. Beliefs about other STD's, pregnancy and the social acceptability of condoms were also examined.
RESULTS: In the previous year 64% of respondents had intercourse. Those who thought condoms are effective in reducing HIV transmission and carried condoms were 3.2 and 1.8 times more likely to always use them. Other independent predictors of condom use were the perceived likelihood of pregnancy after intercourse without condoms, discussion of pregnancy or STD's with an M.D., whether partners would use condoms if asked, being asked by partners to use condoms, and the perceived likelihood that women ask partners to use condoms. Adding beliefs about pregnancy, STD's and social acceptability of condoms to beliefs about HIV significantly ($p<.001$) increased the fit of the logistic model from $r=.27$ to $r=.40$.
CONCLUSION: Those trying to persuade sexually active adolescents to use condoms should integrate discussion of pregnancy and STD's with beliefs about HIV. The social acceptability of condom use should be stressed.

S.C.578

PSYCHOSOCIAL CORRELATES OF CONDOM USE AMONG NEW JERSEY COLLEGE STUDENTS

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Objective: Using a variety of psychological models of the determinants of health behavior, we sought to identify which psychosocial variables were associated with condom use among New Jersey college students.

Methods: A survey was developed with scales to assess knowledge, attitudes, and HIV transmission-related behavior, as well as each of the following conceptual variables taken from Social Cognitive Theory, the Health Belief Model, and the Theory of Reasoned Action: Self-efficacy to negotiate condom use, outcome expectancies regarding HIV infection, perceived vulnerability, perceived social norms regarding condom use, fear arousal, barriers to condom use (such as the belief that condoms make sex less pleasurable and fear of negative partner reactions to condoms), and experience with AIDS. A random sample of students on four New Jersey campuses received surveys in the mail and responded anonymously. A total of 923 students, representing a 42% response rate, participated. Data from unmarried, sexually active respondents (250 women and 190 men) were analyzed by creating three groups: consistently safe, consistently unsafe, and inconsistent. Analyses of variance comparing groups for the conceptual variables were performed separately by sex and further by race and sexual orientation.

Results: The total sample was 9.6% Black, 5.7% Hispanic, 1.8% American Indian, 8.6% Asian and 71.7% White. No significant correlates of condom use emerged for the total male sample. In the female sample significant predictors included fewer barriers ($p < .003$) and higher self-efficacy ($p < .02$). Women who knew people with AIDS tended to use condoms inconsistently ($p < .03$). Analyses by race were performed. For women results for the group as a whole were reflected in subgroup analyses. For men this was not the case. For black men more conservative attitudes toward risk group members (e.g., more homophobia) were associated with less use of condoms ($p < .03$). Hispanic men perceiving fewer barriers to condom use were more likely to use condoms ($p < .05$). No significant predictors emerged for white men or for gay and bisexual men.

Conclusion: Intervention efforts are extremely important in New Jersey with its high incidence of HIV infection. These efforts must address such factors as self-efficacy, barriers to condom use, and homophobia. The present results indicate the necessity that sex and race subgroups be considered separately.

S.C.579

HUMAN IMMUNODEFICIENCY VIRUS INFECTION AND HIV-RELEVANT SEXUAL BEHAVIOR AMONG A HEALTHY INNER-CITY HETEROSEXUAL ADOLESCENT POPULATION

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Objective: To assess HIV-relevant sexual behavior, predictors of these behaviors and the frequency of HIV infection among healthy, heterosexual inner-city, non-IVDU adolescents in an area endemic for HIV.
Methods: A total of 407 inner-city adolescents were accrued from two locations: 1) patients attending an adolescent general medical clinic consisting of adolescents who required physical exams for either school or work, or were returning to the clinic for follow-up of a minor medical illness; 2) students randomly selected from classes at a public high school in a representative inner-city neighborhood. A wide range of psychological, behavioral, and AIDS relevant domains were assessed. Blood samples were collected from the clinic sample for immune and HIV sero-status.
Results: We found that 1.24% of the adolescents were HIV sero-positive. In addition, despite of high levels of AIDS related knowledge, we documented high levels of sex risk behaviors. Finally, the strongest predictors of high risk sexual behavior was moderate use of alcohol or marijuana.
Conclusion: These data indicate that the prevention of the spread of HIV among inner-city youth should become an immediate national priority.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

S.C.580

GAY AND RUNAWAY MALE ADOLESCENTS' SEXUAL RISK BEHAVIORS

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Objective: We know little about sexual risk behavior among minority youth; therefore our goal was to describe sexual risk behaviors in two samples of believed to be at highest risk for HIV infection—gay and runaway males.
Methods: Sixty-two males at HMI, a community agency for gay and lesbian youth and 59 male runaways at two shelters were recruited. Both samples were predominantly Black and Hispanic. Trained interviewers interviewed youths extensively about their sexual behavior.
Results and Conclusions:
1) Most had begun to engage in high risk activities at an early age (mean age of initiation of receptive anal sex for HMI males was 14.2 and of penile-vaginal intercourse for male runaways was 10.7).
2) Many had experienced sexual activity with both sexes (57% of HMI males reported sexual relations with females and 10% of runaway males reported sexual relations with males).
3) Condom use was infrequent among the sexually active (77% of HMI males and 62% of male runaways reported infrequent condom use in previous 3 months).
4) Having multiple sexual partners was common (40% of HMI males had engaged in sexual relations with more than 10 male partners and 51% of runaway males had engaged in sexual relations with more than 10 female partners.)
5) Anal sex, likely the highest risk activity, had been recently experienced by many of these youth (47% of HMI males had engaged in receptive anal sex; 19% of male runaways had engaged in insertive anal sex).

S.C.581

HIV/AIDS PREVENTION AND MULTIPLE RISK BEHAVIORS OF GAY MALE AND RUNAWAY ADOLESCENTS

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Objective: To examine the relationships among multiple risk behaviors that must be considered in designing interventions to prevent HIV infection and AIDS among gay male and runaway adolescents.
Methods: Participants in the study were 75 female and 72 male runaways and 66 gay male adolescents in collaboration with four community agencies in NYC. They were extensively interviewed about their sexual behavior, drug and alcohol use, conduct problems, suicidality, and depression.
Results: Sexual risk behavior indices in the previous three months were unrelated to depression or suicide attempts. However, sucide attempts and ideation were related to having had an abortion ($p < .05$) and to having had syphilis ($p < .05$). Female runaways who had been pregnant were more likely to have been in trouble with the law, to use drugs, and to engage in frequent, unprotected sexual intercourse and to have had high risk sex with multiple partners in the previous three months (all $p < .05$). Across groups, being sexually active was related to alcohol use ($p < .05$). Having had a sexually transmitted disease was related to recent drug ($p < .01$) and alcohol ($p < .05$) use, and conduct problems ($p < .05$).
Conclusion: These results suggest that HIV/AIDS prevention programs for high risk youth must address multiple risk behaviors beyond the obvious IV drug and sexual activities.

S.C.582

TARGETING DETERMINANTS OF RISK PRIOR TO HIV-PREVENTION EDUCATION FOR YOUNG MEXICAN-AMERICAN ADOLESCENTS.

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Objective: To identify factors which influence risk, knowledge of HIV, attitudes, and social coping skills in young Mexican-Americans.
Methods: As part of a pilot study to evaluate a culturally sensitive HIV curriculum, 72 Mexican-American sixth graders in two parochial schools were surveyed for Knowledge of HIV/AIDS, Attitudes, Risk Factors (All Risk, Direct Risk, Related Risk), Assertive Decision-Making, Self-Efficacy and Acculturation. Cronbach's alpha measured internal reliability of scales; Pearson's correlation tested linear relationships between parameters; group differences were tested with analysis of covariance.
Results: For the 31 girls and 41 boys, there was a significant correlation between Related Risk and Knowledge ($r=-.299$, $p=.0105$). Among males, Assertive Decision-Making correlated negatively with All Risk ($r=-0.693$, $p=<0.0001$), Direct Risk ($r=-0.669$, $p=<0.0001$) and Related Risk ($r=0.407$, $p=0.008$). Likewise, Self-Efficacy correlated negatively with All Risk ($r=-0.519$, $p=0.003$) and Direct Risk ($r=-0.473$, $p=0.008$). These determinants were less influential in females, with significant differences ($p=.0038$).
Conclusions: As neither cultural affiliation nor level of knowledge appears to influence risk factors in these children, it seems clear that information alone will not affect prevention through behavior change. An important determinant of risk reduction among male adolescents, however, seems to be both assertive decision-making and self-efficacy. Hence, education should focus on skills and resources which strengthen ability to change. Further, because these associations were less influential for females, other factors should be sought which would positively influence prevention in girls.

S.C.583

THE HIV EPIDEMIC AND CHANGES IN THE USE OF CONDOMS AMONG NORWEGIAN ADOLESCENTS.

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Objective: To describe the use of contraception and changes in condom use among Norwegian adolescents.
Methods: A population based survey of 3000 Norwegian adolescents aged 17-19 years was conducted, yielding a response rate of 60.9%. Data was collected by structured, self-administered questionnaires.
Results: At first intercourse 29.2% of the girls and 33.3% of the boys did not use any contraception, while 44.4% of the girls and 39.7% of the boys reported to have used a condom at their first intercourse. An increase in the use of condoms in the years 1985-1988 was observed, reflected by 34.4% of the 19-year-olds having used a condom at their first intercourse, compared to 43.3% and 47.5% among the 18- and 17-year-olds, respectively. A logistic model showed that non-use of contraception was particularly associated with a low age at first experience of intercourse and consumption of alcohol prior to the first intercourse, while an increase in age at first intercourse and not having consumed alcohol prior to that occasion, increased the use of a condom.
Conclusion: The present study shows a increase in the use of condoms among Norwegian adolescents. This increase may be ascribed to the HIV epidemic.

S.C.584 ADOLESCENTS AIDS. CLINICAL AND SOCIODEMOGRAPHIC STUDY OF 725 ADOLESCENTS WITH RISK FACTORS.

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AIMS: Study of the clinic and sociodemographics characteristics among 725 adolescents in risk practices for HIV infection in Madrid city. METHODS: Epidemiological and clinical data of adolescentes aged 15 throught 20 who attended to an out patient clinic of Madrid Council, between january 1986 and december 1989, were studied. Serology for HIV, Hepatitis B, Syphillis was done in all the cases. RESULTS: 38% (273) of the 725 adolescents were seropositives for HIV. Referred to sex, of the 453 males 44,35% were seropositives and the 272 females 26,1% were seropositives. Considering risk factors, intravenous drug use was more frequently reported among our adolescents (461) with a 57,4 % seropositivities. In the group who referred homosexual contact 6,5% were seropositive. In the group of the sexual-partners of HIV (+) the seropositive were 5,9% and the group whose risk factor were prostitute non IVDUS, contact with prostitute, other (tatoos ...) we have not found any seropositive. Of our group the 100% had had sexual intercourses. Only 11% of them had always used condons and the 81% of the IVDUS were sharing syringes. CONCLUSION: These young men, sepecially in our medium the IVDUS, are at high risk of HIV infection and in addition they are at high risk af infecting other adolescents (IVDUS and heterosexual transmision). Age appropiate service and behavioral interventions are urgently needed for these adolescents, on the other hand, we consider necessary to made research that demonstrate the representativity of series like ours in the adolescents collective.

S.C.585 SEXUAL CONTACT PATTERNS OF YOUNG PEOPLE IN SWEDEN - A RANDOM SAMPLE SURVEY

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Objective: Study sexual contact patterns from the point of view of sexually transmitted disease (STD) epidemiology.
Methods: One tenth of all inhabitants aged 16-31 of Gotland county (pop. 55,000) in Sweden were randomly selected from the county census register in the summer of 1988. Local media participated in publicizing the study. Participants were invited to come to any of several schools or meeting-halls at any of several days to anonymously fill out a questionnaire on past and present sexual relations. Questions covered e.g. age at first intercourse, partner's age, number of life-time partners, number of extra-relational sexual contacts, and a more detailed description of relations in the previous 12-month period.
Results: Out of 1145 persons selected, 778 (68%) completed the questionnaire. Response rate was higher for women, and for the youngest and oldest. Median age at first intercourse was 15.4 yrs for women, 16.1 for men (p=0.0001, logrank). No significant difference in age at first intercourse for different birth-years. For women, first partner was median 2 yrs older, for men same age. Median time to second partner was 2 yrs for both sexes. Rate of partner change was median 1 new partner per 2.5 yrs, no sex difference. One fifth had had sexual relations outside an on-going steady relationship.
Conclusions: The data collection method gives good yield at low cost. Age at first intercourse seems to have dropped sharply (2 yrs) for women between 1965 and '70, less (0.5 yrs) for men, and stayed on this level since. 50 to 75% (increase with age) reported either no partner or one continuing relationship during the latest 12-month period, putting them at low risk for STD. In all age groups, 5-10% described a contact pattern during the latest 12 months that should put them at high risk to contract or transmit an STD.

HIV Testing: HIV-1 Testing Strategies

S.C.586 ALTERNATIVE CONFIRMATORY STRATEGIES FOR THE DETECTION OF HIV-1 ANTIBODIES

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Objective: To evaluate to what extent the outcome of an algorithm in which two different commercial HIV antibody assays have been used in pairs, applying the second only to those reactive in the first, can reduce the cost of confirmatory testing.
Material - Methods: Three hundred fifty three fresh samples sent to our routine laboratory were all tested with three anti-HIV screening assays, respectively the Abbott recombinant HIV-1 HIV-2 EIA (1) (Abbott), the HIV Chek (2) (Dupont), the Immunocomb (3) (PBS-Orgenics) and one confirmatory assay, the Inno-Lia HIV-1/HIV-2 Ab test (4) (Innogenetics). An initial reactive result obtained by a particular anti-HIV assay was retested by an anti-HIV assay different from the first. Sera reactive in two different anti-HIV assays were considered positive. Samples non-reactive in the first anti-HIV assay were considered negative. Only sera reactive in the first and non-reactive in the second assay were retested with the Inno-Lia HIV-1-HIV-2 Ab test. The results of the different algorithms were compared with the Inno-Lia HIV-1-HIV-2 Ab test result obtained on each serum individually.
Results: Fourty nine samples (49/353; 13.9 %) were found HIV-1 confirmed positive. The following algorithms resulted in 100 % sensitivity and 100 % specificity.
A: 1+2 (4.2*; 6.1**); B: 1+3 (3.9; 6.1); C: 3+2 (3.1; 5.2); D: 3+1 (3.0;5.2). The combinations E: 2+1 (3.4; 5.4) and F: 2+3 (3.3; 5.4) resulted both in a sensitivity of 96 % and a specificity of 100 %.
* Price in dollar to test one serum using that particular alternative algorithm. ** price/serum to retest each of the initial reactive anti-HIV assay results with a confirmatory test InnoLia HIV-1/HIV-2 Ab test (classical algorithm).
Conclusions: Most of the described alternative algorithms are capable to detect all HIV antibody true positive and negative sera. The price/serum in the classical algorithm, where initial reactive sera were confirmed with a Western blot assay, was at average 1.5 times higher as compared to the alternative algorithms. However, it is critical that the most sensitive assays are used as the first test.

S.C.587 TOWARDS AN INEXPENSIVE ALGORITHM FOR THE DETECTION OF ANTIBODIES TO HIV-1 IN BRAZIL.

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Objective: To design an inexpensive algorithm to detect antibody against HIV-1 in low risk populations by improving the specificity of the screening ELISAs and substituting the confirmatory IFA for the WB.
Methods: Specificity of two screening ELISAs were compared using 2,325 sera from a low risk population in Rio de Janeiro- the Dupont whole virus antigen ELISA (WV-ELISA) and the Cambridge Bioscience Recombinogen envelope antigen ELISA (ENV-ELISA). To evaluate the specificity of two diagnostic algorithms, the WV-ELISA was used as the primary screen and the WV-ELISA or the ENV-ELISA was used as the secondary screen of 10,027 sera from Brazilian Army soldiers. All ELISA reactive sera were confirmed by WB. The specificity of the confirmatory IFA [Oswaldo Cruz HIV-1 infected K37 cells] was also evaluated.
Results: The false positive rate was 10/2325 sera in the WV-ELISA and 30/2325 in the ENV-ELISA. None of the sera were false positive in both ELISAs implying that specificity can be increased by using one of them as the primary screen and the other as the secondary screen. In routine screening of 10,027 soldiers, there were 60 false positives with the WV-ELISA -> WV-ELISA combination, but only 1 with the WV-ELISA -> ENV-ELISA combination. IFA and WB results were comparable - 5 WB negative and 55 WB reactive sera were IFA negative and 12 WB positives were also IFA positive.
Conclusion: Of the methodology considered, the following algorithm maintains sensitivity at the least expense: WV-ELISA -> ENV-ELISA -> IFA.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.588 EFFICACY OF BLOOD ELUTED FROM FILTER PAPER FOR THE DETECTION OF ANTIBODY TO HIV-1 BY MICRO-ELISA, WESTERN BLOT ASSAY AND THE IMMUNOFLUORESCENT ANTIBODY TEST.

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Objective: To optimize the extraction of antibody from dried blood on filter paper (FP) while keeping sensitivity similar to sera in the Dupont whole virus ELISA (WV-ELISA), Cambridge Bioscience Recombinogen envelope ELISA, Dupont Western Blot (WB) and the Oswaldo Cruz Indirect Immunofluorescence Antibody Test [HIV-1 infected K37 cells] (IFA).
Methods: Finger prick blood was collected on Whatman 1 qualitative FP, stored in individual plastic bags at 4 C and used within 2 months. All FP samples were compared with corresponding sera collected at the same time. A 14 mm diameter circle of dried blood was cut from the FP. Each FPs contained 30 ul of blood - an estimated 15 ul of serum. A variety of eluants were tested.
Results: The best results for both ELISAs were obtained using 300 ul of 5% milk for 1 hr with agitation at room temperature. In studies 84 HIV-1 negative people using the WV-ELISA, the false positive rate for sera was 2.3% while all eluants were negative. The mean optical densities (SD) were 0.123 (0.037) for the FPs versus 0.064 (0.102) for sera. While the mean optical densities were 2 fold higher for FP, they were 3 fold lower than the cutoff with less variability. HIV-1 positive sera and FP eluants had similar titers in the WV-ELISA. Positive and negative HIV-1 eluants used in the WB increased background slightly, without affecting interpretation. Eluants and sera gave comparable results by IFA.
Conclusion: Four 14 mm FP blood disks provided enough antibody to complete a screening algorithm with sensitivity similar to sera.

S.C.589 WESTERN BLOT PATTERNS IN HIV INFECTED PATIENTS IN BRAZIL

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Objective: To define the Western blot patterns in HIV-EIA positive persons in Salvador, Bahia, Brazil.
Method: A total of 230 HIV-EIA positive sera were analysed by HIV Western blot (WB) (Du Pont) and results correlated with the AIDS patients classification.
Results: The sera were segregated into categories based on the manufacterer's criteria: negative, 41 (18%); probably negative, 23 (10%); indeterminate, 22 (10%); probably positive, 31 (13%); positive 113 (49%). All 113 positive sera had bands for p24, p31, gp41, and gp120-160. Fifty/113 (44%) of the sera were from AIDS class IV patients; 6 (5%) were AIDS class III, and 57 (50%) were AIDS class II. All probably positive sera had gp120-160 bands, 80% had gp41, 68% had p24, and 22% had p31 bands. In this group, 22 sera (71%) were from AIDS class IV patients. The indetermine group had 18 (82%) sera with p24 and 6 sera (27%) with gp120-160 bands. No AIDS class III or IV patients were in this group. The probably negative group had p17, p51 or p55 bands. None of these 23 sera were from AIDS class III or IV patients.
Conclusion: The WB pattern of AIDS patients in Bahia was characterized by p24, gp41, and gp120-160. The p31 band was the last to appear. The p24 was the most common band in the indetermine group. The criteria proposed by Du Pont for a positive WB are too rigid; the criteria standardized by the CDC are preferred.

S.C.590 COMPARATIVE EVALUATION OF PARTICLE AGGLUTINATION TEST (SERODIA) AND ENZYME LINKED IMMUNOSORBENT ASSAY FOR ANTI-HIV DETECTION.

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Objectives: To evaluate sensitivities and specificities of particle agglutination test and recombinant EIA in a developing country like India.

Methods: Initial screening of 1130 sera was done by Serodia HIV particle agglutination test (Fujirebio, Japan) and Wellcozyme recombinant EIA (Wellcome Diagnostics, England). Repeatedly positive sera were confirmed by Western Blotting (Du Pont USA).

Results: Analysis of data revealed that the sensitivity for the two tests was 99.56% and the specificities were 99.6% and 99.7% respectively, suggesting that the results of particle agglutination tests are comparable with those of EIA.

Conclusion: The particle agglutination test is a simple and rapid assay for anti-HIV detection in the developing countries and especially useful in the areas where Elisa kits and equipment are readily not available.

S.C.591 COMPARISON OF TWO ENZYMATIC ASSAYS, ABBOTT AND KARPAS, TO DETECT HIV ANTIBODIES IN HIGH-RISK PATIENTS AND BLOOD - DONORS.

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OBJECTIVE: The aim of this trial was to compare the performance of Abbott and Karpas assays to detect serum HIV antibodies.
METHODS: We included 1094 family blood donors, 38 AIDS patients, 8 patients with systemic lupus erythematosus and 214 randomly selected patients with other diseases. All sera were simultaneously tested by both assays. In those sera repeatedly reactive by either assay, except for sera obtained from AIDS patients, Western blot (WB) (Dupont) was done and it was considered positive with the presence of the least 2 of the following bands: gp160/120, gp41, and p24. The concordance was analyzed by Kappa index (K).
RESULTS: Seventy-nine sera are positive by Abbott and 81 by Karpas. Of these, 72 were positive by both methods, 7 only by Abbott, and 9 only by Karpas, K=0.89 Among the group of blood donors 8 sera were positive by Abbott (0.73%) and 10 by Karpas (0.91%). From a total of 21 WB done, 11 were positive, from these, 5 were also positive by Abbott and Karpas and 3 were false negative by each method. From the 10 WB-negative, 4 and 6 were false positive by Abbott and Karpas, respectively. The prevalence of HIV infection among family blood donors, based on WB results, was 0.73% .
CONCLUSION: Our data show a high concordance between Abbott and Karpas assays in HIV antibody detection, a high prevalence among family blood donors was found, and it is worrisome that 0.27% of sera were false negatives by either method.

S.C.592 HIV-1 TESTING POOLED BLOOD USING ELISA AND AGGLUTINATION METHODS

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OBJECTIVE: To evaluate the performance and efficiency of testing pooled sera in the Philippines.
METHODS: Sera were collected from blood donors and commercial sex workers. Known HIV seroprevalence is 0% and 0.1% respectively. Titration curves of low, medium, and high HIV antibody titer samples were established to determine optimum pool size in field conditions. 3,000 serum samples were tested singly and in pools of 1:5, 1:10 and 1:20. Two ELISA formats (Abbott and Organon Teknika Vironostika (OTV), and one agglutination test (Serodia HIV-1 of Fujirebio) were used. Pooling and single sample testing were compared. The sensitivity/specificity, and cost efficiency were analyzed. To test the validity of pooling in a low prevalence area, parallel studies with randomized known (+) samples among similar pools from the same subjects were performed. Supplemental testing of positive sera utilized WB/IFA.
RESULTS: Studies showed that optimum pool size varied according to the method used with 1:5, for two ELISA methods and 1:20 for the agglutination technique. Low cut off values affected detection of low HIV antibody titer-containing pools for OTV (1:10). With 1:10/1:20 pools both ELISA kits (X^2= .93) detected fewer HIV + pools than the agglutination test: Abbott vs agglutination $p < .01$, OTV vs agglutination $p < .05$. Pooling was demonstrated to be cost effective for large scale HIV testing for all 3 methods, while maintaining sensitivity and specificity.
CONCLUSION: HIV testing of pooled sera is useful for testing large numbers of sera in the Philippines and is cost effective while maintaining sensitivity and specificity. All test formats detected HIV containing samples at 1 to 5, the most practical recommendation for processing of smaller volumes. Additional studies will be needed as the HIV prevalence changes.

S.C.593 EVALUATION OF HIV TESTING STRATEGY FOR FIELD LABORATIRIES IN ZAIRE.

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OBJECTIVE : To evaluate one immunobinding and two agglutination tests for detecting antibody to HIV-1 in field laboratories in Zaïre.
METHODS : The HIVCHEK (Dupont, USA) was evaluated as a screening test with the SERODIA-HIV (FUJIREBIO, JAPAN) and RETROCELL (Abbott, USA) as supplemental tests. One Kinshasa Suburban and 4 Rural hospitals participated in the study. 1250 specimens from blood donors, suspected AIDS cases, persons practicing high risk behaviors, and pregnant women were screened by HIVCHEK; all reactive samples, indeterminates and 10% of the negatives were tested by SERODIA, RETROCELL and WESTERNBLOT. All specimens were also tested by ELISA (Genetic SYSTEM). Training, Quality Control, supervision and counselling approaches were also evaluated.
RESULTS : The three tests exhibited a sensitivity ranging from 82% to 97% and a specificity ranging from 97% to 99%. Some critical aspects of the quality control, supervision and counselling are to be reviewed.
CONCLUSION: The combination of two of those tests is a suitable HIV testing strategy in field laboratories of Zaïre. Further development of those tests is needed to increase their sensitivity and specificity.

S.C.594 EVALUATION OF THE FILTER PAPER TECHNIQUE FOR HIV ASSAYS

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WHO, Geneva, Switzerland.

Objective. To evaluate the filter paper technique as a means of collecting blood for HIV mass screening programmes in Zambia.
Methods. Blood was collected from the finger of 140 individuals attending antenatal clinic at clinics in Lusaka. Three to four drops of about 25 microlitres were spotted on an an a 0.25 mm thick paper until blood soaked and stored at room temperature. At the same time blood samples were obtained by venepuncture from the same individuals and serum separated. Each serum and filter paper sample was tested for HIV antibodies by Du Pont ELISA and Wellcozyme Recombinant. Western blot was done as a confirmatory test on serum samples.
Results. There was no difference in the results of specimens of filter paper and serum. All sample results were similar on ELISA and Wellcozyme recombinant. On three samples, however, when the test was repeated by Western blot the results were negative.
Conclusion. This study shows that filter paper technique results are similar to those obtained when serum is used. This paper, therefore, advocates the use of this technique in mass screening exercises because of its simplicity.

HIV Testing: New HIV-1 Tests

S.C.595 EVALUATION OF A RAPID SCREENING TEST (ABBOTT TESTPACK) FOR ANTIBODY TO HIV-1 IN DIVERSE POPULATION GROUPS

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Objective: To evaluate the sensitivity and specificity of the Abbott Testpack as a rapid screening test for HIV-1 antibody in geographically diverse populations compared to standard enzyme immunoassays (EIA) and Western Blot (WB).
Methods: Testpack utilizes recombinant HIV-1 antigens bound to nitrocellulose in a vertical line and anti-human IgG antibody in a horizontal line as a negative control. To assess sensitivity, 502 HIV antibody specimens from Africa, the Caribbean and US were tested according to the manufacturer's instructions. Sera from 596 patients attending an emergency department, and 50 patients attending a inner-city STD clinic were also evaluated. All sera were evaluated by EIA (Organon-Teknika), and repeatedly reactive sera by either EIA or Testpack were analyzed by Western Blot (Dupont).
Results: Of the 402 known HIV-1 WB positive specimens, 401 were positive by Testpack. Of the 646 consecutive specimens from the emergency department and STD clinic, 40 were EIA and WB positive. Testpack detected all 40 positive specimens and an additional 4 were weakly positive; 2 indeterminate by WB and 2 negative by WB. Two specimens that were EIA positive and WB indeterminate were negative by Testpack. Thus, sensitivity of Testpack was 99.8% and specificity was 99.7%
Conclusions: Testpack demonstrated high sensitivity and specificity for detection of HIV-1 antibody in geographically diverse populations comparable to commercially available EIA and WB. The assay was simple to perform with up to twelve specimens being tested in 10 to 15 minutes. All positive specimens were very easy to interpret with no reader to reader variability. This assay should be practical for use in developing countries and other clinical care settings.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.596 EARLY DETECTION OF SEROCONVERSION WITH A RAPID, PEPTIDE BASED TEST.

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Objective: To determine whether a peptide-based assay might be useful in resolving Western blot indeterminate specimens.
Method: Sera from 36 individuals entered in the Chicago component of the MACS were tested using a peptide-based, rapid, immunoassay (GENIE). At least 2 bleeds taken 6 months apart were tested from each individual. Western blot and HIV-1 EIA results were available for all bleeds tested. Eighteen (18) of the individuals remained indeterminate or negative by Western blot; 17 of these 18 remained nonreactive on the EIA. One of the 18 became EIA reactive; the blot pattern was p24 and gp120. The other 18 individuals seroconverted: Western blot results were initially negative or indeterminate and became positive.
Results: All 17 of the individuals who remained Western blot indeterminate or negative and EIA nonreactive were nonreactive on the GENIE. The one individual who was Western blot indeterminate and EIA reactive was reactive on the GENIE. Eight of the 18 individuals who seroconverted were reactive by the GENIE on the bleed prior to the EIA being reactive and the Western blot being interpreted as positive.
Conclusion: These results indicate that peptide-based tests may be useful in resolving some samples that are Western blot indeterminate.

S.C.597 VALUE OF A POL EPITOPE IN A PEPTIDE-BASED SCREENING TEST

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Objective : To study the cross reactions existing between an HIV1 Pol epitope and HIV2 Pol epitopes in order to detect HIV1, HIV2 or HIV1 + HIV2 double reactive samples.
Methods : 43 human samples were first tested by HIV1 and HIV2 western blotting tests (Diagnostics Pasteur = New Lav blot I and II) and site-directed serology kit (Diagnostics Pasteur = Peptilav 1-2) they were so classified as negative, HIV1, HIV2 our HIV1 + HIV2 reactive. These samples were then tested by a microtiter plate assay using synthetic peptides (Genetic Systems, USA) mimicking HIV1 or HIV2 ENV, GAG and POL protein epitopes: HIV1 : ENV 1, GAG 1, POL 2 mimicked by peptides 39, 88 and 124 respectively, HIV2 : ENV 2, GAG 2 mimicked by peptides 41-2-1, 25-2-2 respectively.

RESULTS :

Number of Samples Tested	commercial tests				Experimental peptide-based tests				
	NEW LAV BLOT HIV1	HIV2	PEPTILAV 1	2	ENV1	ENV2	GAG1	GAG2	POL 124
3	+	+	+	−/±	+	−/±	+	−/±	+
4	+	+	−/±	+	−/±	+	−/±	+	+
22	+	−	+	−	+	−	+	−	+
4	−	+	−	+	−	+	−	+	+
10	−	−	−	−	−	−	−	−	−

As can be seen from the above table, double reactive samples were always detected by the pol peptide used, whereas neither GAG1, GAG2, ENV1 or ENV2 could detect them with 100% safety. As far as nonreactive samples are concerned, the same results could be observed. Moreover all negative were identified as negative on the POL peptide.
Conclusion : To-morrow's AIDS screening tests will have to detect all isolates worldwide. In addition, ENV peptides have been known for their strong discriminative power and provide elevated sensitive tests. However, they do not allow 100% safe detection of all isolates; by contrast, the pol P124 peptide used could, in our hands, pick up all HIV reactive samples and give no false positive responses. Therefore it seems to be a good candidate for developing a mixed peptide based test, i.e. a test of broadscope, detecting all HIV isolates.

S.C.598 FEATURES OF WEAKLY REACTIVE SPECIMENS RELATED TO PERFORMANCE OF ANTI-HIV-1 ELISA ASSAYS.

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Objective: To characterize weak anti-HIV positive specimens relative to reactivity in 9 commercial anti-HIV-1 ELISA assays.
Methods: Random blood donor specimens (n=15) that were selected by immunoblot positivity (CDC/ASTPHLD criteria) and borderline positivity by anti-HIV-1 ELISA screening tests were further tested by RIPA, IFA, and P24 antigen assays. IgM and IgA HIV antibodies were detected by immunoblot after removal of IgG with protein G. The 15 specimens were tested with 9 FDA-licensed ELISAs, each by 2 independent laboratories.
Results: All 15 specimens were positive by RIPA and IFA. One was positive for P24 antigen. All 15 had detectable IgA HIV antibodies and 14 had IgM HIV antibodies. The individual ELISAs detected 10 to 15 of the specimens; only 2 of the 9 ELISAs detected all 15 positives in both laboratories. One ELISA detected 11 by the short procedure and 14 by the long procedure. Twenty-five of the 30 false negative results were on 6 specimens which had stronger IgA reactivity than IgM and more ENV than GAG antibodies. In an attempt to enhance ELISA sensitivity, we added enzyme conjugated anti-IgM or anti-IgA to the kit enzyme conjugated reagent. For 6 of 8 kits, this addition increased the O.D. values of falsely negative specimens to the positive range.
Conclusion: Weakly reactive specimens have IgM and IgA HIV antibodies that are detected to varying degrees by licensed ELISA tests.

S.C.599 CLINICAL EVALUATION OF A RAPID EIA FOR DETECTION OF ANTIBODY TO HIV-1

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OBJECTIVE:To evaluate the Murex SUDS HIV-1 Antibody Test as a rapid screening test for anti-HIV-1 antibodies.
METHOD:The SUDS HIV-1 Antibody Test (SUDS) is a 10 minute qualitative colorimetric assay which utilizes a proprietary test cartridge and microfiltration EIA. 7580 specimens obtained from volunteer donors, persons presenting for medical care at physicians' offices and emergency rooms, high risk individuals treated at an IV drug center and an STD clinic, HIV-1 seropositive individuals and patients with clinical AIDS were tested at nine clinical testing sites in the US. Testing was performed in parallel with a licensed HIV-1 EIA (EIA). Discordant specimens were evaluated using Western immunoblot or RIPA.
RESULTS:Using specimens obtained from a population presumed to be negative for HIV-1, the observed specificity as determined was 99.6%. The observed sensitivity with specimens obtained from a population presumed to be infected with HIV-1 was 99.4%. Results disclosed no significant differences between the SUDS Test and EIA with specimens obtained from the following sources:ER, STD clinic,physicians' offices,IV drug clinic,Africa and South America. Results of testing 4 seroconversion panels showed that the SUDS detected HIV-1 antibody equally as early or in some cases earlier than EIA. Results obtained by testing 500 serum/plasma pairs disclosed no significant difference between the reactivity of serum or plasma in the SUDS.
CONCLUSION:Murex SUDS HIV-1 Antibody Test provides a simple,rapid method for the detection of antibodies to HIV-1 in serum and plasma obtained from a variety of sources.

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S.C.600 DEFINITION OF AN AUTOMATED BLOOD SCREENING SYSTEM (ABSS) USING AN IMMUNOBEAD FLOW ASSAY (IBFA) FOR SCREENING ANTIBODIES TO HIV.

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Objective: To improve and automate the IBFA for detection of antibodies to HIV, shown by Scillian et al. (1989) to be highly specific and sensitive for the early detection of seroconversion.
Methods: ABSS instrumentation is designed as a unit which would identify, track and transfer all samples, under computer control, avoiding the potential for human errors. It can handle sufficient samples to satisfy the screening needs of a moderate size blood center. It requires a minimum of operator training (1 day) and does not require a dedicated operator as do most flow cytometers. Finally the ABSS would make use of the inherent attributes of a flow cytometer to detect different size beads and fluorescent signal of each bead, integrating thousands of replicate determinations carried out on solid phase microspheres.
Results: We found the FACScan cytometer (Becton-Dickinson, BD) to be both stable and reliable in addition to being under computer control. These qualities lend to its use in any routine clinical assay. In conjunction with BD, we have specified modifications to their FACSPrep robotics unit to positively identify samples to allow their tracking. Finally, the assay is being performed in a 96 well format filter bottom plate and the robot has been modified to provide a vacuum wash system. The ABSS is able to positively identify, track and transfer all samples. It has a throughput of about 300 donors per 8 hour shift. The system is calibrated and adjusted automatically on a daily basis allowing day to day comparison of the data. In addition, a user interface has been generated which incorporates point and click technology. Due to this simple user interface and the built in self-diagnostics, the system can be easily operated by any individual with minimal training.
Conclusion: The ABSS is designed to perform simultaneous screening for multiple serologic assays, required for batch testing of sera in blood centers.

S.C.601 COMPARISON OF A SYNTHETIC PEPTIDE-BASED ELISA AND A RECOMBINANT ANTIGEN ELISA WITH A VIRAL LYSATE-BASED WESTERN BLOT FOR DETECTION OF SEROCONVERSIONS TO HIV.

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Objective: To compare the ability of synthetic-peptide and recombinant antigen-based ELISAS with a Western blot (WB) procedure to detect early antibodies to HIV-1.
Methods: For the purpose of this study, seroconversions consist of an initial specimen having a WB negative or indeterminate (Ind.) result, followed by a reactive specimen. Some conversions may consist of multiple negative and reactive specimens. Samples for this study were originally submitted for routine diagnostic testing and had been stored at -70° C for up to 5 years. A total of 163 serum samples from 68 HIV-1 seroconversion cases were tested for the presence of anti-HIV by a synthetic peptide-based ELISA (IAF Biochem HIV-1 and HIV-2 EIA) and a recombinant antigen-based ELISA (Cambridge Bio-science Corp. Recombigen test). Results were compared to the WB determinations for each specimen.

Results:	IAF Biochem ELISA		CBC Recombigen ELISA	
	Negative	Positive	Negative	Positive
WB-Negative (n=58)	55	3*	57	1*
WB-Indeterminate (n=15) (p18 and/or p24)	2*	13*	4*	11*
WB-Reactive (N=90)	0	90	0	90

*Initial specimen of a seroconverter.
Conclusion: The IAF Biochem synthetic peptide ELISA appears to be more sensitive than the CBC Recombigen or the WB procedures for early detection of HIV-1 antibodies.

S.C.602 EVALUATION OF A RAPID 7 MINUTE ELISA FOR THE DETERMINATION OF ANTIBODY STATUS TO HIV-1

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Objective: The Serocard HIV Antibody Test Kit (SC, Disease Detection International, CA) is a rapid, 7 min, ELISA performed on a 2"x3" card using a proprietary membrane-based technology and a synthetic peptide made to gp41. This kit was compared to a 4 h EIA (Abbott Laboratories, IL) for the determination of antibody status to HIV-1.
Methods: The EIA was performed according to the manufacturers instructions with all positive samples being repeatably positive. Only sera positive by either EIA or SC were tested by Western Blot (WB, E.I. DuPont De Nemours and Co., Inc., DE). A positive result by WB was defined as a sample having at least two of the following bands present, gp120/160, gp41 or p24. Both frozen as well as fresh samples were tested.
Results: Of the 383 samples evaluated 254 were negative by EIA and SC; 118 were positive by all three methods; 6 were positive only by EIA; 2 were positive only by SC; 1 was positive by both EIA and SC but negative by WB; 2 were negative by SC but positive by both EIA and WB. Therefore, in this study the sensitivity of the SC compared to EIA was 93.7% and the specificity was 99.2%. There were 129 samples tested by WB due to a positive EIA or SC result. Of these 129 there were 5.4% (7/129) false positives by EIA and 2.3% (3/129) false positives by SC.
Conclusions: Therefore, SC could serve as a rapid positive screen with all positive results confirmed by WB and all negatives repeated by an EIA as used in this evaluation. These results show great potential for this simple, rapid method that requires no instrumentation and is easy to interpret.

S.C.603 A COMPARISON OF 3 HIV ANTIGEN DETECTION KITS IN SEQUENTIAL SERA FROM HOMOSEXUAL MEN

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Objective: To compare the performance of 3 commercially available HIV antigen (Ag) detection kits on sequential sera collected over 4 years.
Methods: Coulter (C), Abbott (A), and DuPont (D) HIV Ag detection kits were used to test 661 sera from 64 members of the Toronto Sexual Contact Study. Sera were collected quarterly over four years from 8 persistently seronegative men, 15 seroconverters, and 41 seroprevalent cohort members. 21 of the seropositive men had developed AIDS.
Results: Ag was not detected in any seronegative man. Two seroconverters were Ag+ in the specimen immediately preceding seroconversion (all kits). Ag was detected in 22/56 seropositive participants. Concordant results (all kits) were obtained on 350 Ag- and 93 Ag+ specimens from 43 men. Minor discrepancies were noted in 9 cases. Major discepancies in the time of appearance of Ag was noted in 12 of 15 cases: (A) detected Ag earliest in 11 cases, (D) detected Ag at the same visit as (A) in 5 cases, 3 months earlier than (A) in 1 case, and 3 to 30 months in 6 cases (mean delay, 9 months). (C) detected Ag at the same visit as (A) in 2 cases, 3 - 30 months later in 10 cases (mean delay, 9 months). Only (D) produced nonspecifically reactive results (18 specimens).
Conclusions: Relative sensitivity of the kits: (A) 99.2%, (D) 81.2%, (C) 79.0%. Relative specificity of the kits is: (A) 100%, (D) 97.5%, and (C) 100%. Sequential specimens from individuals in which Ag appeared allowed the critical comparison of kit performance.

S.C.604 ABBOTT MATRIX: AN OBJECTIVE IMMUNOASSAY SYSTEM FOR HIV CONFIMATION

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Objective: To develop an HIV confirmatory system which is more sensitive and specific than Western Blot.
Methods: Purified recombinant proteins of HIV-1 and HIV-2 are immobilized on a nitrocellulose solid phase. The semiautomated dot blot assay is conducted in a 35 C incubator automated for timed incubations, sample removal, washing, drying and reflectance reading. A digital printout records the intensities of the color reactions. The assay requires less than 5 hours to perform.
Results: This assay, based on testing of serial dilution panels, is 4 to 128-fold more sensitive than the current commercially available Western Blot assays for HIV-1 or HIV-2 antigens. Results from a 49 member seroconversion panel, consisting of 7 donors, indicate that the dot blot assay confirms the presence of antibody to HIV-1 7 to 10 days earlier that Western Blot, using the CDC criteria for positive interpretation of Western Blot. In addition, 150 HIV-1 and 15 HIV-2 positive samples confirm as positive by both the dot blot and Western Blot assays. One hundred HIV-1 ELISA negative samples showed no reactivity by the dot blot assay. In a blind panel of 91 known negative, Western Blot indeterminate samples, 71 were negative by the dot blot assay.
Conclusion: The Abbott MATRIX immunoassay system for HIV confirmation offers enhanced performance over the Western Blot with the additional advantage of an objective readout.

S.C.605 DIAGNOSIS OF HIV INFECTION WITH A DUAL RAPID ASSAY SYSTEM AS AN ALTERNATIVE TO ELISA AND WESTERN BLOT TESTING: AN EVALUATION IN HIV SYMPTOMATIC AND ASYMPTOMATIC AFRICAN POPULATION GROUPS.

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Objective: 1). To determine sensitivities and specificities of 2 rapid, instrument free anti-HIV assays in HIV symptomatic and asymptomatic populations in Kinshasa; 2). To determine the efficiency of serially combining these assays with another simple test as an alternative to diagnosing HIV infection with ELISA and Western blot (Wb).
Methods: Sera from an eventual total of 1500 consecutive blood donors, 1500 women delivering consecutively at a maternity and 2000 sequential patients with clinical suspicion of HIV infection are being tested with HIVCHEK (HCK) (DuPont) (DP), HCK1+2 (DP) and ELISA HIV1/2 (DP). Sera with positive HCK are tested with Serodia (SERO) (Fujirebio). Sera with at least 1 positive assay are then tested with HIV-1 Wb (DP) of which negatives (Neg) and indeterminates (Ind) are tested with HIV-2 Wb (DP). Samples testing Neg with all screening assays or Neg/Ind by Wb are considered true negatives. CDC criteria for Wb interpretation have been followed.
Results: Through 1/1/90 testing has been completed on 2635 sera; 859 were positive by HIV-1 Wb, 1 by HIV-2 Wb.
Table. Accuracy of rapid assays: single and serially combined

	HCK	HCK1+2	HCK&SERO	HCK1+2&SERO
Sensitivity (HIV-1)	96.5%	97.8%	95.0%	96.0%
Specificity (HIV-1)	98.6%	98.1%	99.7%	99.4%

Conclusion: In this ongoing study the HCK and HCK1+2 appear to be good screening assays which can be serially combined with SERO to obtain excellent specificity, thus offering a valid alternative to the expensive, time consuming and machine dependant ELISA and Wb testing. One single HIV-2 infection was detected, suggesting low HIV-2 prevalence in Kinshasa.

S.C.606 COMPARATIVE EVALUATION OF 2 FIRST GENERATION, 2 SECOND AND 1 THIRD GENERATION ANTI-HIV ELISA KITS IN 3 ZAIRIAN POPULATION GROUPS

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Objectives: To compare sensitivities and specificities of 5 commercial anti-HIV ELISA in symptomatic and asymptomatic high HIV-1 prevalence populations in Kinshasa.
Methods: Sera from 500 prostitutes consecutively examined at a women's health care center (Gp1), from 500 sequentially examined patients with clinical suspicion of HIV infection (Gp2) and from 1000 factory workers and spouses (Gp3) were tested with Genetic Systems LAV EIA (GenSy), Organon Vironostika (Viron), DuPont (DuP) HIV-1 Recombinant (DP-1), DuP HIV-1/HIV-2 (DP-1&2) and Abbott Recombinant HIV-1/HIV-2 (Ab-1&2). Samples with a least 1 repeatedly positive ELISA were tested with HIV-1 Western blot (Wb), of which negative or indeterminate sera underwent HIV-2 Wb (DuP). Wb interpretation followed CDC criteria.
Results: 1068 sera were tested with HIV-1 Wb, 320 with HIV-2 Wb. As determined by Wb, HIV-1 prevalences were 34.2% in Gp1, 51.8% in Gp2, 1.9% in Gp3 and 22.5% overall (Ov); HIV-2 prevalence was 0% in all groups.

	Sensitivity (%)				Specificity (%)			
Gp	1	2	3	Ov	1	2	3	Ov
GenSy	98.8	98.5	78.9	97.8	86.3	90.5	88.2	88.1
Viron	97.1	97.7	73.7	96.4	100	99.2	99.6	99.6
DP-1	100	100	99.4	99.8	75.1	70.1	74.2	73.8
DP-1&2	98.2	98.8	100	98.7	86.6	82.2	77.8	80.3
AB-1&2	95.9	98.1	78.9	96.4	99.4	92.9	99.3	98.3

Conclusions: DP-1 and DP-1&2 were the most sensitive assays detecting very weak seropositives in Gp3 but showing unacceptable low specificities. Viron, a first generation ELISA had the highest specificities. Single HIV-2 infection was not detected, suggesting low HIV-2 prevalence in Kinshasa, Zaire.

S.C.607 THE USE OF SYNTHETIC PEPTIDES FOR DIAGNOSTICS OF HIV INFECTION

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Objective: Wide range of HIV synthetic peptide have been studied for development effective and completly safe commercial sero-diagnostic ELISA kit.
Methods: Synt. .tic peptide fragments from HIV-1 and HIV-2 main proteins synthesized in Institute of Immunology (Moscow), Shemyakin Institute of Bioorganic Chemistry (Moscow), Institute of High Purity Biological Substances (Leningrad) have been analysed with human sera in ELISA. Immunoreactive peptides were coupled to protein and used to immunize rabbits.
Results: Four synthetic peptides (two from the N-terminus part of HIV-1 gp41 and one from C-terminal end of HIV-1 gp120 and one from the N-terminus part of HIV-2 gp32) were found to be immuno-reactive with sera from HIV-1- and HIV-2-infected persons, respectively. A new ELISA kit "Peptoscreen-2" was developed based on the use of a mixture of peptides and tested on a broad panel of serum samples. The sensitivity and specificity of new assay were over 99%. The antipeptide rabbit sera were used as safe positive control in ELISA kit.
Conclusion: Effective determination of HIV-1 and HIV-2 a ti-bodies suggests that peptide ELISA kit is suitable for primary testing and as a confirmation test.

S.C.608 HIV RECOMBINANT PROTEINS AND SYNTHETIC PEPTIDES AS REAGENTS FOR SEROLOGICAL TESTS

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Objective: Wide range of HIV synthetic peptides and recombinant E.coli-derived proteins have been obtained and investigated for serodiagnostic kit.
Methods: Representative collection of HIV-positive and negative sera was tested with peptide and recombinant ELISAs.
Results: Three HIV-1 synthetic peptides and three HIV/BH10 recombinant proteins (two encluded aa sequenses from ENV-proteins, one encluded aa sequence from GAG-protein) were found to be most immunoreactive with HIV positive sera. Each of recombinant proteins was recognised by >95% of positive sera, none of GAG positive sera was negative with ENV-proteins.
Conclusion: Three synthetic peptides were used in HIV Peptoscreen-2 diagnostic ELISA test. ENV recombinant ELISA was developed with sensitivity and specificity >99%. Either synthetic peptides or recombinant antigens sharing immunodominant regions of HIV ENV-proteins provided sensitive and specific ELISA serodiagnostic.

HIV Testing: HIV-1 Tests of Urine and Saliva

S.C.609 PRESENCE OF HIV ANTIBODY IN DILUTED URINE USING A VIRAL-BASED HIV-1 EIA KIT HAVING IMPROVED SENSITIVITY.

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OBJECTIVE: To detect antibody to human immunodeficiency virus (HIV-1) in diluted urine.
METHODS: Abbott serum/plasma screening EIA's for HIV-1 antibody-based on either affinity-purified viral antigens (LN03A11) or HIV-1 recombinant proteins (LN01458) were used according to the manufacturer's instructions except: for the viral test, the urine was diluted 1:1 with the kit specimen diluent and for the recombinant test, the urine was used without dilution. Paired serum and urine samples were tested and EIA-positive samples were confirmed by western blot.
RESULTS: Using the 03A11 test, 232/236 urine samples were correctly identified as negative (98% specificity), while 304/330 urine samples were correctly identified as positive (92% sensitivity). For similarly paired serum/urine samples using the recombinant test, 94% sensitivity and specificity were obtained. In contrast, a viral-based EIA from another manufacturer had 99% specificity but only 74% sensitivity on undiluted urine. Detectability of HIV-1 antibody was in part related to urine protein concentration.
CONCLUSION: This study demonstrates the presence of HIV-1 antibody in diluted urine and its detectability with semi-automated assays designed for plasma and serum.

S.C.610 SENSITIVE AND SPECIFIC METHODS FOR DETECTING ANTI-HIV IN URINE:

Parry, John V*; Connell JA*; Mortimer PP*; Duncan J**; Johnson AM***; Hambling MH****; Barbara J *****; Evans BA******. *PHLS Virus Reference Laboratory, London, UK,**Wellcome Diagnostics, UK, ***Middlesex Hospital, London,****PHLS Leeds, UK,*****N. London Blood Transfusion Centre, ******West London Hospital, UK.

Objective: To develop methods which are sufficiently sensitive to detect anti-HIV in urine and to investigate their accuracy for screening.
Methods: Without prior knowledge of HIV status, untreated urine specimens from Genito-Urinary Medicine patients and blood donors were tested for anti-HIV by a simple IgG capture particle adherence test (GACPAT), by a rapid IgG capture ELISA (GACELISA), by 4 commercial EIAs and by Western blot (WB). Total IgG concentrations in the urine specimens were also determined.
Results:

Test	No. Tested	true Positive	false negative	true negative	false positive	accuracy
GACPAT	711	158	0	551	2	99.7%
GACELISA	711	157	1	553	0	99.9%
Wellcozyme HIV1+2	452	76	37	325	14	88.7%
Abbott rDNA HIV1/2	93	38	7	39	9	82.8%
Behring HIV1+2	83	17	33	31	2	57.8%
Abbott HIV1 (viral)	177	63	6	13	95	42.9%

By WB, anti-gp 160 was detected in the urine of all 25 seropositives tested; 18 had additional reactivities. No bands were seen from 19 seronegatives. The mean IgG concentration in seropositives' urine was 3.6mg/L, significantly higher than the 1.2mg/L mean for the seronegatives ($p<0.001$).
Conclusion: Class-specific antibody tests (GACPAT, GACELISA) reliably detect anti-HIV in urine and could provide HIV prevalence data that was previously unobtainable.

S.C.611 EVALUATION OF SALIVA AS AN ALTERNATIVE TO BLOOD FOR HIV SEROPREVALENCE TESTING.

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Objective: To evaluate the use of saliva as an alternative to serum for HIV antibody (Ab) testing, particularly for unlinked seroprevalence studies.
Methods: Frozen saliva from men with known HIV serostatus (94 EIA+/WB+ and 72 EIA-/WB-) was provided from the Toronto Sexual Contact Study. Also, serial saliva specimens were available from 5 seroconverters in the cohort. Saliva specimens were treated to a concentration of 0.01% NP40 and 0.01% Triton X, prior to testing with the Cambridge Bioscience Corp. Recombigen Kit (CBC). The sample tested was increased from 10 ul to 50 ul, and a 30% gray zone (gz) under the cutoff value was incorporated. Saliva (50 ul) was also tested with an in-house Western blot (WB) procedure using an anti-IgG, IgA, IgM (goat) alkaline phosphatase conjugate.
Results: Ab was detected simultaneously in saliva at seroconversion in all five cases (100% sensitivity [Se]; 100% specificity [Sp]). For the remaining specimens:

	CBC (Saliva)			WB (saliva)		
Serostatus	+	gz	-	+	gp41 only	-
HIV +	89	3	2	90	4	0
HIV -	0	0	72	0	0	72

Conclusion: Relative to serum, Se was 97.8% (CBC) 95.7% (WB) for seroprevalent specimens. Sp was 100% for CBC and WB. Se may be improved by increasing saliva volume in both CBC and WB. Saliva provides an alternative to serum for unlinked seroprevalence studies.

S.C.612 SALIVARY ANTI-HIV ASSAY BY ELISA TEST.

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Department of Medical Technology* and Medicine**, Chulalongkorn University Hospital, Bangkok, Thailand and Diagnostic Pasteur***, Paris, France.

Objective: To evaluate the performance of a commercial ELISA kit (Diagnostic Pasteur) in the detection of salivary anti-HIV.
Methods: Saliva samples from 241 Western blot confirmed anti-HIV seropositive cases and 81 seronegative low risk persons were tested for anti-HIV using Diagnostic Pasteur ELISA kit. The saliva was mixed in equal volume with sample diluent from the test kit before proceeding through the assay protocol with anti-human IgG peroxidase conjugate. The cut-off value was determined from the arithmatic mean of the O.D. from normal saliva plus 4 standard deviations ($\bar{X}$+4SD).
Results: False positivity was not found in normal using the above criteria for cut-off. Saliva from 227 out of 241 seropositive individuals were anti-HIV positive, a sensitivity of 94.8%. All of the 14 sialonegative Western blot analysis of 21 anti-HIV positive saliva showed positive anti-gp160 IgG in 20 specimens. Anti-gp41, anti-24 and other bands were also found but with much lesser frequency. Using anti-human IgA peroxidase conjugate in the Western blot analysis, anti-gp160 IgA was detected in 3 out of 5 saliva samples.
Conclusion: Commercial anti-HIV ELISA kit can be satisfactorily used to detect salivary anti-HIV with only minor modifications in dilution and cut-off reading. Its sensitivity and specificity are 95% and 100% respectively. Almost all of the salivary antibodies is IgG directed against gp160.

S.C.613 ANALYSIS OF HIV ANTIBODIES IN SERUM VERSUS WHOLE SALIVA

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Epitope, Inc., Portland, OR; V.A. Medical Center, Portland, OR; San Francisco General Hospital, San Francisco, CA.

Objective:
To elucidate differences between HIV antibodies in serum versus whole saliva.
Method:
Matched blood and saliva samples were collected from 170 patients at San Francisco General Hospital and Portland V.A. Medical Center. Whole saliva samples were collected by a 5ml oral rinse. Each sample was tested for HIV antibodies by Western Blot. Total immunoglobulin and IgG, IgM, and IgA levels were measured by an immunodot blot technique. Serum and saliva were tested for p24 antigen.
Results:
All oral immunoglobulin specimens from seropositive individuals reacted with gp120/160, but 16% of the specimens showing strong p24 in serum showed no p24 antibody in saliva. P24 antigen testing showed no correlation with p24 antibody levels. Total oral immunoglobulin levels averaged 80µg/ml. The only oral antibody class responsible for Western Blot reactions was IgG. Relative levels of IgG/IgM/IgA averaged 32%/4%/64%, respectively.
Conclusions:
Certain HIV antibodies in the oral cavity can be detected by Western Blot analysis with accuracy comparable to serum. Oral immunoglobulin levels average 1% of serum levels.

HIV Testing: Western Blots

S.C.614 INDETERMINED HIV1 WESTERN BLOT PROFILES : INVESTIGATION OF THE DIFFERENT KINDS OF P25 REACTIVITIES

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Objective : The specificity of the "only HIV1 GAG" antibody responses in Western Blot and their significance in terms of HIV infection remain unclear and questionable. Our purpose is to investigate the different "origins" of such reactivities and, if possible, to propose additional assays to exclude non HIV infection related immunoreactivity.
Methods : 10 positive and 32 indeterminate HIV1 Western Blot samples (with at least an anti-P25 band) were tested with an anti-P25 Elisa test based on native P25 and/or recombinant P25 protein. Each sample was tested before and after an antigen blocking assay performed by adding increasing amounts of P25 recombinant protein to each one. To complete the investigation, human anti-P25 samples were checked against 3 different monoclonal antibodies in a competition anti-P25 Elisa assay.
Results : The HIV1 positive samples reacted with the P25 protein in Elisa and were neutralized by the recombinant P25 antigen.
Among HIV1 Werstern Blot indeterminate samples, different types of reactivity could be observed :
- no P25 Elisa reactivity,
- P25 Elisa positive response not neutralized by adding antigen to the samples,
- P25 Elisa positive response significantly neutralized during the blocking assay.
Conclusion : At least three types of reactivity might be taken into account to explain indeterminate HIV1 Western Blot results :
- non specific IgG binding at P25 level : this reaction may be ruled out by antigen blocking assay,
- antibody reactivity against at least an epitope shared with retroviral, animal... species,
- anti-HIV P25 antibody reactivity in the absence of ENV antibodies.
Competition anti-P25 Elisa testing of the anti-P25 samples with a panel of monoclonal antibodies might allow the differentiation between the last two types of indeterminate reactivies. This study is still in progress.

S.C.615 ATYPICAL WESTERN BLOT PATTERNS AND HIV 1 INFECTION.

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Objective: to understand the meaning of atypical, sometimes transient, Western Blot (WB) patterns in serum samples of healthy blood donors repeatedly anti-HIV 1 EIA antibodies positive.
Methods: out of 198837 healthy blood donors, 144 repeatedly anti-HIV1 EIA+ reacted at WB only to one or two gene products (indeterminate-WB). Several EIA and confirmatory tests (WB,RIPA),to detect HIV1,HIV2,HTLV1 Ab.HIV1 Ag and also HLA Ab and immunological status, were investigated. On 75 donors HIV1 cultures and ISH were performed.Follow-up has been carried out since two years.
Results:94(0.047%) out of 198837 healthy blood donors were at WB reactive to gag,pol,env HIV1 gene products;144(0.072%) expressed atypical WB: 76 reacted to p17 and/or p55,43 to p24 and/or gp41;11 to gp41 and/or gp120/160; 6 to p17 or p24 and gp160. HIV1 Ag was found in serum with the bands: p24(1) p24,gp120/160(1);gp41,120/160(1). One donor with p24 band seroconverted six months later.The ISH+ donors showed the bands: p24(3);p24 and gp120/160(3);p17(1);gp41(1);p24,gp41,p55(1);gp41,120/160(1).
Conclusion:our preliminary data don't permit to correlate WB atypical patterns and HIV1 infection and suggest followup of indeterminate WB.

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S.C.616 HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1) ANTIBODY TESTING: ACCURACY OF WESTERN BLOT RESULTS

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Objective: The Western blot (WB) is a supplemental test commonly used to detect antibodies to HIV-1. In 1986, the Centers for Disease Control (CDC) implemented a performance evaluation program to evaluate the performance of laboratories that test for HIV-1 antibody, identify problems in testing, and improve the quality of the testing process.
Methods: Laboratories participating in the CDC Model Performance Evaluation Program furnished results after testing sample panels sent to them in August and November 1989. The panels consisted of 10 samples that were negative, positive, and weak-positive donor material; some samples were duplicate pairs. Not all laboratories received identical panels.
Results: Approximately 22% of the laboratories furnishing results for the two shipment periods reported that they performed WB. No false-negative interpretations were reported for the positive samples compared with 3 (0.3%) false-negatives for the weak positive and 2 (0.4%) false-positives for the negative samples. Eleven (2.4%) indeterminate interpretations were reported for the negative samples, 24 (3.2%) for the positive, and 258 (26%) for the weak-positive samples. For every weak-positive sample, participant laboratories reported indeterminate interpretations that, in some cases, were as high as 50%.
Conclusions: In general, the WB kits were sensitive and specific. Most laboratories did not experience difficulty in testing the positive or negative samples, but did experience difficulty in testing the weak-positive samples.

S.C.617 A COMPARATIVE STUDY OF THE IMMUNOFLUORESCENT ANTIBODY (IFA) AND WESTERN BLOT (WB) CONFIRMATORY TESTS FOR HIV IN A HIGH RISK PATIENT POPULATION

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Objective: To assess the agreement between IFA and WB HIV test results.
Methods: Sera were collected from patients at 8 sexually transmitted disease clinics between 1/89-12/89 and tested by ELISA for HIV. Repeatedly reactive ELISAs were confirmed with IFA and WB tests (DuPont kit). A positive WB was defined using Food and Drug Administration/DuPont criteria-p24 and p31 and (gp41 or gp120/160) bands. The percentage agreement between IFA and WB tests was evaluated.
Results: Repeatedly reactive ELISAs occurred in 744 (2.8%) of 26,570 specimens. Of the 743 specimens available for confirmatory testing, 2 (0.3%) were non-specific by IFA, 60 (8.1%) were indeterminate by WB. Of the 682 specimens testing negative or positive for either test, agreement occurred in 99.1% (676/682). The most frequent discrepancy occurred in 48 (6.5%) of 743 specimens in which the IFA was positive but the WB indeterminate. Discrepant results occurred in 54 (8.1%) of 665 males tested and in 12 (15.6%) of 77 females tested. No repeatedly reactive ELISA specimen was negative for IFA and negative for WB.
Conclusion: The percentage agreement between IFA and WB tests of ELISA reactive specimens was very high; however, IFA yielded a significantly lower number of non-specific results. IFA may be a more sensitive assay than WB. Further comparisons between IFA and WB should be done incorporating polymerase chain reaction testing.

S.C.618 IMPACT OF COMMERCIAL BLOOD SPOT ELUTION BUFFERS ON WESTERN BLOTS USED IN THE CDC HIV SURVEY ON CHILDBEARING WOMEN.

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Objective: To evaluate the sensitivity, specificity, and reproducibility of two commercial "Mini" Western blots (WB) for blood spot specimens eluted using 5 different commercial buffers approved for the CDC Survey on Childbearing Women.

Methods: One hundred sera were assayed with the Genetic Systems PBS Integra and the Immunetics/Organon Miniblotter system. Banding patterns from these 2 methods were compared for samples eluted with buffers from Genetics Systems, Du Pont, Electro-Nucleonics, Organon,and Abbott enzyme immunoassays specially modified for dried blood spot specimens.

Results: The sensitivities of the two assays varied markedly for antibodies to certain viral proteins. The Miniblotter was more sensitive for p24 and 120 and the PBS Integra for p17, p31, and gp41. All diluents gave comparable results except for Abbott diluent which reduced the sensitivity of both methods.

Conclusions: 1. The "Mini" Western blot is an acceptable alternative to strip methods. 2. Both methods are acceptable for use in the CDC survey. 3. PBS Integra was less sensitive to different buffers than the Miniblotter.

HIV Testing: Polymerase Chain Reactions

S.C.619 EVALUATION OF THE POLYMERASE CHAIN REACTION (PCR) FOR THE DETECTION OF HIV PROVIRAL DNA IN PEDIATRIC SPECIMENS

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OBJECTIVE: To determine the sensitivity and specificity of PCR for diagnosis of HIV infection in infants and children using small volumes of whole blood.
METHOD: Whole blood specimens were obtained from 42 pediatric patients (33 seropositive or seroreverter and 9 seronegative babies). Peripheral blood lymphocytes (PBLs) were isolated from small volume duplicate samples (0.3-1 ml) by our microcentrifuge adaptation of the ficoll hypaque separation technique. Crude lysates of the PBLs were prepared for analysis by PCR according to the method of Higuchi [1989]. Independent amplifications using primers targeted to the gag (SK38, 39) and env (SK68, 69) regions were performed on aliquots of each lysate and analyzed after liquid hybridization with radiolabelled probe (SK19 or SK70, respectively), PAGE, and autoradiography.

RESULTS:

PATIENT GROUP	NO. TESTED	NO. PCR POSITIVE
Negative Controls (2-30 mos)	9	0
Indeterminate - Seroreverters (10.5-23 mos)	3	0
- P0 (<1 wk-22 mos, mean 4.9 mos)	15	1 (<1 mo)
HIV Infected - P1 (5 wk, 6 wk, 7 mos)	3	3
- P2 (7 mos-60 mos, mean 22 mos)	12	12

In addition, all 11 adult blood donor specimens coprocessed with the pediatric specimens were PCR negative. PCR results were reproducible on duplicates and sequential specimens from any one patient. PCR was as sensitive as culture.
CONCLUSION: PCR for HIV is specific and shows promising sensitivity on small volume pediatric samples prepared by our microcentrifuge method.

S.C.620 IMPROVEMENTS OF POLYMERASE CHAIN REACTION FOR DETECTION OF HIV ANTIGENS

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Objective: To detect small amounts of HIV antigens in clinical samples more easily, rapidly, safely and stably by new application methods of polymerase chain reaction (PCR).
Methods: (1)Non-radioactive probes were produced by plasmid-inserted HIV-LAV, primers, digoxigenin-labelled UTP and others using PCR. (2) Proviral DNAs were extracted without phenol by modified Ou's method from peripheral blood lymphocytes and filter paper (5 mm diameter) absorbed blood.(3) Southern blot and dot blot methods were compaired in each sample using image analyzer. (4) Heat stability of proviral DNAs on the filter papers and the inactvity of HIV were compaired at 37°C, 60°C and 95°C when papers were dried.
Results: Sample proviral DNAs were detected more sensitibly by digoxigenin-labelled probes than by 32P labelled probes. Dot hybridization method was useful to deal with many samples simultaniously with sufficient sensitivity. Proviral DNAs were detected similarly in both of heated and non-heated filter papers. Image analyzer was useful to quantify the results.
Conclusion: Our developed methods were useful compairing with the former methods for detecing HIV from clinical samples.
This study was supported by the grant from Japan Health Sciences Foundation.

S.C.621 SENSITIVE DETECTION OF HIV-1 DNA ENRICHED BY MOLECULAR HYBRIDIZATION

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Objective: Quantitative detection and restriction endonuclease mapping of HIV-1 provirus which is faintly present in the genomic DNA from infected persons.
Methods: A trace of cloned HIV-1 DNA or the DNA from HIV-1-infected cell lines were mixed with 1 mg of calf thymus DNA. A mixture was digested with a restriction endonuclease, denatured, and subjected to molecular hybridization with HIV-1 ssDNA bound to Sepharose 4B gel (Pharmacia). The bound DNA was eluted and analyzed by Southern blotting using ^{32}P-labeled HIV-1 ssDNA as a probe.
Results: By means of our technique, HIV-1 DNA was enriched about 300 folds with a recovery rate of 60%. Restriction map of HIV-1 DNA of up to 0.0001 copy per haploid genome was determined.
Conclusion: We have developed a technique to enrich HIV-1 DNA selectively and to determine the restriction map. This technique will be a useful tool for quantitative detection and genomic diversity of HIV-1 provirus present in peripheral blood cells or organs of infected persons, and provide the substrate DNA for more sensitive detection by the polymerase chain reaction.

HIV Testing: Combined Assays

S.C.622 MULTICENTRIC CONTROL OF HIV1 AND HIV1 + 2 EIA TEST KITS LOTS IN BLOOD TRANSFUSION IN FRANCE

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and the Retrovirus Study Group of the French Society of Blood Transfusion.

Objective : Systematic permanent sensitivity control of anti-HIV1 and anti-HIV1 + 2 screening test kits in use in Blood Transfusion in France.
Methods : The Retrovirus Study Group has started since the 12/1/88 a systematic permanent control of all test kits lots in use in 12 different laboratories using a common panel of 10 discriminant samples : 3 HIV2, 5 HIV1 (3 of them early seroconversions) and 2 negatives.
Results : Between 12/1/88 and 15/1/90 this panel has been studied 366 times on 196 different lots of 9 different tests. Results have been analysed tests by tests and lot to lot in three sequential 4.5 months periods. Preliminary results of mean ratio of sample absorbance to cut-off for the 2 first periods are shown for the 5 each HIV1 and the 3 HIV2 in the following table :

		HIV1	HIV2
Elavia I	D. Pasteur	3.19/3.49	6.39/5.20
Rapid'Elavia	D. Pasteur	3.08/3.63	6.09/7.02
Vironostika	Organon	3.08/2.98	7.15/7.67
HIV Recomb.	Abbott	2.79/3.35	2.41/1.52
Env 9	Du Pont	2.99/3.17	1.13/1.22

		HIV1	HIV2
Wellcozyme	Wellcome	1.82/1.65	0.88/0.82
Rapid'Mixt	D. Pasteur	- /3.20	- /8.10
HIV1/HIV2 Recomb.	Abbott	- /3.07	- /6.14
Enzygnost HIV1 + 2	Behring	- /6.75	- /7.23

Lot to lot variations are observed. All HIV2 are well detected by HIV1 + 2 tests.
Conclusion : Such a control is a valuable tool to monitor the quality of anti-HIV screening tests for blood donations. It emphasizes the interest of HIV1 + 2 double specificity tests.

S.C.623 A SENSITIVE AND SPECIFIC ELISA FOR THE DETECTION OF ANTIBODIES TO HIV-1 AND HIV-2

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Objective: To develop an ELISA test system that is highly sensitive and specific for the detection of antibodies to both HIV-1 and HIV-2 in human serum or plasma.
Methods: An ELISA test in a microwell format incorporating three recombinant antigens and a synthetic peptide in a solid phase has been developed. The recombinant antigens represent the HIV-1 env, pol and gag regions, while the synthetic peptide represents the HIV-2 env region. The procedure requires a specimen incubation step followed by incubation with an antihuman antibody conjugate. Both steps may be either 30 minutes or one hour each at 37°C. The final step is a 30 minute substrate reaction at room temperature. The resulting color reaction is optically measured to determine sample reactivity.
Results: After testing over 300 HIV-1 and 55 HIV-2 Western blot confirmed antibody positive samples the assay yielded 100% sensitivity. Of the 55 HIV-2 samples 11 were nonreactive when tested on an HIV-1 only assay. In addition, the ELISA had a greater than 99.5% specificity rate in a test of over 1000 normal donor samples and showed no false reactivity in a test of 20 samples from patients with Rheumatoid Arthritis and Systemic Lupus Erythematosus. Finally, the HIV-1, HIV-2 ELISA outperformed currently licensed HIV-1 viral lysate based tests on HIV-1 seroconversion specimens.
Conclusion: The above described assay will enable simultaneous screening of serum or plasma for antibodies to HIV-1 and HIV-2 with superior sensitivity and specificity to currently licensed tests.

S.C.624

PERFORMANCES OF 7 anti-HIV1 + HIV2 ELISA KITS

COUROUCÉ, Anne-Marie and the Retrovirus study Group of the French Society of Blood Transfusion - France.

Objective : To evaluate and to compare the sensitivity and the specificity of 7 anti-HIV1 + HIV2 Elisa kits.
Methods : Sensitivity was assessed by testing a common panel of 75 HIV1 (24 of them from early seroconverters), 39 HIV2 samples and 22 dilutions of 7 HIV2 specimens. Specificity was determined by testing 2000 blood donor (BD) specimens and a common panel of 44 HIV-negative samples with gag reactivity only (GRO) either on "p24" (25) or on "p18" (19).
Results : All the 7 kits recognize all the undiluted HIV1 and HIV2 positive samples. Comparison of sensitivity and specificity is given in the table : sensitivity is expressed by the reactivity level (mean ratio sample/Cut-off) observed for the 7 weakest HIV1 and for 7 HIV2 dilutions and specificity is expressed by the % of false positive results in BD and GRO. Into brackets, are represented HIV1/HIV2 proteins : Total (T), Recombinant (R), Peptides (P).

	ABBOTT (R/R)	BEHRING (P/P)	DUPONT (R/P)	ORGANON (T/P)	PASTEUR (T/T)	ROCHE (R/R)	WELLCOME (R/P)
Sensitivity							
HIV1	2.5	5.4	2.5	2.4	2.4	2.8	3.8
HIV2	1.0	1.4	0.6	1.1	2.1	3.2	1.3
Specificity							
BD	0.43	0.19	0.23	0.05	0.45	0.43	0.05
GRO	14	2	2	30	66	57	4

Conclusion : These 7 HIV1 + HIV2 Elisa kits are recommended for transfusion use since, compared to HIV1 Elisa tests, HIV1 sensitivity is preserved, HIV2 sensitivity is improved and specificity is not changed.

S.C.625

A NEW ANTI-HIV-2 SPECIFIC PEPTIDE BASED ELISA FOR THE DIFFERENTIATION BETWEEN ANTI-HIV-2 AND ANTI-HIV-1

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Objective: To evaluate the efficiency of a new peptide based immunometric ELISA with respect to sensitivity for anti-HIV-2, cross reactivity with anti-HIV-1 as well as unspecific reactivity.
Methods: 100 µl undiluted specimen are pipetted to 25 µl diluent in the wells of microtitration plates coated with one synthetic peptide referring to the gp 36 envelope protein of HIV 2. After an incubation over 30' at 37°C and 4 washings peroxidase labelled synthetic peptide is added. The incubation over 30' at 37°C is followed by 4 washings and addition of the chromogen tetramethylbenzidine. After 30' at RT the enzymatic reaction is stopped with sulfuric acid. Specimens yielding signals of more than 0.1 O.D. (450 nm) above the negative controls are regarded as positive.
Results: Of 107 confirmed anti-HIV-2 positive sera derived from Ivory Coast and Europe all specimens reacted clear cut positive. As could be shown with serial dilutions of 8 anti-HIV-2 positive specimens, the analytical detection limit turned out to be improved by factor 4 compared to a commercial assay. By testing 408 anti-HIV-1-positive specimens only 1 serum reacted borderline. The results of screening 1500 paired sera/plasma specimens drawn from healthy blood donors referred to specificity data of 99.8 % (initial) and 99.93 % (retest).
Conclusions: The new immunometric anti-HIV-2-assay turned out to be extremely sensitive, type specific and due to the purity of peptide used shows excellent specificity. In combination with the efficient anti-HIV-1-specific sequential saturation assay as described previously, this peptide based test can be applied best for differentiation purposes.

S.C.626

EVALUATION OF A TEST FOR ANTI-HIV-1 AND ANTI-HIV-2 ANTIBODIES

Deckmann, Michael*; Baumann, E.A.*; Mous, J.*; Brüster, H.**; Burckhardt, J.J.***; Gürtler, L.****; North, M.-L.*****
*F. Hoffmann-La Roche, Basel, Switzerland, **Institut für Blutgerinnung, Düsseldorf, Germany, ***Swiss Red Cross, Bern, Switzerland, ****Max von Pettenkofer-Institut, Munich, Germany, *****Centre Régional de Transfusion Sanguine, Strasbourg, France.

Objective: Evaluation of an assay based on a new recombinant fusion protein consisting of immunogenic epitopes of gag and env of HIV-1 and env of HIV-2.
Methods: Sera of random blood donors (N=4579) were used to determine the specificity of the test. Clinical sensitivity was established by testing 634 HIV-1 positive sera, 77 HIV-2 positive sera and HIV-1 seroconversion panels. Limiting dilutions of HIV-1 and HIV-2 positive sera were used to demonstrate analytical sensitivity. All experiments were performed in parallel to tests commercialized in Europe.
Results: An overall specificity of greater than 99.5% was obtained upon initial testing. After retesting specificity of the Anti-HIV-1/HIV-2 EIA <Roche> ranged between 99.6% to 99.9%. All HIV-1 and HIV-2 positive sera were clearly recognized as positive resulting in a sensitivity of 100%.
Conclusion: The new recombinant fusion protein proved to be highly efficient in simultaneously detecting anti-HIV-1 and HIV-2 antibodies. Together with a new test configuration the assay will provide a fast, reliable and economic way to screen blood products.

S.C.627

CROSS-REACTIVITY OF ANTI-HIV-2 POSITIVE SERUM IN U.S. FDA LICENSED SCREENING TESTS FOR ANTI-HIV-1.

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*Boston Biomedica, Inc., West Bridgewater, MA, USA, **Instituto Nacional de Saude, Lisboa, Portugal.

Objective: To determine the reactivity of serum or plasma from Portuguese and West African HIV-2-infected populations in U.S. FDA-licensed anti-HIV-1 screening tests.
Methods: Well-characterized serum or plasma specimens from individuals (n=72) infected with HIV-2 were tested with the 10 commercially available U.S. FDA licensed screening tests for anti-HIV-1. Manufacturer's directions were followed for each test, and all runs were valid according to manufacturers' criteria. Results were examined for reactivity patterns reflecting geographic origin, diagnosis, risk group and anti-HIV-2 Western Blot pattern.
Results: The overall detection rate for anti-HIV-2 in these anti-HIV-1 screening tests was 41.2% (297 positive/720 results). For individual tests, detection rates ranged from 1.4% (UBI-Olympus) to 59.7% (Abbott). Specimens from AIDS patients cross-reacted less (26.7%) than those from ARC (43.3%) or asymptomatic patients (51.7%).
Conclusion: The UBI-Olympus test (based on synthetic peptide antigen) was especially specific for anti-HIV-1 relative to both the viral lysate tests (27.8-59.7% detection of HIV-2 positive specimens) and the recombinant protein based test (40.3%). Overall, cross-reactivity appears to diminish as disease progresses. No such patterns of difference in cross-reactivity were apparent for specimens of different geographic origin, risk group, or anti-HIV-2 Western blot pattern.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

S.C.628 CONFIRMATION OF ANTIBODIES TO HIV-1 OR HIV-2 USING RECOMBINANT ANTIGENS AND SYNTHETIC PEPTIDES

Pollet, D.E.; Van den [illegible]ele, Anne; Saman, E., Peeters, D., Van Heuverswyn, H. Innogenetics NV, B-2000 Antwerp, Belgium.

Objective : To establish criteria for confirmation of antibodies (Abs) to HIV-1 or HIV-2 using the recombinant antigen (rAg) and synthetic peptide (sAg) based INNO-LIA HIV-1/HIV-2 Ab test and to compare the performance of this test with the widely used Western blot (WB) confirmation assay.
Methods : The reactivity of the rAgs (HIV-1:endonuclease, p24 and p17) and sAgs (HIV-1:gp41; HIV-2: gp36) antigens was tested on : sera from healthy subjects including sera with atypical WB patterns (N=599), a seroconversion panel (Boston Biomedica panel C), and WB1 (Du Pont, N=250) / WB2 (Pasteur, N=36) positive sera. The inter lot reproducibility of the WB and the INNO-LIA HIV-1/ HIV-2 were compared.
Results : None of the sera from healthy individuals with a negative or atypical WB pattern were found reactive either with : gp41 only, gp36 only, or endonuclease combined with p24 and/or p17. All WB1 positive sera were found reactive either with : gp41 only (<1%) or in combination with other antigens (98%), endonuclease with p24 and/or p17 (1%). All WB2 positive sera were reactive with gp36 only (7%) or in combination with another antigen (except gp41, 93%). In the seroconversion panel, the INNO-LIA HIV-1/HIV-2 could confirm the presence of HIV Abs before the WB. A significant inter lot variability in the gp41-gp120 reactivity was observed with the WB. The reactivity of the gp41 and gp36 synthetic peptide lines on the INNO-LIA showed no significant inter lot variability.
Conclusion : The reproducibility, sensitivity and specificity of HIV Ab confirmatory tests may be improved using recombinant and/or synthetic antigen combination assays.

S.C.629 PASSIVE HEMAGGLUTINATION ASSAY FOR HIV-1 AND HIV-2 ANTIBODY DETECTION.

Wang, J.; Fang, X.; Sun, Z.; Zhang, J.; Chen, P.; Kang, Edward; Wang, C.
UNITED BIOMEDICAL, INC., Lake Success, New York, U.S.A.

Objective. To develop a single sensitive, reliable and instrument free assay for HIV-1,2 antibody detection.
Methods. A passive hemagglutination assay (PHA) has been developed for the detection of both HIV-1 and HIV-2 antibodies using chemically synthesized peptides, corresponding to highly antigenic conserved segments of the envelope proteins of HIV-1 and HIV-2, as the solid phase adsorbent. This assay may be completed within one hour without instrument assistance.
Results. A total of 2000 specimens were evaluated: 1505 random blood donor specimens (RBD), 292 confirmed HIV-1 antibody positive samples, 90 confirmed HIV-2 positive specimens and 80 specimens from patients with adult T-cell leukemia/lymphoma (ATL) or autoimmune diseases. For all of the clinically recognizable HIV-1 and HIV-2 carriers and patients, this assay's sensitivity was 100%. In the RBD population, a specificity of 99.14% was obtained; 13 repeat reactive specimens were not confirmed by EIA or WB. No cross-reactivity was observed with the ATL and autoimmune disease specimens. Thus, the specificity, sensitivity and overall efficiency of the assay is 99.14%, 100% and 99.34% respectively.
Conclusion. This sensitive and specific manual HIV-1,2 PHA is ideal for HIV-1,2 antibody screening in areas where the EIA method is inappropriate.

S.C.630 CROSS-REACTIVITY OF HIV-1 AND HIV-2 POSITIVE SERA ON WESTERN BLOT

Porter Anne*, Kouadio J*, Maran M*, Damet G**, Lafontaine M*, Bretton G**, Odehouri K**, George R***, De Cock KM* ***
* Projet RETRO-CI, Abidjan, Cote d'Ivoire; ** Comite National de Lutte contre le SIDA; *** Centers for Disease Control, Atlanta.

Objectives: (1) To determine extent of cross-reactivity of HIV-1 and HIV-2 positive sera to heterologous Western blots (WB); (2) To define criteria for interpretation of HIV-2 WB.
Methods: Sera from 1289 consecutive outpatients at Abidjan's Tuberculosis Treatment Centres were tested by whole virus ELISA for HIV-1 and HIV-2. All ELISA-positive (HIV-1 and/or HIV-2) specimens were tested by synthetic peptide ELISA (SPE) (PEPTILAV 1-2), which recognizes virus-specific transmembrane antibody, and by WB for HIV-1 and HIV-2. Specimens were characterized on the basis of SPE as HIV-1 reactive, HIV-2 reactive, or dually (HIV-1 and HIV-2) reactive. Comparisons were made of reactivity by HIV-1 and HIV-2 positive sera to WB for both viruses.
Results: Five hundred and eighty-nine (46%) specimens reacted on whole virus ELISA; on SPE, 58% of these were characterized as HIV-1, 12% as HIV-2, 19% as dually reactive, and 12% as negative. Thirty-eight percent of HIV-1 reactive sera were positive on HIV-2 WB; 78% of HIV-2 reactive sera were positive on HIV-1 WB. Reactivity by HIV-1 and HIV-2 reactive sera to heterologous WB antigens was most extensive for gag encoded proteins, followed by pol and then env gene products. Sixty-seven of 69 (97%) sera defined as HIV-2 reactive on SPE were positive on HIV-2 WB, all with 2 env bands present. Similar studies are in progress on sera from asymptomatic HIV-infected persons.
Conclusions: (1) In Cote d'Ivoire, extensive serologic cross-reactivity exists between HIV-1 and HIV-2; (2) cross-reactivity is maximal for HIV-2 reactive specimens against HIV-1 antigens; (3) presence of 2 env bands is acceptable as requirement for interpreting HIV-2 WB as positive.

S.C.631 DETECTION OF ANTIBODIES TO HIV-1 AND 2 WITH A RAPID PEPTIDE BASED AUTOMATED IMMUNOASSAY

Wong, Philip; Whiteley, G.; Conte, K.; Freeley, P.; Dray-Lyons, K.; Desplaines, K.; Metzmann, E. PB Diagnostic Systems, Westwood, MA, USA.

Objective : Our objective was to develop a rapid self-contained immunoassay to detect HIV-1 and 2 antibodies.

Methods : All reagents were contained in a small test module designed to be run on the PB Diagnostic Systems' OPUS™ automated random access immunoassay analyzer. The assay was based on liquid phase binding of HIV-1 and 2 antibodies to synthetic peptides, representing conserved regions of the viral envelope protein, conjugated to alkaline phosphatase. The immunocomplexes were then captured on an area of glass fiber coated with recombinant protein A/G. Unbound materials were removed from the capturing zone by capillary wash with a solution containing the substrate 4-methylumbelliferyl phosphate. The bound enzyme cleaved the substrate to generate a fluorescent signal. The rate of signal increase was analyzed by OPUS and was proportional to the amount of HIV antibodies in the sample. Total assay time was 20 min.

Results : The sensitivity of the test was determined to be 100% on 200 HIV-1 positive samples and 36 HIV-2 positive samples. Studies with 6 seroconversion panels indicated that the test was as sensitive as or more sensitive than commercial HIV reagents evaluated. The specificity was 100% on 260 HIV negative samples including those that contained potentially interfering substances.

Conclusion : The test is rapid, accurate, self-contained and provides a convenient method for screening for HIV-1 and 2 antibodies using the OPUS immunoassay analyzer. Twenty or more samples can be analyzed in an hour.

S.C.632 EVALUATION OF A PEPTIDE-BASED EIA FOR THE DETECTION OF ANTIBODIES TO BOTH HIV-1 AND HIV-2.

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UER Pitié-Salpêtrière, Paris, France. *IAF BioChem Int., Inc., Mtl., Canada

Objective: Evaluate the sensitivity and specificity of a synthetic peptide-based EIA sold by IAF BioChem in detecting antibodies to HIV-1 and HIV-2 envelope glycoproteins.
Methods: IAF BioChem's EIA uses three synthetic peptides. One covers the C-terminal 22 amino acid of gp120 (HIV-1); the other two 30 amino-acid-long peptides include the two vicinal cysteines present on gp41 (HIV-1) and gp36 (HIV-2), are cyclic and include another modification (patent pending). Three panels of human sera were used in this evaluation: A) sera from 344 randomly selected patients attending a specialized outpatient clinic (high risk population); B) 258 samples difficult to resolve by Western Blot (WB; Diagnostics Pasteur); C) 18 seroconversions.
Results: Data obtained with the WB and the EIA on samples of panel A are in perfect agreement. In this panel, 19 samples had been found falsely positive by a cell lysate-based EIA but were negative with the BioChem EIA. All samples but three of those of panel B were found as clean positives (128) or clean negatives (127) in accordance with the WB results. Of three samples repeatedly found indeterminate by WB, two were high negatives and one a weak positive with the BioChem EIA. Finally, samples taken at the time of seroconversion gave high O.D. readings even if they were at that time only weakly reactive by WB (weak gp160 band).
Conclusion: This sensitive, rapid and easy to perform EIA, gives results which are in good agreement with confirmatory tests. Resolution between negative and positive samples is very high.

S.C.633 A POOLING METHOD FOR ANTI-HIV TESTING IN ECUADOR

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** Family Health International, RTP, NC, USA

Objective. To develop and evaluate a simple, practical and reliable pooling method based on two commercial test kits without compromising the assay's sensitivity and specificity.
Methods. One thousand samples from blood donors were analyzed using Abbott's and Organon Teknika's test kits. Samples were assayed by each test kit both by routine single well and as 3 samples per pool per well. For pooling, the total volume of three combined sera was substrated from the total amount of sample diluent recommended by the manufacturer. Thus, the final dilution of each pooled sample relevant to the total volume in each pool per well was the same as that recommended by the manufacturer. No modification was made to the cut-off values. All positive samples were confirmed by Western Blot analysis.
Results. Correlation for the two methods ranged from 98 to 100% on all Western Blot positive samples. Specificity was lower and ranged from 92 to 96%.
Conclusions. Our method is simple, practical and reliable in detecting HIV seropositive samples with the added advantage of significant economical savings.

S.C.634 A SCREENING ASSAY FOR ANTIBODIES TO HIV-1 AND HIV-2 USING RECOMBINANT ANTIGENS

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Objective. To develop a screening enzyme immunoassay (EIA) for antibodies to HIV-1 and HIV-2 using recombinant antigens which allows detection of both IgG and IgM. This assay is capable of reducing the window between antigenemia and seroconversion.
Methods. Human antibodies to HIV-1 are captured on a polystyrene bead coated with purified recombinant antigens containing the HIV-2 p41 sequence; HIV-1 p24 and HIV-1 p41. Captured antibodies are detected colorimetrically using recombinant HIV-2 p41, HIV-1 p24 and HIV-1 p41 proteins conjugated to HRPO.
Results. The EIA detected all of a population of 50 ARC, 50 AIDS The recombinant EIA is more sensitive than the current Abbott 2nd generation HIV-1/-2 EIA when used to assay serial dilutions of positive samples.
This assay detects anti HIV antibodies earlier than the licensed 1st generation viral assay in 8 of 9 HIV-1 seroconversion panels and in 4 of 9 compared to the Abbott 2nd generation recombinant assay. In all these panels at least one serial sample tested positive both in this assay and the current Abbott EIA for p24 antigen effectively closing the antigenemia/seroconversion window. The profile of anti HIV-1 IgM levels measured in these seroconversion panels suggest that a large part of this early detection is related to anti HIV IgM detection.
Conclusion. The increased sensitivity of this recombinant assay in detecting seroconversion panels is due to a combination of improved IgG sensitivity and IgM detectability. In combination with assay for HIV-1 antigen the window between infection and seroconversion may be substantially narrowed.

S.C.635 SENSITIVITY AND SPECIFICITY OF THIRD GENERATION ASSAYS FOR ANTI-HIV 1 AND 2.

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Central laboratory of the Netherlands Red Cross Blood Transfusion Service, Amsterdam, the Netherlands.

Objective: To compare the sensitivity and specificity of second and third generation anti-HIV 1/2 ELISAs.
Methods: Two new reverse sandwich type anti-HIV 1/2 ELISAs (Abbott, Wellcome) were compared with a current indirect sandwich type anti-HIV1/2 ELISA (Abbott). Sensitivity for anti-HIV 1 was studied by using 1071 confirmed anti-HIV 1 positive serum samples and sequential sera of 5 plasmapheresis donors taken at intervals of a month during seroconversion. Relative sensitivity of ELISAs for anti-HIV 2 was evaluated by testing 2-fold dilutions of 10 confirmed anti-HIV 2 positive sera. Specificity of the assays was compared by testing 2000 normal donor samples and 100 serum samples of blood donors known to react aspecifically in current EIAs and/or Western blot.
Results: All ELISAs reacted adequately with anti-HIV 1 positive sera. The relative sensitivities at anti-HIV 1 seroconversion points and anti-HIV 2 dilutions are shown in the table.

ELISA	OD/cutoff in HIV 1 seroconversion sera 1	2	3	4	5*	HIV 2 rel. sens.** (fiducial limits)
Abbott 2nd gen.	3.58	4.47	4.39	7.04	1.32	1.0(reference)
Abbott 3rd gen.	7.26	4.07	3.87	5.63	8.24	0.26 (0.06 - 1.26)
Wellc. 3rd gen.	3.22	2.21	2.94	5.62	5.09	0.29 (0.08 - 0.95)

*seroconversion sample 5 was HIV-Ag positive. ** probit analysis

The respective percentages of repeatedly reactives in normal and aspecifically reacting donor samples were Abbott 2nd gen.: 0.05 %, 21 % ; Abbott 3rd gen.: none, 8 % and Wellcome 3rd gen.: 0.06 %, 4 %.
Conclusions: The new two-side anti-HIV 1/2 ELISAs were as sensitive as the current ELISA in anti-HIV 2 sera and in anti-HIV 1 seroconversion samples. Interestingly the 3rd generation ELISAs reacted more strongly with an early HIV antigeanemic serum and less aspecifically with donor samples.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

S.C.636 EFFICIENT DETECTION OF HIV-1 AND HIV-2 ANTIBODIES WITH SYNTHETIC PEPTIDES-BASED ELISA

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Objective: Ealuation of new peptide-based ELISA (Peptest 1+2) for the detection of antibodies against HIV.
Methods: A mixture of 2 peptides from GP41 (HIV-1) and 1 peptide from P36 (HIV-2) was used for microtiter plate coating. Peptides were immobilized according to original procedure using protein carrier. Cmparison of the test with other HIV antibody assays was made with the panel of 223 HIV-1 and 27 HIV-2 positive sera and 1026 sera from healthy blood donors.
Results: All positive sera were identified correctly. The mean absorbance value exceeded 1.9. Early detection of antibodies was shown in the case of two seroconversion panels. All 1026 negatives were determined as negative.
Conclusion: The synthetic peptides-based kit is very sensitive and specific and can be used for diagnosis of both HIV-1 and HIV-2.

S.C.637 SENSITIVITY AND SPECIFICITY OF A COMBINATION ASSAY FOR HIV-1 ANTIBODY AND HBsAg

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Objective: To compare the specificity and sensitivity of the Pharmacia Combi HIV-1/HBsAg ELISA with licensed HIV-1 and HBsAg screening tests. **Methods:** The Pharmacia Combi HIV-1/HBsAg ELISA utilizes a heterologous antigen sandwich format for detection of HIV-1 antibody. Highly purified viral antigen and a recombinant baculovirus derived envelope protein are used as the conjugate. HBsAg is detected with an antibody sandwich format. Specificity was evaluated using random plasma donor samples. Assay sensitivity was evaluated using seroconvertor panels, dilution panels, and repository positive samples. **Results:** The specificity of the Pharmacia Combi HIV-1/HBsAg ELISA was 100% (0/498 repeatably reactive samples) compared with 99.8% for Abbott HIV-1 and 100% for Abbott Auzyme. The Pharmacia Combi HIV-1/HBsAg ELISA detected ≥ 0.2 PEI units/ml of HBsAg. On the seroconvertor panels the Pharmacia Combi HIV-1/HBsAg ELISA detected earlier or equivalent bleeds to the competitor assays tested and detected 49/49 WB positive repository samples.
Conclusions: The Pharmacia Combi HIV-1/HBsAg ELISA assay format allows a high degree of discrimination between positive and negative samples and shows excellent sensitivity for both HIV-1 samples and for HBsAg.

S.C.638 HUMAN T-CELL LEUKEMIA VIRUS (HTLV) SERODIAGNOSTIC TESTING AMONG A COHORT OF IV DRUG USERS.

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*Objective:*We compared radioimmunoprecipitation assay (RIPA) against a battery of serologic tests in recognizing antibodies to HTLV gene products.
Methods: 346 sera collected over a two year period from 154 San Francisco IV drug users were subjected to RIPA, Western blot (WB), Dupont ELISA, and p24 radioimmunoassay (RIA).Tests were performed at seperate sites and code not broken until study end. RIPA + and - controls consisted of Japanese adult T-cell leukemia patients, healthy blood donors and non-IV drug using HIV + men.
*Results:*RIPA identified HTLV positive sera not identified by the other tests. Positive RIPA's were noted in 43% of negative ELISA (n=279),34% of negative WB (n=243), and 40% of negative RIA(n=270). 72 sera were negative by all three assays, but were RIPA positive.All sera positive by RIA(n=76),and WB(n=67)and 66 of 67 by ELISA were confirmed by RIPA. 35 of 36 indeterminate WB were RIPA positive.All 7 indeterminate RIPA were negative by WB and RIA; 1 of 7 was positive by ELISA.In all in instances but one,samples negative by WB(n=154) were RIPA negative.Of 154 negative ELISA's and 154 negative RIA's there was 100% concordance by RIPA.
*Conclusions:*When studying HTLV endemic cohorts screening ELISA or RIA followed by confirmatory WB or RIPA only of seropositive samples may result in a substantial number of undetected cases.Additional studies focusing on the performance characteristics of serodiagnostic tests are needed to insure accurate inferences are made in assessing HTLV prevalence rates among high risk groups. RIPA may be a uniquely sensitive assay to detect HTLV gene encoded products.

S.C.639 ASSESSMENT OF HUMAN T-CELL LYMPHOTROPIC VIRUS TYPES I AND II ANTIBODY TESTING

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Objective: Testing for human T-cell lymphotropic virus types I and II (HTLV-I/II) antibodies is required by the U.S. Food and Drug Administration on blood and plasma collected for transfusion and blood product manufacture. In 1989, a program was designed to evaluate performance of laboratories that test for HTLV-I/II antibodies and to identify any problems in testing.
Methods: Panels consisting of HTLV-I/II antibody-positive and -negative plasma samples were provided to laboratories voluntarily participating in the Centers for Disease Control Model Performance Evaluation Program. Included were samples positive for both HTLV-I/II and human immunodeficiency virus type 1 (HIV-1) antibodies and samples positive for HIV-1 antibodies only.
Results: A total of 331 laboratories reported results; 329 performed enzyme immunoassay (EIA), 35 Western blot (WB), 5 indirect immunofluorescence, and 3 radioimmunoprecipitation assays. False-positive EIA results were limited to samples containing antibodies to HIV-1 only. False-negative interpretations for HTLV-I/II positive samples were infrequent. For 11 of 16 HTLV-I/II positive samples, WB indeterminate interpretations were reported--as high as 83% on some samples. Laboratories that reported indeterminate interpretations did not detect a gp46 band on their blots. Samples that were both HIV-1- and HTLV-I/II antibody-positive did not appear to present any special testing difficulties.
Conclusion: Although generally sensitive and specific, the accuracy of HTLV-I/II antibody testing could be further improved by increasing the specificity of EIA and the sensitivity of WB tests.

HIV Testing: General Issues

S.C.640

AIDS KNOWLEDGE AMONG HISPANIC AMERICAN SUBGROUPS

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Hispanic Americans have a higher incidence rate of AIDS than non-Hispanics. However, there are variations within the Hispanic population by country of origin, with Puerto Ricans having higher disease rates and Mexicans lower rates. Objective and Methods: We used data from the 1988 AIDS supplement to the National Health Interview Survey to see if there were differences in knowledge about AIDS among 3 Hispanic subgroups. A total of 1,735 respondents identified themselves as Hispanic including 210 Puerto Ricans, 138 Cubans, and 859 Mexicans. Results: 80% or more in all 3 groups were able to answer questions about the 3 major modes of HIV transmission correctly; 90% or more felt sharing IV drug needles was likely to transmitt HIV. Cubans and Puerto Ricans exhibited similar levels of general knowledge, slightly higher than Mexicans; these two groups also had less misperceptions about casual contact than Mexicans. Mexicans were less likely to have heard of the HIV antibody test that the others (58% vs 72%). Among those aware of the test, a similar percent in all groups had been tested voluntarily (5-7%); Puerto Ricans were more likely to plan future testing. No differences were seen in perceived risk of HIV infection or in the percent who reported high risk behavior. Conclusions: Knowledge patterns did not appear to be correlated with differences in incidence rates among Hispanic subgroups. For some aspects of AIDS, Hispanics, particularly Mexican Americans, are less knowledgeable than non-Hispanics. Therefore, continued efforts are needed to further educate Hispanic populations. This AIDS survey was also used in 1989; we will include this data to provide larger samples for analysis in the final paper.

S.C.641

IMPACT OF A 1989 TESTING POLICY CHANGE IN ARIZONA: PRELIMINARY ANALYSIS

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Objective: The objective of this study was to evaluate the impact of changing the state's HIV testing policy from confidential testing to an anonymous testing option at county health departments.

Methods: On March 15, 1989, the Arizona Department of Health Services changed its HIV testing policy from universal confidential testing to an anonymous HIV testing option at county health departments. All clients seeking testing at county health departments after March 15 were administered a brief questionnaire inquiring about knowledge of the policy change and specific reason for testing. In addition, demographic and risk category information was gathered. The number of clients tested after March 15 was compared to those tested prior to the policy change.

Results: A total of 4,130 individuals were tested through Arizona county health departments 5.5 months after the policy change. This compares to 3,627 tested 5.5 months prior to the policy change (see table below) and represents an overall 13.9% increase in testing. Increases were seen in all risk groups; however, the largest increase (37.2%) was seen among gay/bisexual men.

Risk Category	No. Tested 10/1/88-3/14/89	No. Tested 3/15/89-8/30/89	% Change
Gay/Bisexual	653	896	+37.2
IVDU	502	551	+ 9.7
Other	2,472	2,683	+ 8.5
TOTAL	3,627	4,130	+13.9

Conclusion: As seen in a similar evaluation in Oregon, the availability of anonymous testing seems to preferentially draw gay/bisexual men; however, further follow-up of this policy change is necessary to evaluate its long-term effects in this regard. In addition, the benefits of additional numbers seeking testing must be weighed against the resulting inability to provide maximallly effective follow-up services, including partner notification and case management.

S.C.642

A THREE YEAR COMPARISON OF DEMOGRAPHIC TRENDS OF CLIENTS RECEIVING HIV ANTIBODY TESTING AND COUNSELING AT COOK COUNTY HOSPITAL, CHICAGO, ILLINOIS, U.S.A.

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Purpose: To describe the demographic trends of clients receiving HIV counseling and testing at a large inner city public hospital in the U.S. over three years.

Method: By means of self selection or health provider referral, clients from hospital wards, clinics and emergency room were identified as at risk of HIV infection.

Results: Over the past three years 5,215 individuals agreed to individual HIV risk reduction counseling. 3,210 (62%) agreed to HIV antibody testing with an overall seropositivity rate of 25.1% (n=807).

		1987	1988	1989
	#COUNSELED	1023	2,084	2,108
SEX	MEN	717(70.1%)	1,212(58%)	1,073(50.9%)
	WOMEN	306(29.9%)	872(42%)	1,035(49.1%)
RACE	AFR-AM.	620(60.6%)	1,439(69.1%)	1,360(64.5%)
	WHITE	225(22.0%)	313(15.0%)	236(11.2%)
	HISPANIC	151(14.8%)	308(14.8%)	477(22.6%)
	ALL OTHER	27(2.6%)	24(1.2%)	34(1.6%)
RISK FACTOR	GAY/BISEX.	377(24.8%)	256(12.3%)	204(9.7%)
	GAY/BI IVDU	33(2.2%	22(1.1%)	26(1.2%)
	IVDU	502(33.1%)	831(39.9%)	672(31.9%)
	HTRO.PRTNR AT RISK	107(7.1%)	175(8.4%)	260(12.3%)
	SERO-POSITIVE	208/522(39.8%)	272/1142(23.7%)	327/1546(21.2%)

Conclusion: Increasing numbers of Hispanics and women have received HIV risk reduction counseling over three years reflecting increased program efforts with these populations. Overall, HIV seroprevalence in this group is higher than expected. Public hospitals are a significant arena for HIV prevention efforts.

S.C.643

HIV TESTING IN A STATEWIDE POPULATION-BASED COHORT

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Objective. Assess the characteristics of all persons undergoing HIV testing in Oregon. Methods. All HIV testing, regardless of result, is reportable in Oregon. Reported information is anonymous and includes age, race, sex, previous HIV testing status, reason for testing, and results. Reports from 9/1/88 to 8/31/89 were reviewed. Results. Excluding routine testing at blood donation, 33,291 tests were reported, a rate of 1.2 tests per 100 persons in Oregon. The ratio of testing in the private sector to that in public health departments was 2:1. Rates of testing did not vary by sex. Persons ages 20-29 years had the highest testing rate (2.5/100). Rates were higher for Hispanics (6.7/100) and Blacks (2.5/100) than for Whites (0.9/100). The overall rate of HIV seropositivity was 2.0%. Seropositivity was highest (10.5%, 164/1,560) for persons with signs or symptoms suggestive of HIV infection. Seropositivity was lowest for persons tested for an occupational exposure to body fluids (0%, 0/1,348) and for persons tested due to third party requests (0.3%, 19/6,829). The private sector performed 95% (7,762/8,158) of the tests in these low risk groups. Seropositivity was 1.3% (214/16,207) for asymptomatic persons seeking testing voluntarily and who were not known to be infected. Public health departments tested 53% of this asymptomatic group, including 74% of the 214 testing positive. Conclusions. HIV testing is common in Oregon. Almost all HIV testing done in low risk populations occurs in the private sector. In contrast, three-quarters of asymptomatic infected persons, the priority population for public health prevention efforts, seek testing at public health departments.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.644 THE ARMY HIV FIVE YEAR TESTING EXPERIENCE: 1985-1990

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Objective: To summarize the U.S. Army HIV screening program over the last five years.
Methods: Sera collected from recruits, Army active duty, Army National Guard, Army Reserves, and the Coast Guard were screened with an FDA approved ELISA method. Repeatedly reactive sera were subsequently analyzed by Western blot, a recombinant envelope protein based ELISA and/or Radioimmunoprecipitation.
Results: As of 1 January 1990, 4.66 million sera samples have been tested with 26,355 being repeatedly reactive. Of the repeatedly reactive specimens 12,007 (45.6%) were non-reactive by Western blot; 2,538 (9.6%) were non-diagnostic which required further confirmatory assays; and 11,810 (44.8%) were reactive. For quality assurance purposes 23,571 specimens, averaging 548 per month, were sent in a blind and open fashion to 7 different labs over the last five years. Of these 8,171 were positive and 15,400 were negative. By using a verification sample in the testing algorithm, the rate of false positive results is approximately 1 in 424,000 specimens tested. The five year average direct and indirect costs of the screening program is $4.55 per specimen tested.
Conclusion: A large scale, accurate, and cost effective HIV screening program is feasible.

S.C.645 AIDS NATIONAL SEROLOGY LABORATORY SYSTEM: THE BRAZILIAN EXPERIENCE

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Objective: To establish control measures for the transmission of HIV via blood and blood components, and to create an infra structure to support diagnosis all over the country.
Methods: The National Division of STD/AIDS has used the pre-existing infra-structure of public health laboratories and the national network of hemocentres. The proposed system is composed of a hierarchical network of laboratories: the national, the regional and the state ones, together with the hemocenters, identified according to technical and scientific criteria, geographic location and epidemiological indicators. The entrance to the system obeys a previously established flow, starting with the hemocentres and other health services. The serescreening of samples is done by ELISA tests, and when a positive result occurs, it is "confirmed" by immunofluorescence (IFA). If both tests agree, the results is given out. If they disagree a Western Blot is done.
Results: The establishment of the system was done in two steps and presently there are 26 hemocentres and 23 central laboratories performing the ELISA test; 14 hemocentres and 8 public health laboratories performing the IFA; and 2 hemocentres and 9 public health laboratories performing Western Blot . In the first step, the coverage with HIV serologic tests reached almost 100% of the 26 state capitals and the Federal District, and the prevalence found in 754,000 blood donors who were tested in 1989 was of 0.55%.
Conclusion: The system has proved to be efficient in establishing control measures and in controlling the expansion of AIDS in Brazil.

S.C.646 FREE AND ANONYMOUS HIV TESTING CENTER OF NANTES, FRANCE: 1989 EXPERIENCE

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Objective : A free anonymous site for HIV antibody testing was opened in Nantes, France, in April 1988. We report the results of the activity of the center for 1989.
Methods : Patients are first interviewed by a medical doctor and a confidential epidemiological survey form is filled to assess the motivations of consultants and real risks of transmission. HIV testing is done by usual serological methods (ELISA and Western blot).
Results : During the year 1989, 1078 patients seeked HIV antibody testing. They were 60% of men and 40% of women, 53% of patients being between 20 and 29 years of age (and 27% between 30 and 39). Motivations of patients were appartenance to population at risk in 53% (homosexual, bisexual males : 17%, heterosexual partners of seropositive patients : 18%, IVDA :5%) or need for reassurance in 47% (multiple heterosexual relationships). The seroprevalence rates were : 2.6% (28/1078) for the entire population; 3.9% for males and 0.9% for females; 9.7% for homosexual/bisexual males; 5.6% for IVDA; 2.5% for heterosexuals at risk; 0.4% for patients with no risk.
Conclusion : HIV testing through a free and anonymous site is an effective method for epidemiological and counseling purpose. Heterosexual are thus far relatively spared. Efforts are needed to motivate IVDA to seek HIV antibody testing.

HIV Testing: Operational Issues

S.C.647 RISK BEHAVIOR AND INDICATIONS OF RISK REDUCTION IN ALTERNATIVE TEST SITE CLIENTS.

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Objective: Alternative Test Sites (ATS) attempt to reduce HIV transmission by providing clients with risk reduction and antibody status information. Client data was examined for risk and risk reduction indicators.
Methods: A sample of clients was asked to complete a self-report survey which was offered to consecutive clients at each ATS until the supply was exhausted. Of the 1374 surveys distributed, 857 (62%) were returned. Client risk questions elicited sexual, needle sharing practices and other risk factors. Repeat clients were questioned about actual and perceived risk reduction for indications of behavior change.
Results: Risk behaviors reported are presented in Table I. Many clients reported more than one risk. Sixty-one percent of gay clients used condoms during their last sexual intercourse, while 39% of the overall group and only 21% of IVDU clients did. Nearly 40% of ATS clients had tested before. These clients were compared with first time test takers reporting the same risk behavior. Only gay clients showed significantly greater condom use (66% vs 48%; chi sq. 6.52, p< .02), and they differed significantly on NO other measured variable.

Risk Behavior	Frequency	%
Multiple Partners	464	53
Sex w/ Same Sex	227	26
Sex w/ Both Sexes	77	9
Injected Drugs	66	8
Received Blood	40	5
Sex for Drugs/Money	29	3
Hemophiliac	0	0
Sex w/ Above	233	27
No Risk	110	13
Total	1246	

Table I Client Risk Behavior

Conclusion: Nine of every 10 ATS clients report at least one risk behavior. Among the homosexual group--highly targeted for public health education--there was substantial condom use and greater condom use among those who returned for repeat HIV testing. There were NO other differences detected between homosexual first time and repeat test takers. These results are consistent with a preventive impact of ATS services. However, the cause of differences in condom use remain uncertain. Any number of unidentified group differences could account for more frequent condom use. What is clear is that even among those who have received ATS counseling and testing services, there is substantial continuing risk behavior among both homosexual and heterosexual clients.

S.C.648

FACTORS THAT DETERMINATE AN INDIVIDUAL'S REPEATEDLY ASKING TO BE HIV TESTED

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OBJECTIVE: To identify the reasons for repeatedly asking to be HIV tested and the individual's profile, in order to create educative and preventive strategies.

METHODS: 279 files of people who attended to the (Flora) AIDS Information Center, were analyzed; in spite all had previously been informed about risk practices and preventive measures. They pretended to be repeatedly tested for HIV. Socio-demographic data, risk factors, reasons for - repeating the test, preventive measures used, number of tests realized, and results were registered. The odds rate was calculated.

RESULTS: The main reason for asking repeatedly for the test were: the lack of preventive measures (42.1%), ratify a previous result (28.3%), preestablished reasons as: being sexual partner to an HIV infected, laboral risk in health personal, etc. 84.9% were tested twice, 10% trice, 4.3% on four ocassions and 0.5% on five ocassions. 18 people seroconverted. 61.3% reported condom use, 57.8% safe sex, 69.2% reduction in the number of sexual partners, and 11.5% sexual abstinence.

CONCLUSIONS: The main reasons for requesting the test were: 1) the lack of preventive measures in spite of having enough information and 2) risk practices. A deeper understanding of the character traits of the people is requiered for a better assesment and therapy especially of those who eventually get infected.

S.C.649

CHARACTERISTICS OF PERSONS NOT RETURNING FOR HIV TEST RESULTS AND COUNSELING AT PUBLICLY FUNDED TEST SITES, U.S., 1989

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Objective. To describe those not returning for test results (TR) and post-test counseling (PTT) so as to improve HIV counseling/testing (CT) services.
Methods. Individual report forms for 85,737 visits to CT sites in nine selected areas were analyzed for the period June-December 1989. Using "did not return for PTT" (among those tested) as the outcome variable, bivariate crosscablulations (SPSS-PC) and logistic regression (BMDP-LR) were used to describe those who did not return for TR/PTT.
Results. Overall, the non-return rate (NRR) among those tested was 52.2%. The NRR was higher among the 2% who did not receive pretest counseling (80.3%) than for the 98% who did (51.8%), although pretest counseling may have varied considerably from site to site. The NRR was also higher in those who were seronegative (53.1% vs. 31.8%). NRR was highest among persons reporting no HIV risk exposure or "heterosexual" as the only risk (60.9-65.1%) and lowest among those reporting homosexual contact (15.8%). Although the NRR was highest in those whose clinic visits were not specifically HIV related (62-79%), the rate was nevertheless substantial among those whose visit was specifically HIV related (19-26%). The NRR was highest among younger persons, females and Blacks and at STD (77%) and family planning and prenatal (70%) clinics and lowest at free-standing HIV test sites (20%).
Conclusions. The NRR is unacceptably high. Pretest counseling appears to contribute to a client's returning for TR/PTT. Further efforts must be directed to groups and clinics in which the NRR is high and much could be gained by assuring proper PTT for both infected and uninfected individuals.

S.C.650

MAXIMIZING RETURN AFTER GIVING A POSITIVE HIV RESULT

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Objective: To improve patient follow-up after giving a positive HIV antibody test result by altering the quality and quantity of the information given along with the result and by keeping constant the nurse performing pre- and post-test counselling for a specific patient.
Methods: In October 1989, the post-test counselling session in which a positive result is given was changed so that less information was given and more time was spent in helping the patient deal with the result. The patients were informed that additional important information would be discussed at the next visit. At the same time steps were taken to ensure that the same staff did both the pre- and post-test counselling for an individual client. The return rates before and after are compared.
Results: The sex, age, risk and rate of positive tests were comparable between the two periods studied. From October 1985 through September 1989, 161 positive HIV results were given to patients and 21 of these patients (13.0%) returned for follow-up. Of the 140 who did not return, 102 had a different staff person for their pre- and post-test counselling. Preliminary results from October 1989 through December 1989 show that 12 positive results were given and 6 patients returned for follow-up. Of the 6 who did not return 4 were being retested at the request of their family doctor and had little reason to return.
Conclusion: The counselling session during which a positive HIV test result is given should emphasize the patient-staff relationship, focus on a small amount of information of immediate importance (i.e., crisis counselling and prevention), and assist the patient in dealing with the shock.

S.C.651

FACTORS ASSOCIATED WITH FAILURE TO RETURN FOR HIV POST-TEST COUNSELING.

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Objective. To determine risk factors associated with failure to return for HIV test results and post-test counseling (PTC).
Methods. Beginning in 7/89, Oregon has systematically monitored whether clients tested at public funded sites return for PTC within 30 days following testing. Return status was linked with clinic type, method of test (anonymous vs confidential), and demographic, risk, and previous HIV testing information provided by the client.
Results. As of 11/15/89, the return status was known for 3,802 clients. Of these, 1028 (27%) failed to return (FTR) for their test results. The FTR rate was 13% for clients who voluntarily sought testing at public sites compared to 49% for clients offered testing as part of a clinic visit for another purpose (OR 6.7, $p < 10^{-}$). Clients seen at STD clinics comprised less than one-third of persons tested, but accounted for 61% (624/1028) of FTR clients. When controlling for clinic test site, significantly higher FTR rates were associated with age 10-19 years (OR 1.9, $p < 10^{-}$), IV drug use in the preceding 6 months (OR 2.2, $p < 10^{-}$), and Black race (OR 2.0, $p < 10^{-}$). HIV test results did not affect return rate. Homo- and bisexual men had a significantly lower FTR than did heterosexual men (OR 0.43, $p < 10^{-}$).
Conclusions. Many clients undergoing HIV testing do not return for results and PTC. Those at risk are more likely to return if they seek testing voluntarily. In settings where testing is offered as an adjunct to other services, pre-test counseling should be designed to motivate clients to learn whether they are infected and to receive PTC

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

HIV Testing: Disclosure of Test Results

S.C.652 A STUDY OF DISCLOSURE OF HIV ANTIBODY POSITIVE STATUS: RELATIONSHIP TO USE OF SERVICES AND NEED FOR SUPPORT.

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OBJECTIVE: To assess the reactions of individuals to the disclosure of a positive HIV antibody test with particular reference to subsequent disclosures and the use of counselling services.
METHODS: One hundred and twenty HIV infected gay men filled in an anonymous questionnaire up to 9 months after disclosure of their positive HIV antibody status. Details of who they had informed about their diagnosis, in particular their sexual partners, people told, frequency of using different counsellors, telephone helplines and written information were recorded.
RESULTS: Within 1 week of a positive test 15% of respondents had not told anyone about the result; this behaviour was significantly more common in men with no regular partner ($p<0.05$). By 9 months after diagnosis 94% of men had told at least one other person, with a mean informant rate of 7 people (range 0-c.10,000,000). Half of the sample had informed a relative with the reactions varying from physical violence (in 3 cases) to valuable support. The men with no regular sexual partner at the time of diagnosis used counselling services more frequently and were significantly more likely to abstain from future sexual intercourse than those with regular partners ($p<0.05$). Over half of the sexually active sample reported that they did not tell their new partners of their HIV infection.
CONCLUSION: This study indentifies that men with no regular partner at the time of a positive HIV antibody test inform fewer people about their diagnosis and correspondingly utilise counselling and support services more frequently than those with a regular partner.

HIV Testing: Risks

S.C.653 STRESS MANAGEMENT AS BUFFER OF ANXIETY INCREMENTS AND IMMUNOLOGIC DECREMENTS DURING FIVE-WEEK PERIOD PRECEDING HIV-1 SEROSTATUS NOTIFICATION

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Objective. To determine the effects of a cognitive-behavioral stress management intervention on anxiety levels and immunologic markers among HIV-1 seropositive gay males during the period preceding serostatus notification.
Method. Fourteen gay males, ultimately shown to be HIV-1 seropositive but unaware of their diagnosis at study entry, were randomized into either a stress management (SM) intervention (cognitive stress management and progressive muscle relaxation training) condition (N=7), or an assessment-only control group (N=7). The Profile of Mood States (POMS) and state anxiety inventory (SAI) were administered and blood was drawn for immunologic tests (CD4+, CD45R+, CD29w+ counts; and lymphocyte responses to PHA and PWM) at baseline and after five weeks of intervention at a point 72 hrs. preceding serostatus notification.
Results. Median baseline anxiety scores were nearly identical in the two groups (SM=42.2, control=42.0) but after five weeks of intervention the SM group showed a significantly larger decrease in SAI scores (Δ=-6.5) than the controls (Δ=-0.4). Across this same period the SM group showed a significant increase in POMS anger scores (7.4 vs. 14.3) which was not seen in the control group (9.3 vs. 9.2). The SM group showed significantly larger increases in median CD45R+ counts (Δ=+52.0 cells/mm^3) than controls (Δ=+16.0); and in PHA values (Δ=+7997 counts per min) vs. controls (Δ=-12439). There were no significant differences noted on the other immunologic markers.
Conclusion. These findings suggest that a stress management program instituted during the stressful period just preceding serostatus notification (after subjects have decided to be tested but before learning their diagnosis) may buffer anxiety levels, facilitate the healthy expression of negative emotions such as anger and attenuate possible transitory decrements in cellular immune functioning.

S.C.654 DEPRESSIVE SYMPTOMS AFTER HIV ANTIBODY TESTING

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Objective: To determine the rate, course, and predictors of depressive symptoms after notification of HIV serologic status.
Methods: Standardized clinical ratings of current and lifetime depressive illness (SCID) were obtained at entry (T1) on 312 adults voluntarily seeking HIV antibody testing with psychoeducational counseling. The physically asymptomatic (CDC II/III) subjects were assessed 2 (T2) and 6 (T3) months later with the Beck Depression Inventory (BDI).
Results: Mean BDI scores decreased from entry (T1: 9.49 +/- 8.00; T2: 5.44 +/- 6.82; T3: 6.51 +/- 7.37), without significant relation to serological status. Even among the 40 subjects with a current depressive illness diagnosis at entry, the same pattern was observed (T1: 18.18 +/- 10.29; T2: 9.90 +/- 11.02; T3: 13.85 +/- 10.27). The subjects with a lifetime history but no current episode of depressive illness at T1 were more likely to have a BDI > 12 at T3 than the subjects without either a current or lifetime depressive illness at T1 (chi square = 5.7, df = 1, p = .02).
Conclusions: Depressive symptoms generally decrease during the first six months after HIV testing with adequate counseling even among the subpopulation with depressive symptoms prior to serological notification. Depressive symptoms occur more frequently at six months among subjects with a prior history of depression. These findings help identify notified HIV testing subjects at risk for psychiatric morbidity.

S.C.655 EFFECTIVENESS OF PSYCHOEDUCATIONAL INTERVENTIONS AFTER HIV ANTIBODY TESTING

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Objective: Assess the differential effectiveness of 3 psychoeducational interventions in reducing emotional distress among at-risk individuals seeking HIV testing.
Methods: Following notification of HIV antibody test results, 214 seronegative (HIV-) and 94 seropositive (HIV+) physically asymptomatic males and females (CDC II/III) were randomly assigned to 1) standard counseling (SC), or 2) a psychoeducational interactive video program or 3) 6 sessions of brief cognitive-behavioral stress prevention training (SC+SPT). Standardized measures of anxiety, depression and psychiatric symptoms were assessed before and 3 months after notification and analyzed with multiple analyses of variance (MANOVA).
Results: Subjects were sociodemographically heterogeneous and represented all risk behaviors (gay/bisexual men, heterosexuals, former intravenous drug users). Mean distress measures of all subjects were significantly reduced at follow-up without an overall serology effect. MANOVA revealed that change scores of HIV+ and more emotionally distressed HIV- were significantly greater among those receiving SPT.
Conclusions: These findings support the value of psychoeducational interventions for individuals who seek HIV testing. SPT is especially effective for HIV+ and for those HIV- with greater distress.

HIV Testing: Counselor Training

S.C.656 EVALUATION OF HIV TEST COUNSELORS USING SIMULATED PATIENTS

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Objective: To assess the use of Simulated Patients (SPs) as evaluators of HIV Test Counselors' (HTCs) skills.
Method: Four simulated cases were developed and eight SPs (two per case) were trained . Twenty-six HTCs who had previously received the Centers for Disease Control (CDC) HTC Training, participated in the three phase study. First, each HTC completed a pre- and post-HIV test session with one SP from each of the four simulated cases. SPs evaluated counselors' skills using checklists and rating forms. Counselors evaluated the SPs using rating scales and open ended questions for comments. Second, counselors received 12 hours of supplemental training which addressed pre-training-identified skill deficits. Third, the HTCs completed a second performance evalution using the same simulated cases with different SPs.
Results: The phase one evaluations by the SPs identified the content areas for the supplemental training. Following training, the SPs reported improved pre- and post-HIV test counseling skills of the participant HTCs ($t=5.43$ and 6.20 with $p<.00$ for both). In turn, counselors rated the SPs as believable (Mean=4.62 on a 1=not believable to 5=extremely believable scale), consistent (in 99% of the SP encounters, SPs'affect and verbal cues were consistent with the case and test results given), and appropriate (80% of SP encounters were rated as appropriate to the counselors' practice).
Conclusion: Simulated patients can be used effectively to assess the need for additional training amoung previously trainined HIV test counselors. The same methodology provides a realistic and valid means for evaluating changes in skill levels following training.

S.C.657 NATIONWIDE TRENDS IN NUMBERS OF HIV TESTS AND POSITIVE TESTS AT PUBLICLY FUNDED COUNSELING AND TESTING SITES, U.S., 1988-89

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Objective. To describe trends by demographics, risk exposure, and site type.
Methods. Since 1988, CT data in aggregate form have been reported quarterly by demographic characteristics, risk exposure, and type of testing site.
Results. Since 1985, the number of voluntary HIV testing sites has increased from less than 500 to 5,013, and approximately 2.5 million publicly funded tests (including 150,000 positive tests, from an estimated 135,000 people) have been performed.

	JAN-MAR 1988 #HIV+/#TESTS (%POS)	JULY-SEPT 1989 #HIV+/#TESTS (%POS)
TOTAL	5,077/89,947 (5.6)	11,615/258,513 (4.5)
Stand-alone clinics	3,373/46,552 (7.3)	5,935/ 97,177 (6.1)
STD clinics	960/14,796 (6.5)	2,360/ 81,554 (2.9)
Drug treatment ctrs	6/ 255 (2.4)	229/ 4,856 (4.7)
Men sex w/men (MSM)	1,147/ 7,423 (15.5)	4,389/ 27,160 (16.2)
IVDU	488/ 4,572 (10.7)	2,126/ 19,022 (11.2)
Heterosex, part risk	492/21,679 (2.3)	1,650/ 90,114 (1.8)
Heterosex, no risk	89/14,002 (0.6)	1,498/ 60,253 (2.5)

MSM and IVDU account for 50% and 22%, respectively, of HIV+ tests. Although only 2% of heterosexuals were HIV+, because of the large number tested, 33% of HIV+ tests were in this category.
Conclusions. Demand for CT services has expanded since 1985. Counseling must focus on risk behaviors of both clients and their sex partners. Testing should continue in sites which are accessible and provide services to persons who engage in high risk behavior in areas of high HIV prevalence.

HIV Testing: Partner Notification

S.C.658 HIV PARTNER NOTIFICATION IN FLORIDA

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Objectives: Notification of partners of HIV infected persons of their exposure to the virus and provision of risk reduction information to a population at extreme risk for HIV infection.
Methods: HIV partner notification is available in all 67 HRS county public health units (CPHUs) through the Sexually Transmitted Disease (STD) Program. Seropositive individuals are encouraged to notify their partners or refer names for the STD staff to provide field notification.
Results: From January through October, 1989, a total of 1,497 seropositive individuals named 2,087 partners for field follow-up. 1,467 partners were located and counseled. Of the 1,286 partners who agreed to be tested, 390 or 30.3% were HIV seropositive.
Conclusions: HIV partner notification is an extremely effective method of HIV case finding. It is because of these results that Florida's STD staff considers HIV partner notification top priority status.

HIV Testing: Drug Users

S.C.659 HIV ANTIBODY COUNSELING AND TESTING (CT) FOR INTRAVENOUS DRUG USERS AND THEIR SEXUAL PARTNERS UNITED STATES, 1988-89

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Objective: CDC funds State/local health departments and drug abuse agencies to provide HIV/AIDS prevention services for intravenous drug users (IVDUs) in drug treatment centers (DTCs) and in other settings. This study documented the extent of such services in 1988-89.
Methods: Reports of HIV antibody counseling and testing (CT) supported by Federal funds between January 1988 and September 1989 were analyzed for the number of CT sites in DTCs and the numbers of counseling, HIV test, HIV positive test, and post-test counseling events in DTCs and other CT sites.
Results: The number of DTCs reporting CT activities increased from 10 to 173 with 18,632 tests and 1,004 positive tests for the period. The following activities were reported from DTCs and all other CT sites:

RISK GROUP	NUMBER OF TESTS JAN-MAR 1988	NUMBER OF TESTS JUL-SEPT 1989	TOTAL NUMBER OF TESTS 1/88-9/89	NUMBER TESTS HIV + 1/88-9/89	PERCENT OF TESTS HIV + 1/88-9/89
IVDUs	4,572	19,022	92,676	10,746	11.6%
HOMO/BISEX MALE IVDUs	199	2,132	13,295	2,274	17.1%
SEX PARTNERS OF IVDUs	1,060	7,163	36,167	1,792	4.9%

Conclusion: Publicly supported HIV CT of IVDUs and their sexual partners has increased dramatically between January-March 1988 and July-September 1989. These services are being used by substantial numbers of IVDUs and their sexual partners. Most IVDUs received CT services in sites that were not DTCs principally sexually transmitted disease clinics and HIV CT centers.

S.C.660 HIV COUNSELING AND TESTING IN METHADONE PROGRAMS: EFFECT ON TREATMENT COMPLIANCE

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OBJECTIVE: To assess the effect of HIV counseling and antibody testing (HIV-CT) on compliance in methadone treatment (MT).
METHODS: HIV-CT has been offered to opiate addicts in Connecticut MT programs since 1986. Records were available for 676 (69%) of 945 entrants to four MT clinics during July '87 - December '88. Of these, 82 (12%) were excluded because of previous HIV tests. The remaining 594 were studied to determine if HIV-CT influenced retention (probability of remaining in MT >12 months) or drug avoidance while in MT (>70% of routine urine samples free of illicit drugs).
RESULTS: The strongest independent predictors at entry of poor compliance in MT were reported cocaine use, unemployment, and age <30. Entrants who received initial HIV counseling (n=347), when compared to those who did not (n=247), had similar retention (47% vs 46%) but slightly higher drug avoidance (54% vs 47%, p=.07). This difference in drug avoidance persisted in multivariate models including the above predictors. Among counseled entrants who were HIV-tested and who remained long enough to have received post-test counseling, those receiving HIV-positive results (n=30), when compared to those receiving HIV-negative results (n=170) and those who did not return for test results (n=36), had similar retention (49% vs 48% vs 42%), but possibly lower drug avoidance (43% vs 56% vs 56%, p=.28).
CONCLUSION: HIV-CT is associated with at most small changes in compliance in methadone treatment.

S.C.661 IVDU'S PSYCHOLOGICAL, BEHAVIORAL, ATTITUDINAL STATUS AND LEVEL OF KNOWLEDGE ABOUT HIV AFTER HIV TESTING AND EDUCATION

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OBJECTIVE: To assess the effects of voluntary HIV antibody testing and an AIDS prevention education program for IVDUs in drug abuse treatment.
METHODS: One hundred eighty IVDUs entering inpatient or outpatient substance dependence treatment and who reported IV drug use were administered psychological, attitudinal and psychiatric symptom questionnaires and interviewed to determine the level of knowledge about HIV and high risk sexual and drug use behaviors. Follow-up assessments were made one week and one month after completing the education and receiving HIV antibody test results.
RESULTS: All the clinical symptom scales except phobia and the global rating scales on the psychiatric Symptom Checklist 90-R as well as the score on the Beck Depression Inventory were significantly lower at the follow-up rating periods (p <.001). Health practice attitudes and level of knowledge about HIV assessments showed significant improvement at the follow-up rating periods. These analyses were also performed separately on subjects (N=23) who tested HIV antibody positive, and who were informed of their HIV seropositive status. Overall, seropositive participants did not experience adverse psychological reactions to knowing their HIV status. Their attitude towards practicing healthy behaviors and their knowledge about HIV disease, however, improved.
CONCLUSION: IVDUs seeking treatment for drug dependence who participated in this program significantly improved their attitude towards practicing healthy behavior, knowledge about HIV and psychological status at one month follow-up. This study demonstrates that voluntary HIV education and antibody testing in IVDUs can be successfully implemented in drug abuse treatment programs.

S.C.662 CHARACTERISTICS OF IVDUs WHO HAVE BEEN HIV TESTED

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Objectives: To determine the proportion of out-of-treatment intravenous drug users (IVDUs) tested for HIV antibody and compare current HIV-risk behaviors of those who have been tested with those who have not.
Methods: A standard questionnaire was administered to Portland, Oregon IVDUs recruited by street outreach and local health department clinics. Information collected included demographics, HIV testing history and measures of HIV-risk behavior.
Results: Of 363 IVDUs interviewed, 201 (55%) had been tested for HIV antibody. Tested IVDUs did not differ from untested IVDUs by age, race or level of education. Those tested were more likely to be women (38% vs 23%, p=.007). Tested IVDUs were injecting as often as untested (median 2-6 times/week), were as likely to have shared an unclean needle the last time they used drugs (22% vs 25%), and to have been high (67% vs 74%) and not used a condom (78% vs 83%) the last time they had sex. Tested IVDUs were more likely to be gay or bisexual (OR=2.3, p=.05) and to have exchanged sex for money in the past 6 months (OR=2.8, p=.002). The average number of sexual partners in the past 6 months was 31 for tested compared to 7 for untested IVDUs (p=.004).
Conclusions: The majority of IVDUs in this population had undergone HIV testing. Compared to untested IVDUs, tested IVDUs were equally or more likely to be engaging in behavior that could transmit HIV. Emphasis should be placed on programs that reduce HIV risk behavior among IVDUs who have already been tested rather than on programs that test IVDUs who have not yet received this service.

HIV Testing: Adolescents

S.C.663 HIV+ ADOLESCENTS: HIV TESTING EXPERIENCES AND CHANGES IN RISK RELATED SEXUAL AND DRUG USE BEHAVIOR

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Objective. To describe the behavioral impact of knowing HIV+ status on risk-related sex & drug use among HIV infected adolescents.
Methods. A 50-item structured, confidential interview & chart review of 15 HIV+ (6♀, 9♂) adolescents ages 15-21y ($\bar{x}$=17.3 when tested HIV+) in an urban clinic for high risk youth who were HIV tested prior to enrollment.
Results. Sex/Drugs: Mean age at first intercourse was ♀=13.5y, ♂=14.4y. First partner was 7y older for ♀, 4y older in ♂. All ♀ and 2 ♂ self-identify as heterosexual; 8 of 9 ♂ had sex with other men but only 4 self-identify as homosexual, 3 bisexual. Sex abuse was reported in 9 of 15 and "survival sex" (sex for money, shelter or drugs) in 7 of 15 (6 of 9 ♂), all of whom used crack/cocaine, 1 IVDU. HIV testing: 13 of 15 referred by concerned adults. Ten of 15 had minimal or no pre-test counseling, 4 given no referral. Most common reaction was disbelief. Increase in suicidal ideation was common, but not suicide attempts. Pre/Post test behavior: Females: Pre-HIV+, 5♀ had <5 partners and 1 had >50 partners & all continued minimal or no condom use after HIV+. Males: 2 had <20 partners, 7 had >50. After HIV+ status known, 33% were abstinent, 33% increased condom use, 33% continued high risk sex. Overall, safer sex was used consistently only in ongoing relationships. Of 8 prior crack users, only those 4 not using drugs currently practice safer sex.
Conclusion. Despite HIV testing characterized by inadequate counseling and referrals, suicide attempts did not increase. Cessation of drug use increased safer sex practices more than knowledge of serostatus. Effective secondary prevention for HIV+ adolescents is critical to slow HIV spread.

HIV Testing: Prenatal and Family Planning Clinics

S.C.664

COSTS AND BENEFITS OF PRENATAL HIV SCREENING

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Objective: To assess the cost-effectiveness of prenatal HIV antibody testing offered under different seroprevalence conditions.
Method: We developed a decision analysis model and obtained data from published reports, current investigations, and surveys to determine outcome probabilities and costs. Variables included in our analysis were: HIV seroprevalence among pregnant women, testing acceptance, gestational age at first prenatal visit, choice regarding continuation of pregnancy, and perinatal transmission. We performed sensitivity analyses and examined different testing strategies (universal vs. targeted).
Results: At baseline probabilities of 0.35 for perinatal transmission, 0.75 for early prenatal care, and 0.50 for pregnancy continuation, results were:

HIV prevalence	Infant Cases (per 100 000 women tested)		Cost per Infant Case (US Dollars)	
	Detected	Averted	Detected	Averted
.0005	17	7	58 368	155 729
.005	172	64	5 930	15 813
.02	686	257	1 558	4 154

These costs only include laboratory expenses at $10 for ELISA and $35 for Western Blot tests. Further analyses including costs of counseling, savings of HIV-related infant care costs for cases averted, benefits of early care for infected infants and mothers, and prevention of future pregnancies and sexual transmission by women found to be seropositive will also be presented.
Conclusion: Decision analysis based on local conditions can guide selection of cost-effective prenatal HIV screening strategies.

S.C.665

PRENATAL SCREENING POLICIES FOR HIV ANTIBODY AT MAJOR OBSTETRIC CLINICAL CENTERS IN THE UNITED STATES

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OBJECTIVE: To describe prenatal screening policies for HIV antibody at major obstetric clinical centers in the United States.
METHODS: Obstetricians (OBs) from 49 medical centers funded by NIH for adult and/or pediatric HIV clinical trials were surveyed about the screening policies for the HIV + pregnant women under their care. These centers are estimated to have cared for 25-33% of HIV + women who delivered during 1988. RESULTS: 96% (47/49) of the clinical centers reported adopting specific policies for prenatal HIV antibody screening. 63% (31/49) of centers have a specific, pretest counseling protocol. All centers provide HIV + test results only in person. Post test counseling sessions were longer for HIV + women (over 30 minutes) than HIV - women (under 20 minutes). The majority of centers (78%) record the HIV test results in the medical record. Counseling pregnant HIV + women regarding options to continue pregnancy was nondirective in 90% (44/49) of centers; in centers that provided data (43/49), 85% of women who tested HIV + elected to continue their pregnancy. CONCLUSION: While prenatal screening policies have been implemented at the majority of medical centers caring for a significant proportion of HIV + women, a majority of HIV + women identified at these centers opt to continue their pregnancy.

S.C.666

RESPONSE OF PRENATAL CLINIC POPULATIONS TO VOLUNTARY HIV EDUCATION AND TESTING.

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Objective. To show that voluntary prenatal HIV education and testing is well accepted by clinic clients and detects women with no identifiable risk
Methods. New Jersey has the highest percentage of AIDS cases in women in the U.S. Newborn serosurveys for HIV have shown a statewide seroprevalence of 0.5%. The Department recommended that all pregnant women be given HIV education, risk reduction counseling and be offered a voluntary confidential HIV test. Prior to this recommendation 10 state/federally funded prenatal clinics had already begun to educate and test pregnant clients. We surveyed these clinics to assess their experience with voluntary HIV education, counseling and testing.
Results. Over 3000 prenatal visits were represented by the survey. All clinics did HIV education (transmission), risk reduction counseling (drug use and sex behavior) and pre/post test counseling in accordance with state guidelines. Testing was voluntarily offered to most clients, acceptance of testing ranged from 3% to over 90%. Preliminary data show a median HIV prevalence of 3.5%. Twenty percent of women testing positive in some clinics had no drug or sexual risk for HIV exposure identified prior to testing.
Conclusion. Voluntary prenatal HIV education, counseling and testing is well accepted by women in high prevalence areas. Voluntary testing of all pregnant women is an essential tool for perinatal AIDS prevention as heterosexual transmission increases in women with no identifiable risk.

S.C.667

HIV TESTING IN A HIGH-RISK POST-PARTUM POPULATION

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OBJECTIVE: To assess the efficacy of post-partum HIV counselling.
METHODS: Eighty consecutive post-partum women on the obstetrical service of BLHC in the South Bronx were identified as being at-risk for HIV disease. Sixty-nine (86%) consented to a pre-test interview, counselling and newborn HIV testing.
RESULTS: Of the patients interviewed, 45% reported having received late or no prenatal care, 74% admitted to using drugs during pregnancy and 55% of them had positive urine toxicologies. Nine newborns (13%) were HIV seropositive. Of the 18 mothers denying drug use, 33% of their infants had positive urine toxicologies. Twenty-six mothers had been previously HIV tested, but only 15 (14 negative and 1 positive) knew their results; three had HIV seropositive babies. Of the 11 women who did not know their status, two had HIV seropositive newborns. Mothers of seropositive newborns were older (mean age 30.0 vs. 25.5), more likely to have a positive drug history (8/9) and have had a STD (6/9) than mothers of negative babies. Only 8 of 69 (3HIV+, 5HIV-) women returned for test results despite repeated attempts to contact them; 62% had no phone and 22% supplied incorrect addresses.
CONCLUSION: Our results highlight the difficulty involved in engaging at-risk women in ongoing medical care and points to the need for universal pre and post-partum HIV counselling and testing coupled with a rapid turn around time for test results so that these issues may be addressed prior to hospital discharge.

S.C.668 ACCEPTABILITY OF SCREENING FOR HIV INFECTION AMONG WOMEN ATTENDING FAMILY PLANNING CLINICS IN NAIROBI, KENYA

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Objectives: To determine the acceptability of screening for HIV among women not believed to be at particularly high risk for HIV infection.
Methods: Women attending two urban family planning clinics in Nairobi from Oct. 1989 - Jan. 1990 were asked to volunteer for a study involving HIV screening. The objectives were explained and specific consent to HIV testing requested after pre-test counselling. Consenting women were asked if they would like to know the result, like their spouse to know, and who should inform the spouse. We asked acceptors to return in 14 days for counselling.
Results: Of 783 women approached 747 (95%) accepted screening. Reasons for refusal included fear of blood drawing (31%), fear of the test result (11%), or fear of spouses' reaction (14%), confidence of seronegativity (17%), and time constraints (22%). Age, marital status, and parity among refusers were similar to acceptors, however, refusers were more likely to have had <5 years of school (29%) than acceptors (14%). Prevalence of oral contraceptive, depo-provera, and IUD use was similar. Most (99%) acceptors wanted to be informed of the result; 82% wanted their spouses to know. Of these, 82% would inform their spouses themselves. Of the seropositives 45% returned for the HIV result compared with 53% of all women screened.
Conclusions: Acceptability of HIV screening and expressed willingness to learn results was high in this population. Reasons for the relatively low return rate need to be explored before introduction of screening programs.

S.C.669 HIV TESTING AND EDUCATION PROMOTE SAFER SEX AMONG URBAN WOMEN IN RWANDA

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Objective: To determine variables associated with behaviour change and condom/spermicide use among women who received AIDS education and HIV testing in Kigali, Rwanda.
Method: A representative sample of 1469 childbearing women was enrolled in a prospective study of HIV infection and behaviour change in 1988. Women completed a questionnaire, saw an educational video in the local language followed by a group discussion, underwent HIV testing and counseling and were offered condoms (recommended) and/or spermicides. Education and HIV testing were also offered to the women's sexual partners.
Results: Prior to the study, 9% of women had tried condoms and/or spermicides, and 3% had reduced their number of sex partners due to the threat of AIDS. At 6 months, 443/1298 (34%) who came in for followup claimed they were having safer sex in response to information given in the project: 21% of 1298 were using condoms, 16% were using spermicides, 2% had fewer sex partners. Women whose partners came in to be tested, women who were HIV+, or who had multiple or promiscuous partners were more likely to practice safer sex. However, women in less socially stable partner relationships more frequently chose spermicides over condoms, while women in more stable relationships more frequently chose condoms. Women rated the video and HIV testing for themselves and partners as the two most important factors convincing them to change behaviour.
Conclusion: HIV testing and education are important in promoting safer sex behaviours among African women. However, the relationship of women to their partners also influences their ability to change behaviour. Intervention efforts, therefore, must also target men.

S.C.670 PROGRAM OF HIV TESTING AT HOSPITAL ADMISSION (PHHA) FOR PREGNANT WOMEN IN LATIUM, ITALY.

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OBJECTIVE: To determine HIV seroprevalence in pregnant women, and to estimate levels and trends of HIV infection in reproductive-aged women.
METHODS: Since April 1st, 1989 all women hospitalized for "end of pregnancy" [i.e. delivery (DEL), voluntary interruption (VI), spontaneous abortion (SA)] in Latium, Italy, have been tested for anti-HIV antibodies: each woman chooses whether her test will be performed nominally (NT) or in a completely blinded way. For positive NTs, detailed socio-demographic information is obtained by record linkage with the Regional Natality and Infant Mortality Surveillance System. Prevalence, and exact 95% C.I. with correction for finite population, are computed quarterly for each kind of event.
RESULTS: The first two quarters of PHHA activity are summarized below:

	Apr-Jun			Jul-Sep			Apr-Sep		
	DEL	VI	SA	DEL	VI	SA	DEL	VI	SA
Total tests	4059	2227	542	4847	2334	664	8906	4,561	1,206
% NT	95.2	84.9	94.1	95.0	83.4	92.5	91.6	84.1	93.2
n. anti-HIV+	9	9	0	18	16	0	27	25	0
prev. NT x 1,000	2.33	4.76	0.00	3.91	8.22	0.00	3.19	6.51	0.00
95% C.I. lower	1.27	2.62	0.00	2.56	5.28	0.00	2.27	4.61	0.00
upper	4.13	8.35	6.49	5.62	12.10	4.67	4.33	8.95	2.74

CONCLUSION: A PHHA is feasible. Our data, though preliminary, indicate a much higher prevalence than that estimated from surveillance data, an increase of prevalence over time, a high prevalence among VI, possibly related to elective abortion by HIV infected women.

S.C.671 VOLUNTARY SCREENING OF HIV INFECTION IN ALL PREGNANT WOMEN

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Objective: to evaluate our policy of systematic voluntary HIV-antibody testing of all women followed in our Obstetrics Department since 6.1987 and its influence on pregnancy decisions.
Patients and methods: We analysed 2364 records of patients who gave birth in 1988 to determine HIV seroprevalence, proportion of patients tested and of test refusals. We also analysed 58 HIV-positive pregnancies followed between 1.1986 and 12.1989 for mode of acquisition of HIV infection, period of diagnosis and pregnancy decisions.
Results: In 1988, HIV seroprevalence in parturients tested was 0.18%; 92.4% of women were tested, 2.3% refused the test. Of 58 HIV+ women followed since 1986, 31 had an abortion performed (24 IVDU, 5 sexually transmitted, 2 by unknown route), and 23 decided to carry on their pregnancy (14 IVDU, 8 sexually transmitted and 1 unknown). We observed 2 spontaneous abortions and 2 ectopic pregnancies. 47 women knew they were HIV-positive before pregnancy or before the 24th week of gestation: 29 requested an abortion (13 because of seropositivity); 18 continued their pregnancy. Since the introduction of systematic voluntary testing during pregnancy in june 1987, we discovered 12 HIV+ women: 4 did not present with anamnestic risk factors. Four were discovered at term. Among the 8 patients discovered during the first two trimesters of pregnancy, 4 had an abortion performed and 4 continued their pregnancy.
Conclusions: Prevalence of HIV infection in our obstetrical population is low. Testing is well accepted. In 2.5 years of systematic voluntary testing, we discovered only 4 HIV positive persons without anamnestic risk factors. Data from the litterature as well as our own experience show that despite of its pediatric and possibly maternal implications, knowledge of serostatus does not have an important influence on pregnancy decisions.Testing must be offered on a voluntary basis with the right to strict confidentiality, information of results and access to care. Strict laboratory concept is essential. Systematic testing offers the opportunity of counselling the entire obstetrical population. Testing should be done before or at the beginning of pregnancy, so that counselling, medical and social care can take place.

HIV Testing: STD Clinics

S.C.672 CHARACTERISTICS ASSOCIATED WITH A LOW RETURN RATE FOR HIV POST-TEST COUNSELING AMONG CLIENTS IN A COMMUNITY-BASED SEXUALLY TRANSMITTED DISEASE CLINIC IN LOS ANGELES COUNTY

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Objective: To describe the characteristics of sexually transmitted disease (STD) patients in an inner city clinic who did not return for test results after confidential HIV testing.
Methods: Between January 1 and November 30, 1989, 476 STD patients accepted HIV testing and were interviewed to determine HIV risk factors. Test results were given in a counseling session scheduled 2 weeks after testing. Patients who failed to return were compared with those who returned with respect to demographic variables, drug use, sexual orientation, HIV status and home zip code.
Results: Of 476 STD patients pre-test counseled and confidentially tested for HIV, 381 (80%) did not return for their scheduled post-test appointments. The strongest differences were observed with age ($p < 0.02$) and education.($p < 0.004$); 41.2% (157/381) of the "no returns" were < 25 years old and 77.6% (295/380) had at least a junior high education. Males were more likely ($p < 0.05$) to return for post-test appointments than females. Of 42 Hispanic and 426 black patients fewer than half returned (40.5% and 17.6%, respectively). Sexual orientation, a history of intravenous drug use and HIV status did not differ between the groups. Although they made up only 15.5% (74/476) of the sample, patients living outside of the community were equally as likely to return as those within the clinic catchment area.
Conclusions: Specific reasons for failure to return for test results in this inner city STD clinic should be identified. Younger and less educated patients should be targeted for interventions. Successful follow-up and case management of HIV-infected patients may reduce HIV morbidity and prevent further HIV transmission in this community.

S.C.673 COMPARISON OF ACCEPTORS AND REFUSERS OF CONFIDENTIAL HIV TESTING AMONG PATIENTS IN SEXUALLY TRANSMITTED DISEASE CLINICS IN LOS ANGELES COUNTY

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Objective: To determine HIV seroprevalence among sexually transmitted disease (STD) patients and compare those accepting and refusing confidential HIV antibody (Ab) testing.
Methods: Eight STD clinics in LAC were chosen on the basis of geographic and demographic representativeness. Between January 1 and December 31, 1989, consecutive clinic attendees never tested for HIV Ab were counseled and offered testing. Acceptors submitted a blood specimen for HIV Ab testing; refusers were tested for HIV Ab using discarded VDRL sera after all personal identifiers were removed. Repeat ELISA positives were confirmed by immunofluorescent Ab and Western blot; test results were linked to self-reported demographic and risk factor information. Acceptance rates and seroprevalence rates were stratified by age, sex, race/ethnicity and sexual orientation for comparison.
Results: Of the 21,643 consecutive STD patients offered HIV Ab testing, 7,354 (44%) accepted and 14,289 (66%) refused confidential testing. Overall, HIV seroprevalence was 2.8% (610/21,643). Of the 610 seropositives, there were 199 (33%) homosexual males, 158 (26%) bisexual males, 190 (31%) heterosexual males, 61 (10%) heterosexual females, and 2 (0.3%) lesbian/bisexual females. Sixty-seven percent (410/610) of HIV Ab positive patients had refused testing; seropositives were significantly more likely to refuse than to accept testing, independent of age, sex, race/ethnicity and sexual orientation.
Conclusions: Overall, the acceptance rate of confidential testing was low among STD patients, despite the 2.8% HIV seroprevalence. HIV seropositive patients were more likely to refuse than to accept testing. Since the LAC voluntary confidential testing program identified only 1/3 of seropositive STD clinic attendees, efforts should be made to increase acceptance rates in this patient population.

S.C.674 CHARACTERISTICS OF A HIGH RISK POPULATION REFUSING ROUTINE CONFIDENTIAL HIV TESTING OFFERED IN A SEXUALLY TRANSMITTED DISEASE (STD) CLINIC

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Objective: To evaluate a high risk population refusing routine confidential HIV testing offered in an STD clinic. Methods: The CDH, in association with the Centers for Disease Control and the UCHSC STD Clinic, conducted a blinded HIV seroprevalence survey of all patients presenting at UCHSC STD Clinic for new disease episodes April - September 1989. Demographic and risk factor data were collected, and data identifying patient reasons for refusal of voluntary HIV testing. Blinded HIV results were available for patients undergoing routine VDRL testing. Results: Of 1386 participants, 414 (29.9%) refused voluntary testing. There were no statistically significant differences between patients consenting and refusing voluntary HIV testing. The male homo/bisexual population had the highest HIV seroprevalence rate (36.0%) and the highest refusal rate (33.6%). Of those refusing, 72.2% refused because they had previously been tested. Of these, 89.7% reported they were negative through previous testing, although blinded testing indicated 2.9% were actually positive. Similar results were seen in other non-homo/bisexual populations. Conclusions: Individuals using an STD clinic and thus considered to be at high risk for HIV infection are receiving initial HIV testing but are refusing to be tested on a continuing basis, because they previously tested negative. Counseling of HIV negative individuals needs to stress the dynamic nature of HIV infection, especially with high risk behaviors, and the need for continued testing.

S.C.675 ARE CLIENTS AT HIGH RISK BEING TESTED FOR HIV IN THE STD CLINIC? DADE COUNTY, FLORIDA, 1988-1989

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Objective: To see if STD clinic clients at high risk are being tested for HIV infection.
Methods: We examined computerized Dade County STD clinic records from 1986-1989 for clients seen in the clinic in 1988-1989. All clients in 1988-1989 were offered HIV testing.
Results: Of 47,453 clients, 66% were black, 14% white, and 18% hispanic; 34% were female; 45% were tested for HIV. The proportion not tested was: higher in blacks (57%) and whites (55%) than hispanics (48%); higher in those with a positive syphilis (RPR) test (59%) than in those with all negative RPRs (51%); higher in those with a positive gonorrhea (GC) culture (56%) than in those with all negative GC tests (49%) in their clinic record. Those not tested had fewer clinic visits (mean=1.8) than those tested (mean=2.9).

Of those tested for HIV, 2,402 clients (11.3%) were HIV+. Among those tested, the proportion HIV+ was: higher in blacks (12.4%) than hispanics (10.6%) or whites (8.1%); higher in males (12.1%) than females (9.9%); higher in those with a +RPR (19%; 95% CI=18-20%) than in those with all negative RPRs (8%; 95% CI=7.4-8.4%); but was similar in those with a positive GC culture (10.6%; 95% CI=9.9-11.5%) compared to those with negative GC cultures (11.7%; 95% CI=11.1-12.1%).
Conclusion: Computerized records facilitate evaluation of testing services. Many persons with HIV infection were identified. Many persons who appear to be at high risk are not being tested.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.676 TAILORING HIV PRE-TEST COUNSELING IN SEXUALLY TRANSMITTED DISEASE (STD) CLINICS ACCORDING TO ANTICIPATED NON-RETURN RATES IN SUBCATEGORIES OF PATIENTS

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Objective: Analysis of characteristics associated with return for results and counseling in STD clinic patients (STD-CP) requesting HIV testing.
Methods: During a 28-month period (6/87-9/89), return rates were monitored in 4,913 STD-CP who were offered free, confidential HIV antibody testing. Demographic and risk behavior information was compared to HIV serostatus and post-test return rates.
Results: Overall, seropositive STD-CP returned more frequently than seronegative STD-CP (221/311 [71%] vs. 2,887/4,601 [63%], p<0.01), and seropositive men were more likely to return than seropositive women (185/248 [75%] vs. 27/50 [54%], p<0.01). Regardless of serostatus, white patients were more likely to return than non-whites (2,341/3,326 [70%] vs. 711/1,494 [48%], p<0.001), and return rates were low in Intravenous Drug Users (IVDU) and high in homo/bisexual males:

Risk Behavior	Seropositive Return Rates	Overall Return Rates
Homo/Bisexual	125/145 (86%)	614/733 (84%)
IVDU	62/109 (59%)	299/510 (59%)
Other High Risk	8/10 (80%)	134/207 (65%)
Lower/No Risk	26/47 (55%)	2061/3463 (60%)

Conclusion: Because behavioral risk appears more predictive of return for follow-up than serostatus, prevention/education strategies should provide additional interventions to compensate for low return groups, such as IVDU.

Models for Behavior Change: Sexual Transmission

S.C.677 IMPACT OF FOUR HIV/AIDS PREVENTION PROGRAMS ON PSYCHOSOCIAL FACTORS THOUGHT TO FACILITATE RISK BEHAVIOR CHANGE

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OBJECTIVE: To evaluate the impact of four HIV/AIDS prevention programs on psychosocial factors thought to facilitate behavior change.
METHODS: Men who have sex with men were recruited to participate in HIV/AIDS intervention programs in Denver, Seattle, Dallas and Long Beach. In 1988, 1947 men completed an initial questionnaire, and 1032 returned for follow-up assessment six months later. Reliability analysis was used to develop psychosocial scales. A signed rank test evaluated whether there were significant changes in scale scores from baseline to follow-up.
RESULTS: Four scales were developed from psychosocial questionnaire items: self-efficacy/confidence (alpha = .62), risk reduction skills (alpha = .66), perceived normative support for risk reduction (alpha = .73), and belief that safe sex is effective in reducing risk of HIV acquisition (alpha = .94). In all four cities subjects' confidence in their ability to protect themselves from AIDS was increased. In three of four cities, risk reduction skills increased. In two cities perceived normative support for risk reduction remained the same, whereas two cities showed an increase in perceived normative support. Finally, in two cities a substantial increase in belief that safe sex is effective was found post-intervention; nearly all subjects in the other two cities believed in the effectiveness of safe sex at both baseline and follow-up.
CONCLUSION: HIV/AIDS prevention programs for gay and bisexual men in four cities influenced important psychosocial factors that may underly risk behavior change.

S.C.678 SAFER SEX EDUCATION AND STD REINFECTION

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Objective: To decrease STD reinfection among patients with STDs by use of skills-based and social influence-based educational programs for safer sex.
Methods: A skills-based and social influences-based intervention were utilized to promote safer sex and condom use among patients seeking services at public health sexually transmitted disease clinics. Facilitators gave didactic group presentations followed by discussion. Study patients for the skills-based approach were 97 patients registered to see a venereal disease specialist on the day the presentation was given and control subjects were 95 patients who were registered on days the presentation was not given. In the social influence approach there were 203 control and 220 study subjects. Medical records were reviewed after 7-12 months and rates of newly incident STDs acquired subsequent to the intervention were compared between control and study groups.
Results: Patients in the study group of the skills based approach evidenced a 50% reduction in STD reinfections compared to controls (p<.10). In the social influences approach, males exposed to the intervention had a 65% reduction in reinfections compared to controls (p<.05). The strongest predictor of reinfection was prior infection.
Conclusion: Education targeted at STD patients in a group setting can be effective in reducing STD reinfection. More research on mediating variables is indicated.

S.C.679 SOCIAL NETWORKS IN THE TRANSMISSION OF HIV INFECTION

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Objective: We describe the structure of, and identify and trace disease within, urban social networks comprising prostitute women and intravenous drug users (IVDUs).
Methods: Prostitutes, IVDUs, and their partners are tested and asked the names of persons with whom they have sex, use drugs, or share rooms and meals. Respondents are followed for 3 years; contacts named by two or more respondents are also recruited.
Results: As of 1 January 1990, 284 individuals were tested, 220 interviewed, and approximately 3000 contacts named. Of those tested, 10 had evidence of HIV infection, 71 of hepatitis B, and 13 of syphilis. A core-connected region containing HIV infection and linking at least 81 individuals was identified.
Conclusions: Individuals (even if engaged in illegal activity) give detailed personal information, including the identity of contacts, if properly approached. Such information supplements traditional epidemiological data, shows how network structure influences disease dissemination, and may facilitate prevention activities which go beyond partner notification, such as focused education within affected networks.

S.C.680 A SURVEY OF ADULT BOOKSTORES: ASSESSING THE POTENTIAL FOR AIDS EDUCATION.

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A survey was conducted of 8 of the 14 known adult bookstores in Franklin County during November 1989. Local physicians were concerned about increasing numbers of HIV positive clients who reported ongoing anonymous sexual activity at bookstores. The purpose of the survey was to learn what type of AIDS information was available, and to assess the potential for AIDS education. All 8 bookstores had booths for viewing videotapes, and all sold magazines, videocassettes, condoms, poppers, and other items. Although staff reported having seen promotions of safer sex videotapes, none of the bookstores had them available to patrons. None of the bookstores had posters, pamphlets or other information about safer sex, AIDS hotline numbers, or HIV testing. Only 1 bookstore reported anonymous sexual activity on-site, however this was implied at other bookstores through reports of couples using booths and discarded condoms on the premises. The staff and/or managers were cooperative and stated a willingness to work with us to distribute AIDS information. We conclude that activities of adult bookstores warrant public health intervention and plan to initiate an aggressive, cooperative AIDS education campaign.

S.C.681 PREVENTING HIV INFECTION AMONG THE HOMELESS OF A MEDIUM-SIZE USA CITY: A PILOT PROJECT EMPHASIZING EDUCATION, COUNSELING, AND TESTING

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Objective: USA homeless populations have been largely ignored by HIV/AIDS prevention efforts. This is especially true in the USA's medium-sized cities. This pilot project attempted to develop and evaluate a prevention strategy for the homeless which emphasized education, counseling, and testing.
Methods: Key community leaders working with the homeless and the homeless themselves were surveyed about developing the most appropriate strategies to reach homeless populations. From this data a street outreach model was developed utilizing trained medical students, volunteers, and members of the homeless population. Appropriate materials were developed for this outreach. Initial contact involved education and counseling. A second phase involved the routine offering of HIV antibody testing. Knowledge, attitudes, and self-reported behavior were pre- and post- tested.
Results: Collected data and the observations of service delivery personnel indicate that the level of HIV/AIDS knowledge among the homeless is low; attitudes about HIV infection vary greatly; and that high risk sexual and drug-related behaviors exist at significant levels. The pilot intervention raised knowledge levels and reduced inappropriate fear of HIV/AIDS.

S.C.682 STD/AIDS PREVENTION FOR RISK BEHAVIOUR INDIVIDUALS (PREVINA) : A HEALTH PROMOTION PROGRAMME UNDER WAY IN BRAZIL

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*National Division of STD/AIDS - MOH, Brasilia-DF, Brazil.

Objective:To reach the hard-to-reach individuals, such as IVDU, prostitutes, prison inmates, homosexuals and street kids, introducing and implementing the use of condoms, safe-sex methods, and desinfection-sterilization techniques.
Methods:Firstly identifying and training professionals who work closer to the target populations (prisons, rehabilitation centers, etc.). Then training individuals who are recognizedly leaders, turning them into street educators or "multipliers" of information, using materials adapted to their language and customs. Thirdly supporting the multipliers so they can perform their task for as long as possible, under continuous supervision. Several methods of evaluation are being used, such as pre/post tests, questionnaires, interviews and observation.
Results: The two first steps were successfully attained during the first year of the program. A team of 10 professionals was trained for each of the 27 States and some community ledears were identified and also trained. All material was tested twice and adapted whenever necessary. At least 6 members of each risk group are expected to become multipliers in every State capital and main cities of the country during the next three years. In 1990, the 7 most prevalent States for AIDS are going to be strongly supported by the government and the NGO's involved, becoming pilots of the program. In 1991, 8 others will be included and the final 12 in 1992. Some epidemiological researchers will be done to evaluate the impact of the program in 5 years.
Conclusion: The AIDS virus has been rather successful using the strategy of one contaminating several others, who will contaminate hundreds of others, and so on. We expect to use the same strategy to backfire HIV, then the epidemic may be halted and science once more prevail.

S.C.683 TITRE : IN FRONT OF AIDS WHICH IS THE ALTERNATIVE FOR HIV HIGH RISK POPULATIONS. THE EXPERIENCE OF KAOLACK IN SENEGAL.

OBJECTIF :
- I.E.about prevention of S.T.D.
- Une some prostitutes as leaders for the information and educationts the others prostitutes
- Informe and educate their concubines
- Offert to them a possibilite of reconversion (another economicol activity).

METHODS :
- Establishing a relation of confidence
- Development of an integrated programme of education
- Monitorrig of behavioural changes and condom use
- To support other economic activities as alternative for prostitution

RESULTS :

	PROSTITUTES LIVING in community	PROSTITUTES LIVING dispersed
NO Of contacts	8 / day	4 / day
Price	1 $	3 $
Average age	38 years	30 years
% HIV	37%	15%
Condom use at start	< 2%	6%
One year after	80%	59%

CONCLUSION : Behavioural change of prostitutes is well achievable

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.684 AIDS: DETERMINANTS OF SEXUAL BEHAVIOURAL CHANGE

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Objective: A large-scale effort has been launched in South Africa to heighten the public's awareness of AIDS, but it seems that while the public's knowledge about AIDS has improved, little has been achieved in altering sexual behaviour. The objective of my research project is to determine which psycho-social factors predict changes in high risk sexual behaviour. Intercultural differences also form part of the investigation.
Methods: A Survey study was conducted (Nov.1989) on a randomly selected sample of 105 middle to upper class educated subjects (34.4% Blacks, 50,5% Whites and 15,1% others). Ages ranged from 18 to 51 years; 55% were male and 45% female, and they represented 20 different occupations. Multiple regression analysis was applied to determine the best subset of variables that predicts the dependent variable, i.e. change in sexual behaviour. T-tests were used to determine significance of differences between means.
Results: Subjects were generally well-informed about different aspects of AIDS ($M=41,02$; $SD=9,16$; Range=0-57). However, a few myths about transmission still prevails. Knowledge about AIDS did not, however, predict change in sexual behaviour. Fifty one percent of the total variance of changes in sexual behavior was significantly ($p<0,05$) predicted by: subjective experience of stress due to AIDS (17,5%); number of children (9,4%); perception of own risk in contracting AIDS (8%); contact with an HIV positive person (6,8%); anxiety about contact with HIV positive persons (6,7%); and monthly income (2,5%). Black South Africans were less knowledgeable about AIDS, $t(87)=5,92;p<0,01$; they experienced more stress about the disease, $t(87)=7,88;p<0,01$; were more convinced that they are at risk, $t(87)=2,87;p<0,01$; and were more willing to change their sexual habits, $t(87)=2,51;p<0,01$; than whites.
Conclusion: Educational models should be modified to include more than just factual information about AIDS: Only if people are convinced that they are personally at risk regarding AIDS, will they change high risk behaviour. Educational AIDS campaigns should therefore be geared towards the needs of specific target groups instead of society as a whole.

S.C.685 WHEN PREVENTION FAILS : WHY DO THEY SEROCONVERT AFTER A PREVIUS COUNCELLING.

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Objective : to describe HIV seroconvertors characteristics behaviors, attitudes, social identity. To understand why they seroconvert after a previus councelling.
Methods : the sample consisted of 8 homosexual men and 12 drug abusers (IVDA) recruited between 1987 and 1989 through 2 Free HIV testing clinics in Aix en Provence. All respondants were previously seronegative, with at least 6 months between these 2 tests. Patients were interviewed about meaning of the test, their knowledge about AIDS, the changes they made in their life because of AIDS, and how they explain that they became HIV seropositif. They were compared to the same AIDS risk seronegative population.
Results : Their knowledge of AIDS was the same in the 2 groups : 1) The 8 homosexual seroconvertors were significantly more likely to : stop having safe sex with a partner after having sex with him a few times, use codoms less frequentely. 2) Twelve IVDA (8 men, 4 women) were significantly more likely to share needles, not to use condoms. The reasons of seroconvertion from their point of view : for homosexual men, to trust and love, stranght of pulsion, fall of carefullness in special circumstances (summer holidays). For the IVDA, to crisis events with no seringe available immediatly, denial of transmission by sexual contact and have a magic thinking that they cannot get the virus.
Conclusion : For people studied, correct information does not mean they will avoid to have risk. Specific AIDS informations must be set up according to each own risks and for long periode of time;

S.C.686 SEXUAL PRACTICES ASSOCIATED WITH INCREASED RISK OF HIV INFECTION : THE DANGER OF SELF-DEFINED SAFER-SEX ?

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Objective : To assess the risk of HIV infection among homosexual men with regard to compliance to safer sex recommendations.

Methods : Cross-sectional study among 250 homosexual outpatients of general practitioners and venereologists in the Paris area. The subjects were asymptomatic and of unknown or of previously negative serological status. Before being (re)tested, they completed a self-administred questionnaire focused on unprotected and protected sexual practices, including the frequency and name of extraneous lubricants used with condoms. History of venereal disease were recorded by the physician. Adjusted comparisons were made using the Mantel-Haenszel procedure. Significant variables were then tested using a logistic regression.

Results : Seropositive subjects were more likely than seronegative ones to have high number of sex partners and a high frequency of unprotected anal intercourse. After adjustment for these previously established risk factors, variables significantly associated with seropositivity were : 1) condom-protected anal receptive intercourse with extraneous lubricant, 2) anal washing after sex, 3) use of nitrite inhalants, 4) history of syphilis. Only 1), 2) and 3) remainded significant in the multivariate analysis. In contrast, other sexual practices - including condom-protected anal receptive intercourse without extraneous lubricant - were not associated to an increased risk. Of the subjects having condom-protected anal receptive intercourse with lubricants, only 28 percent used exclusively water-based ones.

Conclusion : Some homosexuals have used inappropriate lubricants with the condom, and/or have washed after sex. In doing so, they have increased their risk of becoming HIV infected. We suggest that this behavior may stem from a misguided attempt to make sex safer.

S.C.687 AN OUTREACH PROGRAM TO PROMOTE SAFER SEX IN THE COMMUNITY

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Objectives: To evaluate a pilot program for AIDS-prevention by outreach work; to differentiate methods of street-work in various high risk groups; to assess acceptance, problems and positive effects of the pilot program.
Methods: Since 1986 47 male and female outreach workers are working in about 30 cities in the FRG. The pilot program (and study) is funded by the Federal Ministery of Health as part of the AIDS-prevention program. The task of these specialists is to promote "safer sex"-rules by talking to the people and by providing leaflets, condoms, needles and syringes in bars, saunas and on the streets in certain areas of the big cities. The target groups are homosexual men, IVDUs and prostitutes.
The methods to evaluate this program are periodical interviews with street-workers, typological order of activities in a time frame, analysis of conditions, plans, practice and feed-backs of the program, action research.
Results: The compliance of the street-workers themselves and their messages are very high. Recent studies in risk groups and their changes of behaviour showed, that the closer the contact to helping agencies, the higher the level of behaviour changes. There are some side effects of the program, such as innovations in the public health system, increase of anti-discriminative attitudes among health care employees etc.
Conclusion: In a very short period of time the outreach workers became part of the social support system of people at risk. This type of personal prevention is much more effective than prevention by media.

S.C.688

COMPARISON OF FEAR AND HUMOUR TACTICS IN THE UK NATIONAL AIDS CAMPAIGN.

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Objective - To compare two models of Health Education on higher and lower risk individuals - namely fear and humour.
Methods - The psychology of behaviour change is complex. It needs to be urgently understood while this is the only effective preventive measure against HIV acquisition. The existence of health education campaigns on AIDS may raise awareness generally, but does it change behaviour in both targetted and non-targetted populations? If so, how and if not, why not? Both fear arousal and humour have been employed in the UK campaigns over the past three years. A set of visual and audio-visual material was evaluated using a sample of 200 subjects. These subjects were drawn from consecutive attenders at the Drug Dependency Unit in the highest area of HIV prevalence in the UK and from a geographically matched general population sample. Psychological anxiety levels, sexual behaviour, risk exposure and appraisal of the material was monitored.
Results - The two approaches evoke markedly different responses. The drug using group had significantly higher anxiety levels in the first place and were thus more vulnerable in terms of anxiety provoking material. Sexual and risky behaviour was not dramatically affected by either approach. Changes that were noted were ones of degree, rather than absolute changes. These may reduce but not remove risk.
Conclusion - Health advertising has a limited role to play. It increases awareness, but has marginal effects on anxiety or behaviour. Fear arousal as a model fared less well than humour.

S.C.689

EVALUATION OF FOCUSED COGNITIVE- BEHAVIOURAL INTERVENTION WITH HIV SEROPOSITIVE INDIVIDUALS

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Objective: To evaluate the efficacy of short-term focused cognitive-behavioural intervention in minimizing adverse psychological consequences for individuals infected with HIV.
Methods: 60 seropositive, homosexual men were assessed for adverse psychological symptomatology and available coping skills. Those presenting with low levels of coping skills were offerred 10 sessions of intervention specifically directed at increasing self-esteem, problem solving skills and self-efficacy. Comparisons of psychological symptomatology were made between those with low and high coping skills both before and after psychological intervention.
Results: A high, negative correlation was found between coping skills and reported levels of depression and anxiety. Following intervention patients not only showed increased levels of self-esteem, self-efficacy and greater problem solving skills, but also evidenced less depression and anxiety and generally reported healthier lifestyles.
Conclusions: Determination of specific deficits in the psychological functioning of HIV seropositive patients allowed direct, specific, short-term intervention to be made. This provided individuals with skills which enabled them to cope with the adverse consequences of HIV infection and which reduced the rates of anxiety and depression seen.

Models for Behavior Change: Condom Use

S.C.690

KNOWLEDGE AND AWARENESS OF AIDS AMONG PATIENTS AT A SEXUALLY TRANSMITTED DISEASE CLINIC

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Objective: To evaluate knowledge and perceptions concerning AIDS among patients at a sexually transmitted disease (STD) clinic.
Methods: The study site is a centralized STD clinic to which a majority of men come for STD treatment. A confidential questionnaire that collected demographic information and asked about condom usage, sexual activity and AIDS was offered to each male with a newly diagnosed STD (n=253).
Results: Study participants were representative of the normal clinic population. Over 90% of the men answered most of the questions about AIDS correctly. However, more than 30% felt that people donating blood are at increased risk of acquiring HIV and 64% felt that being bitten by a mosquito carrying the HIV virus puts one at increased risk for acquiring HIV. No significant relationships were found between the men's level of knowledge about AIDS and their age, educational level and ethnicity. Men with six or more years of military service were more likely to believe that blood donors are at risk of becoming infected with HIV (O.R.=2.25 (95% C.L.=1.1, 4.6)).
Conclusions: Current education programs have been moderately effective in disseminating correct information about HIV. The respondents demonstrated a high degree of knowledge about HIV transmission and sexual practices, IV drug use and prevention by using condoms. However, the study also indicates that these respondents still possess varying levels of misinformation about HIV transmission and prevention. Educational efforts need to be redirected to address these areas more effectively.

S.C.691

CONDOM PROMOTION TO GAY MEN IN MEXICO: WHY FOCUSSING ON LIFESTYLE OF TARGET GROUP MAY NOT WORK

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**CONASIDA, Mexico City, Mexico

Objective: To determine if a market exists for an AIDS-specific condom targeting gay men and their lifestyle/behavior.

Method: Focus groups: 6 groups of 8-10 respondents each divided by socio-economic class and age, all men self-identified as gay. Areas of inquiry: attitudes, knowledge and practices about AIDS, condoms and existing educational/informational campaigns. Reactions to condom package prototypes explored, as well as, concepts for condom promotion.

Results: Use of condoms does not seem to correlate with level of knowledge or perceived vulnerability to infection per se. Interviews uncovered strong resistance to a condom "for gay men" or "for AIDS/HIV"--perceptions were that this would result in further stigmatization of already marginal population; a strong desire was expressed to be part of something everybody is doing. Further, indications are that a rational appeal (e.g. condoms prevent HIV transmission, therefore, use condoms) may be counterproductive. Groups formed the equation of gay=AIDS=condoms=death.

Conclusion: Targeting promotional efforts to gay men may have reverse of desired effect. Need exists to feel part of a larger context, to do something "everybody" is doing. Societal permission must be granted to all before individuals can make choice. Rational approaches have limited use--concept of lifestyle appeals like those used to promote commercial products such as soft drinks need to be explored.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.692 STUDY ON POSITIONING AND PACKAGING OF CONDOMS FOR PREVENTION OF AIDS IN HETEROSEXUAL MALES IN MEXICO CITY.

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OBJECTIVE: To determine the market for condoms for AIDS prevention and optimum packaging and positioning to encourage use by heterosexuals in Mexico City.
METHODS: In September 1989 focus groups of heterosexual men were selected, to cover the following points: health, familiy planning (FP), FP methods, sexual relations, sexual partners, positive and negative aspects of condoms, simulation of positioning of condoms, evaluation of brands of condoms, sexually transmitted diseases and AIDS. Selection of participants was by age, marital status and socio-economic level, Recruitment was in households, targetting areas of concentration of different socio-economic levels, and meeting places common to age and socio-economic groups such as schools, sports centers, work places, etc.
RESULTS: All groups had low levels of objective information on AIDS; the problem of AIDS is seen as distant and not a personal concern, prevention techniques are not well known with a correspondingly low use of ondoms which is linked more to family planning than to AIDS prevention. Ways in which AIDS information has been presented to the study groups have led to: A) Attitudes rejecting the risk of acquiring AIDS, B) A negative attitude towards condoms and their use. In heterosexual men AIDS is not yet linked to a physical image or death, but the following indirect associations were found: Dirty sex, promiscuity and perversion and guilty sex with AIDS prevention but not to be used by participants.
CONCLUSIONS: Currently a market among heterosexual men for condoms for AIDS prevention does not exist. The lack of perceived risk direct association between condoms and AIDS prevention. This population presents sexual behavior patterns which favour a rapid spread of AIDS. Therefore, the lack of perceived risk must be urgently managed through educative campaigns which promote the awareness of AIDS.

S.C.693 INTERVENTIONS FOR CONDOM USE SKILL DEVELOPMENT IN THE EASTERN CARIBBEAN

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Objective: To determine whether structured modeling of correct condom use is as effective in improving condom use skills as a descriptive brochure. To assess level of condom use skills and knowledge, attitudes, and practices related to AIDS prevention. To provide an innovative and interactive educational intervention.

Methods: The study used a cross-sectional design comparing differences in immediate skill development acquired through either of two interventions. Frequency and circumstances of condom use, and knowledge of correct use were measured during interviews. The intervention taught correct condom use employing either modeling or brochure. Subjects were male STD clinic patients; 153 received the modeling and 150 received the brochure intervention.

Results: The brochure is clearly a more efficient use of staff time and resources, yet it proved to be significantly less successful at teaching correct condom use skills. Also: less than half (42%) of subjects had used a condom in the last month and significant problems with condoms were reported including breakage (30%) and slippage (28%).

Conclusion: Both interventions significantly improved skills in correct condom use; those with the modeling intervention demonstrated significantly more improvement. When possible the modeling intervention should be included in interviews and treatment sessions. AIDSCOM has helped develop a curriculum for teaching clients to use condoms correctly.

S.C.694 IMPACT OF HIV TESTING ON CONDOM/SPERMICIDE USE AMONG HIV DISCORDANT COUPLES IN AFRICA.

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*UCSF Center for AIDS Prevention Studies (CAPS), San Francisco; **Projet San Francisco, Kigali, Rwanda; ***National AIDS Prevention Program, Kigali, Rwanda.

Objectives: To determine the effect of HIV testing and education on rates of condom/spermicide use among couples in which one partner is HIV+ and the other is HIV- (discordant).

Methods: A representative sample of 1469 child-bearing urban women 17 to 38 years old was recruited in 1988 for a prospective study of HIV infection in Kigali, Rwanda. Each woman received an HIV blood test, a risk-reducing intervention program and free condoms and spermicides. 46 couples discordant for HIV antibodies were enrolled from among 409 couples in which the male partner requested HIV testing and the educational intervention. The discordant couples were followed every three months with a questionnaire addressing sexual activity and a repeat HIV serology for the negative partner.

Results: The proportion of discordant couples who began using condoms and/or spermicides was much higher than that for the overall cohort at baseline (85% vs 36%; $p<0.001$). The two kinds of HIV discordant couples occurred with roughly equal frequency (21 man-/woman+ and 25 woman-/man+). After an average followup of 316 days, the mean proportion of unprotected sexual episodes was higher in couples with an HIV+ male (11/99 vs 4/93). During this period, 0/21 of the HIV- men and 3/25 of the HIV- women had seroconverted.

Conclusions: Serotesting with education led to a high rate of condom/spermicide use in discordant Rwandan couples; similar programs should be evaluated for use in other countries.

S.C.695 HIGH CONDOM UTILIZATION AND LOW SEROCONVERSION RATES SUCCESSFULLY SUSTAINED IN 175 MARRIED COUPLES IN ZAIRE WITH DISCORDANT HIV SEROLOGY; OBSERVATIONS AFTER 2 YEARS OF FOLLOW-UP.

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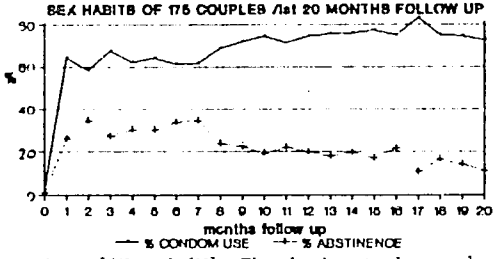
Objectives: To determine the sustainability of condom use in discordant couples (one spouse HIV(+), the other HIV(-)=DC) now followed for 21 months after serostatus notification.
Methods: Condom use, sex habits, clinical and marital status and HIV seroconversion rates have been monitored monthly since January, 1988 in 175 DC identified at 2 Kinshasa businesses.
Results: A total of 85F+M- and 90 M-F+ DC have now been followed for a total of 234 person-years observation. During this period 11 HIV+[5F+;6M+] persons have died. There have been 3 divorces [2F+, 1M+] and 10 seroconversions [4F and 6M]. The desire to have additional children despite intensive counselling has been the most important reason for recidivism in condom use. The figure demonstrates condom use and abstinence rates in DC.



Conclusion: Over 70% of DC couples continue to use condoms for all sexual acts. An increase in extramarital promiscuity has not been noted. The desire to have children is the most important reason for non-compliance.

S.C.696 SOCIAL MARKETING OF CONDOMS TO PERSONS PRACTICING HIGH-RISK BEHAVIOR IN ZAIRE

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Objective: To lower the incidence of AIDS, other sexually transmitted diseases, and unwanted pregnancies in persons practicing high-risk behaviors in two commercial centers in Zaire, Goma and Matadi.
Method: In April 1989, Population Services International and AIDSTECH initiated a 15-month project to distribute condoms and provide AIDS-prevention education to persons practicing high-risk behavior in the target areas. To reach these individuals, social marketing techniques focusing on key sale points (bars, hotels, and pharmacies) are applied. Promotional activities include display material at sale points, "rapping" by disc-jockeys and night-club singers, correct condom-use demonstrations, and consumer give-aways. Peer education of women with multiple sexual partners, through an indigenous association of these women, is ongoing. Program evaluation, involving detailed KAP studies and examination of change in STD prevalence among program participants, is also underway.
Results: After three months, more than 480,000 condoms were sold in over 70 pharmacies and 40 bar/hotels. Distribution provides coverage for an estimated 70% of the targeted high-risk groups. Several hotels now include condoms along with the usual amenities normally provided in the rooms. Sales projections indicate that 1,800,000 condoms will be sold by June 1990.
Conclusion: Bars, hotels, and pharmacies are effective outlets to promote condoms to persons practicing high-risk behavior in Goma and Matadi. Program expansion to other commercial centers in Zaire is in development.

S.C.697 SOCIAL MARKETING OF CONDOMS FOR AIDS PREVENTION IN DEVELOPING COUNTRIES: THE ZAIRE EXPERIENCE

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*Population Services International/Project de Marketing Social, Kinshasa, Zaire

Objective: To promote the use of condoms and make them widely available at subsidized prices to low income earners who comprise the majority of the population of Zaire in order to reduce the spread of AIDS.
Method: Population Services International (PSI) developed and is implementing a condom social marketing program in Zaire. Funded by USAID and FHI/AIDSTECH, this program applies the technologies of mass consumer marketing and utilizes the existing private sector marketing and distribution channels in Zaire, mainly pharmacies and wholesalers, as well as bars and hotels frequented by high-risk individuals. The condom brand name, "Prudence", its packaging design and pricing are all based on consumer research to ensure that the final product be culturally sensitive, attractive and affordable. Total sales of "Prudence" rose from 935,515 in 1988 to over 4,140,000 in 1989, an increase of 443%. The condom brand "Prudence", now marketed to all health zones in the capital city Kinshasa, and to several regions in the country's interior, has become a generic substitute for the word "condom".
Conclusion: The social marketing program has proven to be one of the most efficient means of distributing and promoting condom use, and effectively complements Zaire's national AIDS prevention program. In addition to plans for substantial geographic expansion, the Zaire Department of Public Health has asked that the program be expanded to include the social marketing of essential drugs.

S.C.698 USE AND MISUSE OF CONDOMS

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Objectives: To describe condom users, the mode of utilisation of condoms and difficulties.
Methods: A questionnaire was published in a French national newspaper (Libération) in November 1989 and was also distributed in pharmacies in Paris.
Results: The newspaper questionnaire was completed by 898 subjects. Questionnaires from 615 subjects who had used at least 1 condom in the past 3 months were analysed. 41.5% were heterosexual males (median age: 31 yr), 26.8% females (median age: 28 yr) and 31.2% homo/bisexual males (median age: 32 yr). People with more than 1 partner in 1989 represented 61.2% of heterosexuals (median 4 partners) and 87.5% of homo/bisexuals (median 15 partners). 55% of heterosexuals used condoms for contraception as well as for prevention against STD/AIDS with their occasional partners. These subjects found condoms easier to use (92%) and to propose to a partner (77%) than those having only preventive aims (respectively 80% and 57%). 87.4% of homo/bisexuals 76.3% of heterosexual males and 66.2% of females found condoms easy to propose to a partner. Extra lubrification was more usual among homo/bisexuals (76%) than among heterosexuals (12%). Extra lubricants used were: saliva only (23.6%); water-soluble lubricants (51.3%); oil-based lubricants (25.1%). For subjects who experienced breakages, the most frequent reported causes were: inadequate lubrification (38%); condoms too small (29%); rough handling (29%); lack of experience (18%). The analysis of the sample obtained in pharmacies is underway.
Conclusion: 1) It may be useful to encourage the contraceptive use of condoms among heterosexuals since this increases acceptability of use for preventive purposes. 2) Misuse was relatively common; a quarter of respondants using extra lubricants used oil-based lubricants, known to deteriorate latex.

Models for Behavior Change: Homosexual and Bisexual Men

S.C.699 **A FOUR SAMPLE COMPARISON OF SEXUAL AND RISK-REDUCTION BEHAVIORS OF GAY/BISEXUAL MEN**

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**Harbor UCLA Medical Center, Torrance, CA, USA

Objective. To assess the comparability of data regarding sexual and HIV risk-reduction behaviors of gay and bisexual men drawn from different samples.
Method. Information regarding sexual behavior and AIDS risk-reduction practices was collected from four independent samples of gay/bisexual men. The samples were: (1) new members of a cohort study of gay/bisexual males' AIDS risk (n=731), (2) gay bar patrons (n=152), (3) participants in a gay-oriented community recreation program (n=108), and (4) enrollees in an AIDS prevention/health enhancement program (n=68).
Results. Univariate and multivariate analyses of variance revealed significant differences among groups with regard to number of partners, reported and intended behavior change, and likelihood of engaging in high-risk vs. low-risk sexual practices. Overall, bar patrons were more likely to report current condom use, a decrease in number of sexual partners, and abstinence from high-risk sexual practices than were other men ($p < .001$). Members of the community recreation program, on the other hand, were more likely than other subjects to express intentions to engage in receptive anal intercourse without a condom, insertive anal intercourse without a condom, and receptive oral sex without a condom ($p<.001$).
Conclusion. Changes in sexual practices within the gay community may not be as pervasive as once thought. Both educators and researchers need to employ diverse access and recruitment strategies to reach subgroups of men who are differentially resistent to adopting safer sex practices.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.700 REINFORCING SAFER SEX AND PREVENTING RELAPSE TO HIGH-RISK BEHAVIORS AMONG GAY MEN

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Objective: Many health education efforts directed at safer sex promotion for gay men have failed to provide mechanisms for reinforcing safer sex practices and preventing relapse into high risk patterns of behavior. The program described in this study grew out of the need to develop both a model of relapse/reinforcement and a program to assist gay men to maintain low risk behaviors.
Method: A multiple-method approach was employed to begin to develop a reinforcement program and model. Qualitative data were gathered through 1) group exercises in on-going primary prevention workshops 2) self-report surveys 3) focus groups 4) individual interviews 5) piloting a curriculum. Three participant groups were used: men participating in GMHC programs through open-enrollment, men recruited for focus groups and interviews through advertisements, and health education professionals. These groups were selected in order to insure representation from those who create and conduct programs, those who choose to participate in programs, and those who experience problems maintaining safer sex practices.
Results: Convergent evidence indicated that the primary factors influencing relapse into unsafe sexual behavior were related to community esteem and attachment, low self-esteem, inability to formulate a positive gay identity, substance misuse, lack of clarity surrounding what constituted high-risk behaviors, misplaced trust of partners, and inadequate negotiation skills. Factors promoting safer sex included community support, ability to identify supportive peer networks, and self-confidence.
Conclusions: The findings indicate that reinforcement and relapse are separate constructs, and that a multiple-method, on-going approach to reinforcement and relapse prevention is required. The workshop that has emerged from these efforts must be viewed, therefore, as one part of an overall campaign to facilitate safer sex as a community norm, a campaign that includes on-going supportive contacts through support groups, and celebrations of safer sex as a positive feature of community life.

S.C.702 HOMOSEXUAL MEN (HOS) AND THE USE OF CONDOMS DURING ORAL AND ANAL INTERCOURSE

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Objective: To determine the effect of personal counselling on the use of condoms during oral/anal intercourses practised by HOS.
Methods: Serial interviews (1-6) of HOS, enrolled during 1983-1985 and followed up during 1983-1989 in Helsinki, Finland. At every visit, closely-argued practical advice was given to avoid mucosal contact during sex. The condom use was defined by the study participant as never (I), occasionally (II), always (III), or not needed (IV)= not practising such sex.
Results: The percentages of condom use either during oral or anal sex at subsequent visits (V) during 1983-1989 were the following:

V	N	% using condoms in oral sex				% using condoms in anal sex			
		I	II	III	IV	I	II	II	IV
1	248	97.2	0.8	0.0	2.0	78.0	6.9	4.9	10.2
2	231	83.5	1.7	0.4	14.3	51.1	7.8	10.8	30.3
3	209	79.4	1.4	1.0	18.2	40.7	9.6	14.4	35.4
4	175	74.3	2.3	0.0	23.4	27.4	12.6	20.0	40.0
5	143	70.6	2.1	0.7	26.6	18.2	16.1	29.4	36.4
6	115	66.1	3.5	0.9	29.6	7.8	23.5	30.4	38.3

Conclusion: Repeated, closely-argued personal counselling together with growing media coverage during 1983-1989 clearly increased the use of condoms during anal sex but not when oral sex was practised. To promote this should further reduce the risk of HIV transmission.

S.C.701 EVALUATION OF A "SAFE SEX" WORKSHOP IN A HOMOSEXUAL AND BISEXUAL POPULATION IN MEXICO CITY

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Objective: To evaluate the efficacy of a "safe sex" workshop on the modification of sexual practices, attitudes toward condom use and risk perception of HIV infection.
Methods: We used a before-after design to evaluate changes in knowledge, attitudes and practice among gay and bisexual men attending a monthly safe sex workshop. The workshop is a Mexican adaptation of a workshop developed by "Gay Men's Health Crisis Inc." It is offered monthly by a non-governmental organization (AVE de Mexico) and is based on a program presenting safer sex activity in a affirmative, erotically appealing manner in a small group setting.
Results: As of December, 1989 a total 106 men have attended five workshops.

Knowledge:	BEFORE (%)	AFTER(%)	p value
Over Q-3 (>75% correct answer)	20.7	82.2	<0.001
Positive Attitude toward:			
Condom use	7.2	31.0	<0.001
Risk perception:			
Condom use (safe)	23.0	96.0	<0.001
Receptive anal intercourse (unsafe)	92.0	95.0	0.41
Sex without intercourse (safe)	93.3	96.2	0.23

Conclusion: Although this population has a high level of HIV risk perception, the workshop favorably modifies knowledge of AIDS and develops positive attitudes towards condom use. Based on these findings we can affirm that this model is an effective, intensive face-to-face educational intervention.

S.C.703 CAUSAL ANALYSIS OF AIDS RELATED HEALTH BEHAVIOR: DIFFERENCES IN PROTECTION-MOTIVATION OF HOMOSEXUALS AND HETEROSEXUALS

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Objective: The purpose of this study was (a) to examine the effects of the cognitive mediators of protection-motivation theory (PMT) on intentions to adopt safe sex practices, (b) to examine the role of these mediators in relation to the coping modes of conflict theory and (c) to assess the relative predictive validity of these mediators compared to other variables that have been investigated in the context of health behavior. Methods: Subjects were 147 homosexual men and 84 heterosexual men and women with multiple sexual partners; recruited via informants, a municipal youth housing agency and a cohort-study among homosexual men in Amsterdam. LISREL's path-analysis techniques were used to evaluate the goodness-of-fit of the structural equation models. Results: Differences between heterosexual and homosexual subjects were found for almost all selected variables. PMT did fit the data, explaining more variance in intention for heterosexual than for homosexual subjects (39% versus 22%). Adding the coping modes showed different patterns among both groups, the explained variance rose to 46% versus 33%. When 4 other variables were added to PMT (e.g. previous behavior and social norms), the explained variance rose to 67% versus 44%. Conclusions: Although PMT was originally developed to deal with less severe threats and considering the type of behavioral changes being recommended the theory did fit the data fairly adequately. However, expanding PMT with other variables -especially those related to previous behavior- revealed the importance of other mechanisms that influence and form AIDS related health behavior.

Models for Behavior Change: Women 704–713

S.C.704

EFFECT OF COHERENCE, SELF ESTEEM AND SUPPORT-AVAILABLE AS RESOURCES AGAINST EMOTIONAL AND PHYSICAL DISTRESS AND HIGH RISK BEHAVIORS IN MINORITY WOMEN

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Objective: To explore the relationship of resources such as coherence, self esteem and support available with emotional and physical distress and high risk behaviors in minority women at risk for HIV infection.
Methods: A convenience sample of 327 women from drug recovery programs, and homeless shelters in Los Angeles were included in an AIDS education program and administered culturally and educationally revised and pilot tested instruments by ethnic nurses. Eligible women were Black or Hispanic drug users, sexual partners of drug users, women with a past history of sexually transmitted diseases, or homeless women. Descriptive analysis and multivariate analysis of variance were performed to examine relationships among the resources and outcome variables.
Results: Women who were high in any single resource reported less emotional and physical distress. High risk activities were reported less frequently by women who reported high self esteem or coherence. Women with all three resources had the lowest scores in emotional and physical distress and high risk activities. Stepwise regression revealed coherence was the most protective resource for women with emotional distress, while self esteem was most protective for women with physical distress.
Conclusions: As high self esteem and coherence have been associated with decreased high risk behavior, an intense focus on interventions that would empower women, making them less vulnerable to activities that would place them at risk for HIV infection, is most critical in this era of the AIDS epidemic.

S.C.705

ADDRESSING PSYCHOLOGICAL BARRIERS TO THE PREVENTION OF HIV INFECTION IN HIGH-RISK WOMEN

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Objective. To determine behavior change strategies which address the psychosocial factors identified as barriers to initiating and maintaining family planning care among women at high-risk for HIV infection and perinatal transmission.
Methods. We recruited 63 women of childbearing age and at risk for HIV infection (intravenous drug users; partners of bisexual, HIV+, or intravenous drug using men; women with a recent history of multiple STDs or of trading sex for drugs or money) into 6 focus groups. They were asked to respond to a pre-group questionnaire and a standard series of group interview questions.
Results. In addition to institutional and interpersonal barriers, the women's own feelings of inertia, isolation, and stigmatization were reported as barriers to initiating and maintaining reproductive health care. Their health beliefs and diminished sense of self-efficacy were found to impede proactive planning of pregnancies, HIV risk reduction, and the development of social networks which facilitate behavior change.
Conclusion. Our data suggest that a multi-level behavior change approach is required: 1) Service providers must be trained to interact with stigmatized women who are apt to feel powerless, distrustful, and alienated; 2) Family planning clinicians must be skilled in probing for indicators of substance abuse and HIV risk and subsequent development of appropriate treatment plans. In addition, they must be comfortable counseling high-risk women on social issues such as child custody concerns; 3) Community health outreach interventions and health education counseling should provide cognitive behavioral strategies which increase self-efficacy and teach ways of negotiating safe sex and decision making regarding health care issues; 4) To overcome isolation and inertia, the normative health beliefs of the general community and of high-risk women's social networks should be shaped to serve both as a catalyst and as support for initiating and maintaining individual behavior change efforts.

S.C.706

FACTORS INFLUENCING EXPERIENCED AND INEXPERIENCED COLLEGE WOMEN'S INTENTIONS TO TELL THEIR PARTNERS TO USE CONDOMS

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Objective: To identify the social psychological determinants of intention to "tell my partner to use a condom every I have sexual intercourse"
Methods: A sample of 101 female university students completed a questionnaire based on the Theory of Reasoned Action. In addition to demographic and sexual history data, the questionnaire assessed intention, attitude toward the behavior, subjective norm, behavioral beliefs, outcome evaluations, normative beliefs, and motivations to comply.
Results: Intention to tell one's partner to use a condom every time was accurately predicted from attitude and subjective norm ($R=.59$, $p<.001$); attitude was predicted from behavioral beliefs and outcome evaluations ($r=.50$, $p<.001$); and subjective norm was predicted from normative beliefs and motivations to comply ($r=.64$, $p<.001$). Further, while intention was predominantly under normative control among sexually experienced women (those who had had sex at least once), intention was primarily under attitudinal control among sexually inexperienced women. And the items in the cognitive structure underlying attitude and norm that differentiated intenders from nonintenders also differed between these two segments.
Conclusion: Since the determinants of intentions to tell their partners to use condoms differed when experienced women were compared with inexperienced women, different intervention strategies may be necessary to increase intentions in these two segments of the female college population.

S.C.707

AIDS EDUCATION FOR MINORITY, LOW-INCOME WOMEN: A PUBLIC HOSPITAL AND JAIL BASED PREVENTION PROGRAM IN CHICAGO.

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Objective: This paper presents the results of AIDS education targeted at low-income, minority women in Chicago, and HIV seroprevalence among a subgroup of these women. AIDS education and HIV testing are components of a comprehensive health care program for women and children with AIDS based at Cook County Hospital (CCH). Methods: A team of indigenous and professional women educators conducted 437 one-to-one and group sessions in various clinics and wards at CCH and Cook County Jail. Pre- and post-tests designed to assess attitudes and knowledge about AIDS were administered. Confidential HIV testing was offered following education and infected women were referred to CCH clinic.
Results: The pre/post tested group of women are 62% Black, 24% Hispanic, and 12% white,(mean age of 23), with a low level of eduational attainment. 83% of the test items demonstrated statistically significant improvement on the post test. Of 232 women who were tested for HIV, 23% were seropositive.
Conclusion: Culturally relevant AIDS education designed for these target populations can significantly modify attitudes and improve knowledge about AIDS/HIV. Providing AIDS education in the context of other health care services, especially to low-income, minority, inner-city post partum women and to women in jail is a highly effective way to reach women at-risk for HIV.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.708 REPRODUCTIVE CHOICES OF WOMEN AT RISK OF HIV INFECTION

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OBJECTIVE: To assess reproductive choices in a cohort of women at risk of HIV infection.
METHODS: Women attending the University of Maryland Hospital Obstetric Clinic between 10/85 and 3/88 were screened with a self administered risk assessment questionnaire at initial prenatal evaluation (IPE). Those providing informed consent were tested for HIV, and all received pre- and post-test counselling. Subjects were followed via record review.
RESULTS: 48 HIV+ and 98 HIV- women entered the study. 83% had IV drug abuse as a risk factor, with or without other factors; and these women were more likely to be HIV+ (Odds Ratio [OR] =4.6, p=.02). Among those 24 or less weeks gestation at IPE, HIV+ women were more likely to obtain a theraputic abortion (OR=6.4, p=.02). There was no significant difference in frequency of subsequent tubal ligation. The incidence density of subsequent pregnancy did not differ significantly between HIV+ (5.4[/1000 months at risk]) and HIV- (6.3).
CONCLUSIONS: Data suggest that knowledge of HIV status does not influence rates of subsequent pregnancy, but does influence decisions to terminate index pregnancy. Counselling of HIV + women needs to include information to help them understand and execute their reproductive choices.

S.C.709 "LOVE ME...LOVE ME NOT": DEVELOPMENT OF A NATIONAL PAMPHLET ON AIDS FOR WOMEN IN CANADA

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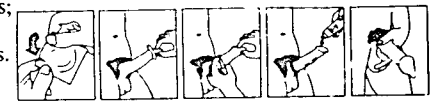
Objective: To develop a motivational bilingual pamphlet on AIDS directed at women.
Methods: Key informants (18) were interviewed regarding sexual and reproductive issues (instructions vs. advice vs. laying out the options). The pamphlet was focus group tested, revised,& pilotted in 6 provinces at 15 sites; family practices; STD, family planning and student health clinics; & community groups.



Results: Of 380 respondants, 55.8% are single, 72.4% are 15-34 years (median 25). 23.2% have not completed high school. 58.9% indicated they learned one or two things and 20.4% several new things from the pamphlet for a total of 79.3%. Reading the pamphlet left 69.5% feeling about the same, 14.4% more at risk and 15.8% less at risk regarding their personal risk of HIV infection. 28% indicated intention to change sexual behaviour with 14.3% undecided and 57.7% no intention to change. Older respondants felt less at risk and were more reluctant to consider a lifestyle change. Overall 94% would recommend the pamphlet to a friend, 84.4% would show it to a sexual partner.
Conclusion: A motivational English/French pamphlet "Love me... Love me not... Choices for Women in the Age of AIDS" which includes how-to illustrations was well received and will now be published for national distribution.

S.C.710 *CLINICAL AND IMMUNOLOGIC FEATURES IN HIV+ WOMEN FROM 3 DISTINCTIVE BEHAVIORAL RISK GROUPS: A PROSPECTIVE STUDY*

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Objective: To compare clinical and immunologic characteristics of HIV+ women from 3 behavioral risk categories (BRCs): heterosexual transmission (HT); intravenous drug use (IVDU); IVDU and prostitution (IVDU + P).
Methods: 58 HIV+ women were followed for 6 to 42 mos. (mean=18 mos.). All persons received appropriate antiviral therapy and treatment for opportunistic infections (OIs). Clinical, immunologic and socioeconomic comparisons were made between the 3 BRCs.
Results: Women in the 3 BRCs did not differ in age (mean=32 yrs.) or ethnic background (over 75% Caucasian). The HT group differed from both other groups in number of sexual partners in past decade (p<.0001), current stable heterosexual relationships (p<.0001), and health insurance status (p=.001). The 3 groups did not differ in clinical status or mean peripheral blood T4 lymphocyte count (PBT4) at time of diagnosis. Clinical courses have not differed between groups in frequency of OI's, or changes in Karnofsky scores.

Transmission	Partners since 1978	Stable Partners(%)	Prison Record(%)	Medicaid (%)	Initial PBT4, cl/ul (M±SD)
HT(n=11)	4 ± 3	91	0	9	560 ± 337
IVDU(n=21)	33 ± 44	19	19	67	471 ± 318
IVDU+P(n=26)	4711 ± 3053	23	92	69	585 ± 591

Conclusions: The HT group had fewer sexual partners and more stable and secure lifestyles than the other 2 BRCs. Presenting features and clinical courses did not, however, differ between women in the 3 BRCs.

S.C.711 COUNSELLING OF WOMEN WITH HIV INFECTION: EFFECT ON CONTRACEPTIVE PRACTICE AND PREGNANCY

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Objective: To determine whether informing HIV infected women about their seropositivity changes their attitude towards contraception and pregnancy after a single session of counseling.
Methods: As part of a research clinic looking at the effect of maternal HIV infection on pregnancy outcome at a large maternity hospital in Nairobi, Kenya, women were informed regarding their serostatus and counselled in a single session by trained nurses on contraception and procreation. 12 to 15 months later all HIV(+) mothers with a proper address were invited to our clinic, as well as the same number of HIV(-) women. Data collection included medical, sexual and obstetrical history and physical examination.
Results: 51 out of 91 (56 %) mostly asymptomatic HIV(+) mothers had a proper address, as compared to 57 out of 91 (62.6 %) randomly selected HIV(-) women. The follow-up rate in the group of HIV infected mothers was 47 % (24 out of 51) as compared to 56 % (33/57) in the HIV seronegative group (NS). All but one mother had remained asymptomatic. Condom use was reported by 8.3 % (2 out of 24) and 6.1 % (2 out of 33) of HIV(+) and HIV(-) mothers respectively (NS). Oral contraception was used by 6/24 (25 %) HIV(+) and 8/33 (24 %) HIV(-) women.
16.7 % (4/24) of the HIV(+) mothers had become pregnant as compared to 18.2 % (6/33) of the HIV(-) controls (NS).
Conclusion: Information regarding HIV status and a single session of counseling did not seem to influence the women's decision on contraception and pregnancy. More intensive counseling is needed, but may be difficult to implement in busy maternity and antenatal services in Africa.

S.C.712 **WOMEN-SPECIFIC AIDS-PREVENTION**
RECENT STUDIES IN THE FRG AND THEIR POLITICAL CONSEQUENSES

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Objetive: To discuss women-spezific measures of AIDS-prevention on base of two years of experience in the FRG
Methods: 1. Female drug using prostitutes and female consellors working in the field of AIDS and drug prevention have been inquired about attitudes, psychological, social and behavioural characteristics of the customers of drug using prostitutes.
2. A pilot-program "WOMEN and AIDS" has been established by the German Ministry of Youth, Family, Women and Health. The program tackles with the specific problems of HIV/AIDS exposed and infected women and is evaluated by the authors.
Results: Most of the customers of IVDU prostitutes are men, who visit them knowing of the drug habits. They seem to prefer the type of a girlish, unprofesional woman, the vision of a normal relationship. These imagination enables the repression of the own participation in the prostitution business as well as the possibility of HIV-infection.
Conclusion. The fact, that HIV is a sexual transmitted infection, creates also gender-specific reactions and problems. Among other things it has effects on the sexual behaviour, the financial and social position, the wish for children, pregnancy, familiy-, legal guardianship- and adoption planning. Theese facts need more women-specific activities in AIDS-prevention.

S.C.713 **ATTEMPTS TO OBTAIN SPERMATOZOA CONCENTRATES WITH LOW INFECTIVITY FROM EJACULATES OF HIV+ SUBJECTS**

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Objective: The increasing number of HIV seropositive males with seronegative partner requires methods to allow fertilization without the concomitant risk of infection. We have tried to remove immunocompetent cells from ejaculates of HIV+ males since no convincing evidence exists that spermatozoa themselves can transmit HIV infection.
Methods: Sperm of 13 HIV+ males have been spun against a gradient of a lymphocyte separating preparation. The pellet has been washed once and resuspended for a swim-up procedure. Cytospin slides of the mononuclear cell layer, the migrated sperm layer and the bottom of the tube have been tested with p17 and gp120/160 monoclonal antibodies by immunofluorescence (IF) technique. Results have been recorded semiquantitatively.
Results: Sperm tolerated well the spinning procedures. Results of IF tests are still incomplete since diffuse fluorescence background has often prevented to quantitate the reduction of infected cells in the migrated sperm layer. Modification of fixation technique and antibody coating are currently tested.
Conclusions: Separation of spermatozoa from infected seminal plasma is feasible but further and conclusive evidence of diminished infective risk must still be obtained.

Models for Behavior Change: Sex Industry Workers

S.C.714 **EFFECTS OF CONDOM-SKILLS TRAINING AND HIV-TESTING ON AIDS PREVENTION BEHAVIORS AMONG SEX WORKERS**

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Objective: To compare the effects of HIV testing and the rehearsal of correct usage of condoms on the proportion of time condoms were used in various sexual behaviors in a convenience sample of 64 female street sex workers.
Methods: Subjects each received a 45-minute structured interview focusing on demographic information and risk behaviors for the previous month; this interview was repeated one month following the intervention. Except to maintain ethnic balance across groups, subjects were randomly assigned to one of four study conditions: (1) HIV testing with counseling, (2) brief (15 minute) AIDS-prevention education with a rehearsal of correct condom use, (3) both HIV testing and the intervention, and (4) the structured interview alone (although AIDS information was provided to this group following the post-test interview).
Results: MANOVAs compared changes in reported condom use during various sexual activities at pre-and post-test across groups. Women who received both HIV testing and the intervention reported a significant increase in condom use during vaginal intercourse with customers ($p < .003$). Women who received HIV testing alone reported a significant *decrease* in the proportion of condom use during oral sex with customers ($p < .001$).
Conclusion: For sex workers, rehearsal of correct condom use combined with HIV testing may result in an increase in condom use during vaginal intercourse. Further investigation is needed to explain the decrease in condom use during oral sex following HIV testing alone.

S.C.715 THE NEVADA LEGAL BROTHEL SYSTEM AS A MODEL FOR AIDS PREVENTION AMONG FEMALE SEX INDUSTRY WORKERS

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The State of Nevada, USA, provides a legal system for the licensing of brothels in that state on a county by county basis. Combined efforts by local and state health departments with the cooperation of law enforcement officials ensure the health and safety of both brothel workers and their customers. Despite high sexual activity rates among 350 female sex workers affiliated with Nevada's brothels, there have been no HIV seroconversions among this group and the positive gonorrhea rate remains at approximately 1%. A combination of licensing requirements, mandatory condom use, on-site AIDS prevention education for workers and promotion of low risk non-penetrative sexual practices is proposed as critical to the AIDS prevention success of the Nevada brothel system. This presentation reviews the historical legal, medical, and practical development of this system as a model for effective AIDS prevention among female sex industry workers.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.716 PEGAÇÃO PROGRAMM: INFORMATION AND PREVENTION FOR MALE PROSTITUTES IN RIO DE JANEIRO, BRAZIL.

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Objectives:To develop and increase prevention strategies and information among streetworkers male prostitutes, using the facts of the reality of the group. In 1988 seroprevalence of HIV (HIV-1) was 43%, in 1989 it was 68.6%, showing the need of some specific prevention programms.
Methods:A team of 5 psychologists keeps, since July/1989, personnal and constant contacts with male prostitutes at the streets, aiming the integration of the group to show in and to develop prevention behaviour like condom use and safe sex, associated with correct information about AIDS/STD. Beyond this, the programm offers medical assistance for diagnosis and first aid according to the demands of the group.
Results:Before the start of the programm, just 15% of the boys (in a rate of 100, aged between 15 and 23) used condoms with the clients, increasing to 65% in 6 months.The search for periodic medical assistance did not exist, coming to 40% at the moment. Didactical material has been well accepted and the boys are now starting to produce their own material. In march (1990) will happen the first Meeting of Male Prostitutes, organized by them.
Conclusion:In spite of the problems of the night life in streets like violence, the personnal and constant contact seems to be a way to reach the group, in high risk and not reached before.

S.C.717 Implementation of an AIDS Intervention Program Among Women In Prostitution and their clients in the Cross River State of Nigeria.

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Objective:To develop and implement an AIDS intervention program for women in full-and part-time prostitution and their clients.
Methods:Intervention components comprise condom distribution, AIDS/STD education and counselling and early detection and treatment of STD. Female and male peer group educators,chairladies and hotel managers are used for condom distribution and the motivation of members of target group to use condoms.Educational activities and demonstration of condom use are carried out in individual hotels by project staff backed by peer group health educators.Chairladies,managers and a counsellor identify and encourage women and clients requiring STD Services to attend the project clinic.
Results:Data obtained from baseline KAP Survey on AIDS,STD and Condom as well as Lessons learned from program development and implementation and resultsof evaluation of condom use will be presented.
Conclusion:The importance of active involvement of members of the target group in program development and implementation for AIDS control is borne by this pilot project in Nigeria.The gratifying results so far obtained,attest to the relevance of a simultaneous initiation and implementation of AIDS control activities among female prostitutes and their clients.

Models for Behavior Change: Adolescents 719–727

S.C.718 ROLE PLAYS AS EDUCATION TECHNIQUE FOR PREVENTING AIDS: AN EXPERIENCE SHARED AMONG SOME PROSTITUTES OF KINSHASA LIVING IN A WELL KNOWN NEIGHBOURHOOD

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Objective : To evaluate role plays efficiency in the process of behavioural changes against. AIDS.
Method: Ethnic studies with interviews were carried out form 1987 to 1988 among 15 prostitutes with a law level of education. Role play technique was experienced during six months in order to assess role play technique impact in education of people.
Results : At the end of the survey, an improvment of knowlegde on AIDS was noticed. 14/15 (93.3 %) prostitutes was aware of AIDS problems and agreed to use condoms when having sexual relations with their partners. Most of them 10/15 (66.6 %) gave up prostitution and wanted to get a job that could help them solve their social and economic problems.
Conclusion : Role play contributes to the improvment of knowledge on AIDS and behavioural changes. The educator must be well prepared before leading such survey.

S.C.719 IMPACT OF A NATIONAL PROGRAM TO PREVENT HIV INFECTION AMONG YOUTH

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Objective: To describe the impact to date of a national program to help schools, and other agencies that serve youth, implement effective HIV education programs.
Methods: In 1986, CDC institutionalized six systems to prevent HIV infection among youth: 1) National Organization Programs; 2) State and local Education Agency Programs; 3) Materials Development and Dissemination; 4) Training and Demonstration Programs; 5) Surveillance Research; and 6) Evaluation Research.
Results: Among the 50 State education agencies: 41 established a state policy on HIV education in schools, 41 adopted a curriculum or guide for HIV education in schools, 35 carried out training programs for school personnel, and 33 assisted schools and other agencies to provide HIV education for out-of-school youth. About 80% of local school districts required HIV education for their students; with 37% of the districts implementing that requirement in the 1988-89 school year. In 1989, 34 State and 11 local agencies conducted surveys of HIV-related knowledge, beliefs, and/or behaviors among high school students. Among 9th-12th grade students in these States and cities, 1.3%-5.4% had injected drugs; 0.2%-2.8% had shared needles; 26.5%-80.3% had engaged in sexual intercourse; and 6.5%-40.0% had four or more sexual partners.
Conclusion: Many students in the U.S. engage in behaviors that transmit HIV. Schools rapidly have implemented HIV education to prevent these behaviors. Research is being conducted to determine the effectiveness of these programs.

S.C.720 A THEORY BASED EVALUATION OF AN AIDS PREVENTION PROGRAM

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Objective: The goal of this research was to evaluate the effectiveness of an intervention trial for sexually active college students aimed at increasing AIDS-related knowledge, and behaviors associated with AIDS risk reduction. Additionally, this program provided a model with which AIDS interventions can be designed and their impact assessed.
Method: The study design was a quasi-experimental trial, with two comparable groups. The intervention participants were 259 college students enrolled in a ten-week course that included information dissemination and small-group discussions about AIDS. Class topics ranged from the psychological to the biomedical to the legal aspects of AIDS. The control group was 300 students enrolled in a human sexuality class. Pre- and post-test measurements were taken on AIDS-related knowledge, attitudes, norms, and lifestyles.
Results: Compared with the control group, the intervention group showed a significant increase in AIDS-related knowledge (t=10.5, p<.05). Also, the intervention group showed a significant change in AIDS risk reduction behaviors, such as condom use (t=5.4, p<.05). Various subgroup analyses showed further intervention group change.
Conclusion: This study is important because young adults of college age are now considered a high risk group, and effective intervention programs are needed. This research is significant for its health promotion theory based evaluation approach, which would be valuable for a variety of AIDS prevention programs.

S.C.721 THE ROLE OF NEGOTIATION SKILLS IN SAFER SEX PRACTICE WHEN EDUCATING AT-RISK YOUTH

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Objective: This paper outlines a new approach in teen education, designed to improve participant knowledge of risk behaviors and develop effective negotiation skills that lead to the reduction of those behaviors.
Methods: "Speaking of Sex...:"(SOS) is a unique 2.5 hour workshop experience developed by AIDS Project Los Angeles (APLA) and designed to reduce the rates of HIV infection by teaching at-risk youth how to negotiate safer sex practices. Workshop participants learn the role that these skills play in translating their knowledge about HIV into behavioral change. Targeted youth participate in five phases of skill development: review and reinforcement of HIV transmission modes and behavioral risks; familiarization with the proper use of condoms and lubricants; identification of communication barriers and strategies for improvement; presentation of the "C.O.R.E." model of sexual negotiation developed by APLA for use in teaching behavioral skills; and participation in role-playing exercises.
Results: Through post-test and workshop evaluation tools participants expressed confidence that the skills learned in the workshop would influence their behavior during future social/sexual encounters. Rating the exercises on a 5 point scale, participants gave a mean rating of 4.2. On knowledge, participants score a mean of 93.1/100.
Conclusions: This approach to preventing the spread of HIV among target adolescent populations is effective in complementing an education campaign where basic HIV information has been delivered and the need for accompanying behavioral intervention techniques are called for.

S.C.722 "TRAINING TEACHERS TO MEET THE CHALLENGE--HIV PREVENTION EDUCATION FOR YOUTH."

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Objectives: The "Teaching AIDS Training Project" is in its 3rd year as a special CDC-funded national training program. Using an experiential, interactive approach, trainers model learning activities that cover (1) facts, (2) feelings, (3) perceived risk and (4) skills for teachers and students. By June 1990, the project will have conducted 7 HIV/AIDS prevention education teacher and 5 trainer trainings for almost 800 educators from the states of TX, WY, ID, MT, NJ, WV, MN, NM, and AL.
Methods: Questionnaires were administered to the training participants before the training, at the end of each day of the training, and 4 to 7 months after the training. Questionnaires were also administered to the students of these teachers before and after they received the HIV/AIDS unit.
Results: The data demonstrated that: (1) the participants rated the training very highly (overall mean = 4.8 on a 1-5 scale); (2) participants' knowledge about HIV/AIDS and how to teach a unit on HIV/AIDS significantly improved; (3) 45% of the teachers subsequently taught a unit on HIV/AIDS; (4) participants reached an estimated 33,000 students in grades 4-12 the first term and expect to reach 85,500 the second term; (5) more than 80% of the units were taught in health education classes; and (6) the units significantly improved the knowledge and attitudes of the students. Additional data will be presented.
Conclusion: The project had a major impact in nine states.

S.C.723 POSITIVE EFFECT OF GRAPHIC AIDS EDUCATION ON RURAL ADOLESCENTS

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Objective: Assess the effects of a clinically graphic AIDS education program on knowledge, attitudes, and behavior in a large sample of rural adolescents.
Methods: Two thousand students (age 12-19) were enrolled from middle and high schools throughout rural Georgia and South Carolina. Students completed a survey regarding their knowledge and attitudes concerning AIDS. This was followed by an hour presentation that included graphic clinical slides of patients with AIDS. Surveys performed immediately after the presentation, evaluated knowledge, and, 6 weeks later, evaluated knowledge, attitudes, and behavior changes.
Results: Preliminary results on the first 880 students surveyed have been analyzed. Selected responses are shown below.

	%correct responses		
	pre	post	6wk post
AIDS is not transmitted by casual contact	85%	97%	99%
Anal sex most dangerous type of sex for getting AIDS	45%	82%	87%
Condoms can fail in preventing transmission	68%	92%	98%
AIDS can be transmitted by infected asymptomatic persons	72%	85%	95%
Can't get AIDS from toilet seats, door knobs, etc.	76%	90%	96%

More students felt after the presentation that students with AIDS should be allowed to attend school, were less worried about catching AIDS and felt they needed to know more about AIDS. One negative response was greater fear. Behavioral responses are now being analyzed.
Conclusion: Clinically graphic AIDS education is effective in increasing knowledge and improving attitudes of rural adolescents.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.724 SURVEY OF KNOWLEDGE AND ATTITUDE CHANGE AMONG HIGH SCHOOL AGE ADOLESCENTS FOLLOWING AN EDUCATIONAL INTERVENTION THAT UTILIZES PERSONS WITH AIDS

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Objective: To evaluate an educational intervention utilizing Persons with AIDS in terms of its effect on the AIDS knowledge and attitudes of high school age adolescents.

Methods: Four hundred high school students attending health education classes at a selected Massachusetts high school were surveyed regarding their AIDS knowledge and attitudes. Classrooms were randomly assigned to one of three educational interventions: a) an AIDS information class followed by a skill-building session; b) the same two sessions followed by an interactive presentation by a Person with AIDS; c) the first two sessions followed by an AIDS video presentation with a teacher-led discussion. All three experimental groups were surveyed again following the interventions. Predictor variables examined were the number of sessions and the type of third session. Outcome variables measured were AIDS knowledge and attitude scores on a standard KAB instrument. Individual pre- and post-tests were matched and the mean change in scores for each of the three groups was determined. T-tests (difference between means) were applied to determine the statistical significance of the difference between the mean changes in knowledge and attitude scores among the three groups.

Results: The mean increase in attitude scores measured in the group who received the interactive Person with AIDS presentation was significantly greater than the mean increases both of the group who did not receive a third session and of the group who received the alternative third session (video and discussion).

Conclusions: Interventions which include interaction with a Person with AIDS have a greater effect on AIDS attitudes than knowledge- and skills-based interventions alone. The number of sessions appeared not to be the factor responsible for this effect.

S.C.725 AIDS RISK REDUCTION BEHAVIORS OF COLLEGE STUDENTS RELATED TO EDUCATIONAL INTERVENTIONS

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Objective: To identify educational interventions which modify existing risk behaviors (RBs) associated with the transmission of HIV among college students.
Methods: During 1988, a 69 item, self-administered questionnaire was completed by 3,463 undergraduate students of 11 different colleges in the Northeast to document the prevalence of baseline RBs. While limited information campaigns were implemented at all schools, a more intensive program, which included peer risk-reduction education, free condoms, and frequent multi-media reinforcement, was provided to an intervention group (INT) of 500 resident students. A follow-up survey in 1989 was completed by 591 students of 4 schools, including 13% of the INT.
Results: Baseline data were similar between schools, and RBs were prevalent. The use of needles to inject drugs ranged from 4% to 7% between schools and, among the 74% of students who reported sexual intercourse, 85% stated that they had not used a condom on at least one occasion. Data from the follow-up survey were used to compare reported RBs of INT with those of other students. Sexually active members of INT were up to 57% more likely to report reductions in RBs than other students. Sixty-three percent of INT reported a reduction in numbers of sexual partners. Students of INT were 60% more likely than students of other schools to have reported attending two or more AIDS educational programs on their campus.
Conclusion: This study suggests that information campaigns may be more effective in modifying existing RBs when combined with peer risk-reduction education and a social environment which encourages lower risk alternatives.

S.C.726 EDUCATIONAL NEEDS ON AIDS AND HUMAN SEXUALITY AMONG HIGH SCHOOL STUDENTS AND TEACHERS IN LIMA.

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Objective: To determine levels of knowledge and attitudes about human sexuality (HS), STDs and AIDS, and levels of sexual activity and substance abuse among high school adolescents in Lima, and among School Counselors and Sexual Educators in Lima.
Methods: Focus groups with adolescents were developed, exploring sexual socialization, attitudes and values towards HS, and in general regarding AIDS and drugs. Then, a pre-test of a descriptive/ analytic cross-sectional study was conducted, using KAP questionnaires especially developed for this purpose. Also, school counselors and sexual educators answer KA questionnaires on HS, AIDS and sexual education.
Results: 4 focus groups with 48 boys and girls 13-18 y.o. were carried out. Knowledge on HS is poor, but that on AIDS is good. They tend to report liberal attitudes, but suggest that they would bias data when reporting sensitive behavior. The pre-test on 120 adolescents shows mediocre levels of knowledge on HS (especially on STD and contraception), and variable knowledge on AIDS. Sexual permissiveness increases with age and is higher in those who have a job; attitudes towards contraception are positive; machismo is not related to sex; image of condoms is indifferent. 27% report sexual activity; 33% of these include homosexual experiences. None of them practices safe sex or contraception steadily. Most of them want more information on HS/AIDS. The pre-test with 15 teachers shows defficient levels of knowledge on HS and information on AIDS that is comparable to that of students. They tend to show low sexual permissiveness, but a good attitude toward contraception. They consider that there is currently no sexual education policy in the schools and want to be trained.
Conclusions: Insufficient levels of knowledge and the fact of high risk behaviors among many adolescents, as well as current defficiencies in teachers' abilities state the necessity of educational strategies on HS/AIDS for adolescents and training programs for their teachers in Peru.

S.C.727 KNOWLEDGE AND ATTITUDE OF ADOLESCENTS TOWARDS AIDS AND OTHER SEXUAL RELATED PROBLEMS

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Objective: To chart young people's sexual behavior seen in relation to spreading of HIV and venereal diseases for planning of further instructional strategy in Denmark.
Methods: A questionary examination of pupils between 14 and 20 years in part of Copenhagen (2307 questionnaires). The 164 questions comprise: age, education, social status, contents of sexual information in school and home, sexual start and behavior, and knowledge of sexual problems and HIV/AIDS.
Results: Sexuality: Age at first sexual intercourse: 15 years on an average. 39% did not use a condom at the first intercourse. 27% do not use any form of contraception. 27% are under the influence of some sort of intoxicants. 17% have only known their partner for one evening. Sex guidance: 20% do not receive any guidance at all at home. 49% do not talk about sexual problems, this is in particular the case when the parents belong to the upper class. Only 11% go to ther father regarding sexual questions. 12% feel that the sexual information received corresponds to their own experiences. Source of information: TV/radio and school are most important regarding information of HIV/AIDS.
Conclusion: The AIDS campaign has influenced the choice of contraceptives as regards 47,4%. In relation to the group starting without any form for contraception (27%), the increase of the number of abortus provocatus for the same age group, a non-provable decline of the number of chlamydia infections, and the risk of HIV spreading in heterosexual circles, it is concluded that a broader and more varying sexual information is urgent in Denmark, though all pupils receive compulsory sex instruction.

Models for Behavior Change: Drug Users 728–751

S.C.728 CRACK-RELATED BEHAVIORS UNDERMINING AIDS PREVENTION AMONG INTRAVENOUS DRUG USERS

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Objective. To investigate the impact of awareness of AIDS and drug use on the sexual behaviors of black, white and Latin intravenous drug users.
Methods. We conducted 6 focus groups (FGs) with 48 men and women IVDUs who were currently, or recently (≤ 3 mos.), enrolled in treatment progams. Groups were homogeneous with respect to race; two FGs of 8 per racial category. Participants resided in Bayview-Hunter's Point, a black ghetto in San Francisco. The FGs asked participants to discuss AIDS issues, sexual practices, drug-related behaviors and social networks. Ethnographic and content analysis of transcripts were performed.
Results. Drugs, specifically smokable cocaine (crack), have become the prominant currency used to buy sex. Black male IVDUs were more likely to use condoms when having intercourse with heroin users than with crack users because they believed heroin users to be at greater risk of carrying HIV. Data also suggest that IVDUs have modified their drug injecting practices. Fear of AIDS has lead to increased sterilizing of needle equipment, avoidance of needle sharing and consistent condom use for most sexual acts with the exception of oral sex. Sexual partners were more likely to double as drug-using partners among blacks and Latins than among whites, although in all racial groups, sexual partners used drugs.
Conclusion. While fear of AIDS seems to be reducing high risk behaviors among all racial groups, crack-related behaviors--particularly the development of the barter system--appears to be cancelling out the effects of AIDS prevention messages. The degree to which crack-related behaviors, and other non-injection drug use, affect AIDS prevention strategies for IVDUs deserve further study.

S.C.729 GRAFFITI MURALS REACH INTRAVENOUS DRUG USERS

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Objective: Take HIV risk reduction messages to inner city intravenous drug users at their place of exposure.
Methods: Focus groups were conducted with IVDU in detox centers and jails to learn ways to reach IVDU with HIV prevention messages. Members suggested graffiti as a medium. Community placed outreach workers identified sites where drugs were used or sold. Artists were hired to paint murals at these sites. Mural messages included; Don't Share, Use Bleach and the phone number of a computerized AIDS Information service and were up from August 6 to October 24, 1989. The cost was $1,200. To determine effectiveness calls to the system, numbers of IVDU accessing testing at publicly funded clinics were compared for the 11 week periods prior to, during and after.
Results: The number of phone calls to the system changed from 71 to 567 while the murals were in place and declined to 159 after removal. IVDU volunteering for testing increased from 488 to 657 while the murals were in place a 26% increase and declined to 527 after removal.
Conclusion: Well placed graffiti style educational murals are an effective and inexpensive method to access IVDU with HIV risk reduction messages and encourage testing.

S.C.730 INNOVATIVE AIDS PREVENTION STRATEGIES OF STREET IV DRUG USERS IN WORCESTER, MA

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Objective: To document emerging adaptive patterns in needle use and needle sharing among intravenous drug users (IVDUs).
Methods: Ethnographic street observation and inquiry of 45 active IV users and standardized taped interviews of 25 recently active IVDUs was conducted 8/89-11/89. IVDUs using consistently for the past 12+ months were interviewed in a treatment facility about AIDS knowledge, individual and observed behavior change.
Results: Data indicates that perceived social and economic advantages of needle sharing are persisting among IVDUs, while its "form" and "context"are being modified. A recent adaptation of conventional sharing practices includes a preference for two needles, one"personal"and one"lending"needle instead of bleach. Despite a 2-year bleach distribution campaign,50% of IVDUs taking precautions prefer this innovation to use of bleach. While this strategy shows a positive response to AIDS education, it protects only needle lenders. Borrowers remain at high risk. Social boundaries are also being reformed based on HIV+ &HIV-/untested groups
Conclusions: IVDUs are reducing AIDS transmission, yet these adaptations do not necessarily mirror "recommended changes"(don't share, use bleach), but are solutions generated from context-based rationals. These indicate that needle exchange may be a more immediately effective means of AIDS prevention than bleach. Research on indigenous AIDS prevention strategies has the potential to impact health education models and U.S. health policies.

S.C.731 PERSISTENCE OF INJECTION IN STREET-RECRUITED IVDU'S

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Objective: Prior to AIDS, IVDU's were known to alternate between periods of intensive, intermediate and no drug injection. This study assesses the frequency and determinants of persistent injection in a street sample of IVDU's, who had injected within the past year, on the Lower East Side of Manhattan, a high incidence AIDS area.
Methods: 355 IVDU's were interviewed at baseline (T1) and 4-month follow-up (T2) about drug injection behavior by ex-IVDU outreach workers. Multiple (logistic or linear) regression was used to identify determinants of injecting versus not and of T2 frequency of injection (among injectors at T1 and T2 only).
Results: The majority of the sample (53%) were injecting at both times; only 19% were not injecting at both times. 25% were not injecting at T2 only, and 2% were injecting at T2 only. Among T1 and T2 injectors, frequencies of injection of any drug ($p<.0001$), heroin ($p<.0001$), cocaine ($p<.005$) and speedball ($p<.0005$) decreased over time. Frequencies of shooting gallery use ($p<.003$), renting ($p<.001$), borrowing ($p<.0002$) and lending ($p<.0001$) works also decreased. Women were more likely to be non-injectors at T1 and T2 than men. Years of injection, treatment, age, ethnicity and self-efficacy about HIV risk reduction were not associated with being a persistent non-injector versus injector. After controlling for the effect of T1 frequency of injection ($p<.0001$), no other T1 variable was associated with T2 frequency of injection. Only T2 self-efficacy ($p<.005$) was negatively associated with T2 frequency of injection.
Conclusion:Despite their widely understood risk of HIV infection, persistent injection over a 4-month period was still common among a sample of street-recruited NYC IVDU's. Among persistent injectors, frequencies of injection, gallery use, and various sharing behaviors decreased over time. Thus, elimination of injection would not seem to be a realistic goal for HIV prevention initiatives -- whereas movement toward safer and reduced injection would.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.732 AIDS RISK REDUCTION IN HARLEM, NYC: GROUP PROCESS EFFECTS

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Objective: To: 1.present initial reactions to AIDS risk reduction groups conducted in an ongoing research project in Harlem, NYC; 2. list factors affecting risk reduction in a community suffering from numerous health and social problems.
Methods: Over 900 IVDUs or sex partners of IVDUs, recruited by street outreach or at outpatient OB-GYN clinics, were randomly assigned to one of two risk reduction strategies: a one-session "information only" group (standard), or a three-session "information + skills training" group (enhanced). Skills taught were: needle cleaning, condom use, and negotiation techniques. After groups, subjects completed a questionnaire measuring: 1.AIDS knowledge; 2.intention to practice risk reduction; 3. self-efficacy regarding risk reduction. Two group leaders completed process notes after each session to record significant issues raised by group members regarding risk reduction.
Results: There were no significant differences in knowledge, intention, or self-efficacy between strategies; scores for intention and confidence were high (means> 4 on a 1-5 scale). Women scored higher than men on knowledge and intention ($p < .01$). Process notes indicate barriers to risk reduction included: 1. life circumstances of high risk individuals living in poverty ; 2. little community support for risk reduction; 3. both sexes' resistance to condoms. Women participated more actively in women-only groups than in mixed sex groups.
Conclusion: Initial positive reaction to the intervention may be defeated by lack of community support for risk reduction; AIDS education efforts should consider effects of poverty and addiction on the ability of high risk individuals to practice risk reduction. Further research should explore condom resistance and gender differences in group participation, knowledge, and intention.

S.C.733 ORGANIZING IV DRUG USERS AGAINST AIDS: A COMPARISON WITH OUTREACH FOR PRODUCING RISK REDUCTION

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Objectives: Gay organizations have changed subcultural norms to reduce HIV risk behaviors. We established a program to organize IV drug users (IVDUs) against AIDS, and here evaluate its impact.
Methods. Organizing project: Ex-addict organizers held weekly meetings with IVDUs to set up organizations to encourage risk reduction, mutual education, and individual counseling. Outreach project: Ex-addict outreach workers provided IVDUs with AIDS education; HIV antibody testing and counseling were also offered. Data: 529 organizing and 446 outreach subjects received initial interviews. 259 (49%) organizing and 223 (50%) outreach subjects were re-interviewed a median of 196 days later. Subjects who were and were not followed up were similar in gender and in the intake values of dependent variables. Subjects were significantly more likely to be reinterviewed if they were older, black, had homes, or used shooting galleries less, but these differences were not large. Significance ($p<.05$) is assessed by repeated measures analysis of variance (with interaction between project and time), repeated measures t-test, Pearson's chi-square, and McNemar's chi-square.
Results: Significant decreases occurred in each project in total, cocaine, heroin, and speedball injection frequencies. Frequency of unprotected anal or vaginal sex did not decline significantly. Significant increases in the number of subjects always using condoms and new needles were found in each project; always using bleach increased only among organizing subjects.
Comparing the magnitudes of changes between the projects, outreach subjects decreased heroin injection frequency more than did organizing subjects, and organizing subjects were more likely to begin always using condoms and bleach. Differences in behavior changes between outreach and organizing subjects did not vary with gender or race/ethnicity.
Conclusions. AIDS risk behaviors declined in both projects. "Safer" sex and "safer" injection techniques particularly increased in the organizing project. The encouraging results of this first outside attempt to organize IVDUs against AIDS suggest that further research should be conducted to develop more effective ways to organize IVDUs.

S.C.734 PHARMACISTS AND IVDU: POSSIBILITIES FOR PREVENTION

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Objective: To assess the frequency of contacts of pharmacists with IVDU, and to evaluate their willingness to participate in prevention efforts.
Method: Questionnaires were mailed to 280 Antwerp pharmacists, and collected at the pharmacies four weeks after mailing.
Results: The overall response rate of 42,5 % (n=119). A marked difference in contact frequency with IVDUs was found between pharmacies located in the town centre (n=50) and in the suburb (n=69) ($p > .001$). In the town centre 22% had 0 - 1 contacts/wk, 30 % had 1 - 5 contacts/wk and 48 % more than 5 contacts/wk during regular opening hours (roh). (Figures for WE and night hours were similar). Refusals to sell injecting equipment are scarce (> 12 %). A large majority of pharmacists reported nuisance, first reasons being fear for aggression and theft. In town centre, these fears were not associated to contact frequency. Despite this nuisance, pharmacists (centre) are willing to distribute leaflets (81 %), learn counseling techniques (34 %) and exchange syringes (64 %) in roh. In the suburbs, only a minority of pharmacists had regular contacts with IVDU, but those who did are more willing to participate in exchange schemes than their colleagues ($p = .002$ Yates) This willingness drops dramatically for night hours in both samples (14 %, 20 % resp.).
Conclusion: Antwerp pharmacists are ready and willing to participate in HIV prevention towards IVDU. Efforts should be targeted towards all pharmacists in the town centre, and selected ones in the suburbs. However, it is unrealistic to leave the distribution of injecting material during night hours to pharmacists alone. Alternative distribution should be considered in this period.

S.C.735 STRATEGIES OF HEALTH PROMOTION FOR IVDUs IN THE FRG: Implications of a differential epidemiological Study for Drug and AIDS policies.

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Objectives: Final results of the largest german epidemiological study in i.v. drug users will be reported. Main goals: 1: Estimation of the (true) HIV-prevalence rates. 2. Information about differential risks of HIV infection (including social and life-style factors). 3. Determinants and the extent to which subpopulations of addicts have changed their behavior will be reported as well as their use and experience with different institutions and drug specialists.
Methods: Multicenter design; 1 to 2 hour structured interviews and HIV-antibody testing of 1267 i.v. drug addicts of all spheres they frequent to get a sample as representative as possible. More than 300 informations of the subjects addictive and sexual histories, life situations, socialization, changes in behavior as a reaction to AIDS, social support and daily hassles were collected.
Results: In the total sample we found a HIV-prevalence rate of 19.9% but no significant difference between men and women. Highly significant differences between the prevalence rates were found in different areas, drug scenes and subpopulations with different sociological background and history. The risk of HIV-infection is distributed unequally among different social spheres. Nearly 60% of the drug addicts have already changed the needle-sharing-habits, but only 48% have modified their sexual behavior.
Conclusion: The results show the importance of social determinants, social support and the degree of social reintegration for the risk of HIV-infection and the chance for behavior modification. Adequate strategies for health promotion of a drug/AIDS-policy seem to be: extension of a differentiated drug-help-system, e.g. low threshold programs, streetwork, free selling of needles and syringes, decriminalization, integration of addicts, promotion of self-help and social support of addict.

S.C.736

AN AUDIOVISUAL PRESENTATION FOR AIDS RISK REDUCTION IN IV DRUG USERS

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Objective: to increase informational levels about AIDS and to modify attitudes and at-risk behaviors by means of health education intervention.
Method: We coupled intensive outreach work with IV drug users with the screening and subsequent educational intervention. The educational program consisted of an audio-visual presentation, pre-post testing and individual counseling.
Results: 189 IV drug users in methadone maintenance therapy participated in this educational program. Syringe sharing among this group decreased from 34.7% at initial contact to 18.5% after three months, to 12.3% after 6 months. The percentage of the population engaged in at-risk sexual activity decreased much less dramatically, from 38.6% at initial contact to 34.6% after three months and 32.9% after six months. However, use of the condom in at-risk situations increased from 48.7% to 54.6% to 70.2%.
Conclusions: results indicate that at-risk behavior is linked more closely to underlying attitudes than to informational level. Sexual behavior proved more resistant to change than drug-using habits. Analysis of drop-out reveals that at-risk behaviors persist at usual levels among those who lose contact with treatment centers.

S.C.737

BEYOND NEEDLE SHARING: THE SHARING OF DRUGS BY FRONTLOADING

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Objective: A deeper look, beyond needle sharing, into drug use contexts reveals other forms of sharing behaviour important in the transmission of HIV.
Methods: Intense and unobtrusive participant observation was undertaken in places where heroin addicts meet, use and buy drugs. Detailed fieldnotes were recorded and computer assisted analysis included both qualitative and quantitative methods.
Results: The study confirms the trend seen in other Dutch studies; needle sharing seems to be decreasing. The needle sharing that was observed seemed to be situationally and circumstancially determined. However, drugs are shared in 49.5% of the observed drug taking events (N=93 Smokers + IVDUs). IVDUs share drugs in 54.2% (N=48) of observed events and in 80.8% (N=26) they do this by "frontloading", a special technique using two syringes. This technique with risks for HIV contamination will be explained.
Conclusion: The results suggest that needle sharing is an incomplete notion. The term is a rough simplification of a very complex reality. The actual sharing of needles is only one of the dangers of infection with HIV in the daily injecting routine. Other possible riskful injecting behaviors, like e.g. frontloading, have to be researched and well defined.

S.C.738

A NEW AIDS PROGRAMME FOR HEROIN ADDICTS BASED ON THE COOPERATION OF CHEMISTS SHOPS (THE ANTI-AIDS KIT)

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OBJETIVE: To set up an Aids Programme of education and information aimed at intravenous drug users, (82% of the Aids patients in the Basque Country in Spain), based on the creation of an Anti-Aids Kit, and the cooperation of the pharmacist as a health care agent.

METHODS: The programme consists of five phases: 1) An initial evaluation of the attitudes of drug addicts and pharmacists towards Aids. 2) The setting up of an educational process involving 1,000 pharmacists in the Basque Country. 3) The commercial distribution in chemists' shops of the Anti-Aids Kit, (syringe, condom, a plastic container for the used syringe, and information on preventive measures). 4) The setting up of a pilot scheme of exchange of syringes in 50 chemists' shop. 5) An ongoing evaluation of the programme.

RESULTS: We evaluated the first phases of the programme: 1) There has been a high degree of acceptance of the Anti-Aids Kit on the part of the pharmacists. However, it is too early to asses the response of the drug addicts. 2) The educational process involving the pharmacists has been very well accepted on the whole, however, there has been some resistance to the idea of the free exchange of syringes in chemists's shops.

CONCLUSIONS: Following a programme of information and awareness-raising aimed at pharmacists, this group of professionals are able to cooperate effectively in the educational activities aimed at intravenous drug addicts.

S.C.739

A Comprehensive Training Program for U.S. Substance Abuse Treatment Workers

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Objective: To prepare substance abuse treatment workers to meet the HIV-related needs of chemically-dependent clients through training.
Methods: Since 1986, the National Institute on Drug Abuse (NIDA) has been responsible for the on-going development of a comprehensive curriculum-based training program for substance abuse workers. Curriculum development uses a 6-step process: (1) identify common needs ammenable to training interventions; (2) select key topic areas and collect relevant research data; (3) transfer information into training curriculum format; (4) pilot test course twice with sample target audience; (5) incorporate feedback into final version of curriculum in preparation for national distribution; and (6) revise annually.
Results: As of January, 1990, 12 courses have been developed by NIDA to address the identified HIV-related training needs of substance abuse workers. Two cornerstone courses targetting substance abuse agency administrators and counselors respectively, provide a foundational setting followed by a menu of sequentially-arranged training modules that focus on human sexuality, gay/lesbian/bisexual client issues, risk-reduction counseling, women, antibody-test counseling, treatment planning, support groups and buddy programs, and death and dying issues. Self-reported course evaluations indicate increased knowledge, confidence and sills in responding to client needs.
Conclusion: Training of substance abuse treatment workers requires a comprehensive program. Ofen, training is limited to informational presentations. Emphasis must be placed on attitudes and skills to maximize learning.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

S.C.740 OCCUPATIONAL RISKS OF CONDUCTING OUTREACH

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Objectives: An analysis is offered of the occupational risks that outreach workers face in working with drug addicts, prostitutes and other populations on their own terms and turf.
Methods: The authors have been interviewing outreach workers and conducting participant observations of a large outreach project on the west coast of the U.S for over two years, funded by a three year grant from the National Institute on Drug Abuse.
Results/Conclusions: Three risk categories are analyzed:
1. Drug use and addiction relapse: Recovering addicts who are hired as outreach workers would seem to be at great risk of relapsing in reentering drug scenes. Research indicates that outreach workers who use drugs and do not define themselves as "having a problem" are much more vulnerable to drug abuse.
2. Burnout and staff turnover: Workers complain frequently of burnout and staff turnover rates are high. Burnout appears to be a problem for highly committed outreach workers, but it is almost never a factor that leads employees to quit.
3. Physical and Psychological Assault: Because outreach workers strive to assure clients of confidentiality, and dissociate themselves from the police, physical danger from clients has been extremely rare since the project began in 1986. However, the psychological/emotional assault of witnessing client suffering is high, and it is aggravated when workers feel that they are denied available resources to help clients by other professionals and agencies.

S.C.741 USING FORENSIC TECHNIQUES TO CORROBORATE IV DRUG USERS' SELF-REPORTS OF NEEDLE SHARING

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Objective: Self-reports are a staple of research on transmission of HIV, but for the most part of unknown validity. We assessed IV drug users' self-reports of needle sharing by correlating them with the results of forensic tests designed to detect multiple users of the syringes.
Methods: 59 "street users" of heroin were asked to donate 2-3 used syringes to the study. 31 furnished one syringe that appeared to contain analyzable amounts of blood. The 31 also supplied a reference fingerstick blood specimen and answered questions about their use of the syringes. The syringes and reference specimens were analyzed for discrete biochemical traits using tests for the isoenzyme phosphoglucamatase, gamma marker and kappa marker immunoglobulins, and DQ alpha type using polymerase chain reaction.
Results: 26 of the syringes had sufficient blood to conduct one or more of the tests described. 2 syringes had evidence of a mixture of biochemical traits, and 10 had characteristics other than those of donors of the syringes. The results were remarkably consistent with 1) self-reports of use by drug users other than the donor: chi-square=7.53, p=.01, phi=.54; and 2) self-reports of sharing of unbleached syringes: chi-sq.=8.99, p=.005, phi=.59
Conclusions: 1) Forensic tests may be effective in identifying multiple users of syringes; and 2) IV drug users' self-reports of needle sharing appear to be surprisingly valid.

S.C.742 ADOPTION OF BLEACH USE IN A COHORT OF STREET INTRAVENOUS DRUG USERS IN CHICAGO

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Objective: To assess adoption of bleach use to reduce risk of HIV infection by a cohort of active intravenous drug users (IVDUs) not in drug treatment.
Methods: Indigenous field workers in 3 Chicago communities encourage IVDUs to modify HIV risk behaviors. Targeted social networks of IVDUs are being studied using quantitative and qualitative research methods. A prospective cohort of some network members is being followed with structured interviews and serologic tests at 6-month intervals. Ethnographic study of the social networks, including members not in the cohort study, also provides grounded interpretation of quantitative results.
Results: Survey data were analyzed for 209 IVDUs who continued to inject from baseline to first followup. Of 174 subjects using bleach less than always at baseline, two-thirds (68.4%) increased their use of bleach. Further, a third (32.2%) of these 174 reported always using bleach at followup.

Bleach Use	Baseline	First Followup
Never	40 (19.1%)	21 (10.0%)
Under half of time	71 (34.0%)	40 (19.1%)
About half of time	24 (11.5%)	23 (11.0%)
Over half of time	39 (18.7%)	51 (24.4%)
Always	35 (16.7%)	74 (35.4%)

Ethnographic findings indicate the adoption of bleach as a needle disinfectant is increasingly accepted in the social networks. Analysis of second followup interview data continues.
Conclusion: IVDUs accessed in community outreach are receptive to use of bleach to reduce their risk of HIV infection.

S.C.743 NEEDLE CLEANING METHODS REPORTED BY INTRAVENOUS DRUG USERS WHO ARE NOT IN DRUG TREATMENT

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Objective: To illustrate the need for intervention to affect needle cleaning practices to reduce the risk of becoming infected by Human Immunodeficiency Virus.
Methods: This report reflects responses to 15,000+ interviews with intravenous drug users (IVDUs) who are not in a drug treatment program. The data were obtained from an interviewer-administered questionnaire developed by participants in the National AIDS Demonstration Research Project sponsored by the U.S. National Institute on Drug Abuse.
Results: Eighty-five percent of IVDUs indicated they know that cleaning needles with bleach is an effective way of killing the AIDS virus. Despite this knowledge, only 11% reported always cleaning their needles with bleach before injecting drugs. An additional 6% reported always cleaning with alcohol and 1% indicated cleaning with boiling water. These taken collectively (17%), plus those who always inject with new needles (20%), imply that 63% of IVDUs are involved in drug injecting practices that put them at high risk for HIV infection. This report explores variation in safe needle practice with respect to gender, race/ethnicity, and region taking into account other factors such as frequency of injection and place of injection which are potential determinants.
Conclusions: Other researchers have reported that methods beyond educational approaches must be sought to bring about changes in risk-taking behavior, especially in the illicit drug injecting setting. Safe injecting practices are currently used by a minority of IVDUs.

S.C.744 FEASIBILITY OF NEEDLE EXCHANGE PROGRAM IN SAN FRANCISCO: A SURVEY OF STREET-BASED ADDICTS

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Objective: To determine the feasibility of a needle exchange program, the prevalence of needle sharing among street-based addicts, and the types of drugs used.
Methods: Information was collected from a total of 833 street-based addicts on the streets of San Francisco in 1989. Outreach workers administered a survey questionnaire to individuals in areas known as "hang outs" for addicts. The primary areas included the Western Addition, Tenderloin, and Bayview-Hunter's Point districts of the city.
Results: Of the 833 users interviewed, 23% reported that they shared needles with others; no significant differences in sharing patterns were observed between men and women. Respondents reported using a variety of drugs including: heroin (91%), cocaine (57%), crack (22%), alcohol (31%), marijuana, (12%) and speed (6%). Eighty percent reported cleaning needles with bleach. Fifty 90% indicated that they were willing to obtain clean needles from an outreach worker and 86% indicated a willingness to obtain clean needles from a clinic. Finally, 80% indicated both an interest in treatment for their addiction and a willingness to show needle marks in order to obtain clean needles.
Conclusions: Results suggest that street-based addicts in San Francisco are both interested and willing to become involved in a needle exchange program. The relatively low rate of needle sharing (23%) and the high rate of bleach use (80%) also suggests that many addicts are aware of their HIV-related risk behaviors and are taking steps to reduce their level of risk.

S.C.745 RISK BEHAVIOUR AND HIV INFECTION IN CLIENTS OF NEEDLE-EXCHANGE IN CENTRAL LONDON

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Objective: To determine the prevalence of risk behaviours for, and antibodies to, HIV in all attenders at the busiest needle-exchange in the UK during January 1990.
Methods: Each client was asked to complete a questionnaire on recent drug and sexual behaviour risks for HIV infection; saliva samples were requested, and anonymously tested for anti-HIV.
Results: In week one of January 1990, 109/115 (95%) clients agreed to participate in the study. Clients are typically older (median age 31), male (88%), began injecting early (median age 17) and are frequent injectors (median 28 of last 28 days). Of those who had ever lent (60/109) or borrowed (59/109) used injecting equipment, 16/60 (27%) had lent and 11/59 (19%) borrowed such equipment in 1989/90. Males reported a mean of 2 sexual partners (range 0-30) and females a mean of 1 partner (range 0-4) in the last 3 months. Testable samples of saliva were provided by 103 clients; 5 (5%) were anti-HIV positive.
Conclusion: Needle-exchange clients were willing to participate in an anonymous study of risk behaviour and anti-HIV status. Encouragingly, prevalence of anti-HIV has remained stable since 1988 in this population. However, the recent risk behaviour of a minority suggests that additional interventions - such as provision of bleach - may be necessary to prevent further infections.

S.C.746 MAXIMISING RETURN RATES & SAFE DISPOSAL OF INJECTION EQUIPMENT IN AUSTRALIAN NEEDLE & SYRINGE EXCHANGE PROGRAMS.

Lowe, David*; Milechman, B*; Cotton, R*; Vumbaca, G*; McDermott, R**; Ward, S**. *AIDS Bureau, NSW Department of Health, Sydney, Australia. **McDermott Ward Product Design, Sydney, Australia.

Objective: To maximise the return and safe disposal of used injection equipment. **Methods:** The large number of needles and syringes distributed (2 million in 1989) has resulted in the improper disposal of used injection equipment in public places. The following initiatives have been developed: (a) Design of innovative, compact and portable plastic containers to store sterile and used needles and to enable return and safe disposal. (Four sizes: 2, 3, 5, and 10 packs). (b) Design of needle disposal bins (steel) located in public places to allow for return and safe disposal 24 hours a day. (c) Development of a training package for municipal cleaning staff on risk of needle stick injury, preventive measures and safe disposal methods. (d) Development of education/media campaigns targeted at IVDU, municipal workers and the general public to publicise initiatives, provide information on safe disposal and the rationale for needle exchange.
Results: An increase in the return rate of used needles from 25% to 64% over 14 months to Dec, 1989. A reduction in the number of needles discarded in public places. The installation of 35 disposal bins in public places. Plastic disposal packs are distributed with all needles. **Conclusion:** The success of these initiatives has led to greater public and political acceptance of this innovative program and has minimised the public health risks posed by discarded injection equipment.

S.C.747 A PILOT PROGRAM TO PROVIDE COMMUNICABLE DISEASE SCREENING SERVICES IN DRUG TREATMENT PROGRAM SETTINGS

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OBJECTIVES: 1) evaluate the feasibility of providing communicable disease screening and referral services in methadone maintenance (MMT), detoxification (DTX) and drug free (DF) treatment programs; 2) determine the combined prevalence of HIV-1, sexually transmitted diseases (STDs), hepatitis B, HTLV-1 and TB among the in-treatment drug using population.
METHODS: All clients entering two Sacramento drug treatment programs (one MMT/DTX and one DTX/DF) from mid-October through December 31, 1989 were offered free, confidential, communicable disease screening and treatment referral services.
RESULTS: A total of 197 participants were enrolled during the first 2 1/2 months of this study. Participation rates varied by program site and treatment modality, with an approximate 25% rate at the MMT/DTX site and a 46% rate at the DTX/DF clinic. Overall HIV-1 prevalence was 2.0% (4/197). Nine of 168 (5.3%) clients were positive on RPR screen for syphilis, with only one person positive (0.6%) by confirmatory testing. Ten of 174 (5.7%) clients were PPD positive for TB. None of 157 persons screened positive for hepatitis B surface antigen.
CONCLUSION: Communicable disease screening and referral services can be successfully implemented in different drug treatment setting. These programs provide a unique opportunity for risk reduction counseling in a multiple-risk population. The overall prevalence of HIV-1, STDs, hepatitis B, and TB appear to be low among the drug using population in this geographic area.

S.C.748 METHADONE MAINTENANCE, HIV SEROSTATUS AND RACE IN INJECTION DRUG USERS (IDU) IN SAN FRANCISCO, CA.

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Objective: To examine the relationship between methadone maintenance treatment (MMTX) and HIV status in IDU in San Francisco.
Methods: After informed consent, from 7/1/85-12/1/89, 2112 heterosexual IDUS were screened for HIV ab and a history of MMTX obtained.
Results: The sample was 59% male, 41% female, 51% white; 27% black; 14% Hispanic; 8% other. Median age: 36 yr. (Range 19-75). Median duration IDU: 16 years. (Range < 1 yr.-54 yr.) Median months MMTX: 18 (Range 0-300). Thirty percent had had no MMTX, and 30% had more than 60 months MMTX. Twelve percent (248) were HIV+.

	<60 mos.MMTX HIV+/N(%)	>60 mos.MMTX HIV+/N(%)	Odds Ratio	95% C.I.	p
Total	203/1434(14)	45/593 (8)	.5	.35-.70	<.0001
Whites	60/690 (9)	15/359 (4)	.46	.24-.83	<.004
Hispanics	23/198 (12)	3/84 (4)	.28	.05-.98	.02
Blacks	109/430 (25)	24/109 (22)	.83	.48-1.4	.28

The associations of HIV serostatus with MMTX remained significant when adjusted for gender.
Conclusion: More than 60 months MMTX was associated with HIV seronegativity for whites and Hispanics but not blacks. The high (22%) rate of HIV+ black IDU with long term MMTX deserves further investigation.

S.C.749 A SOCIAL STUDY OF SEROPOSITIVE INTRAVENOUS DRUG ABUSERS IN STOCKHOLM.

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Objective: To study treatment efforts, the social support and changes in drug behavior among seropositive drug abusers.

Methods: In all 18 social welfare districts in Stockholm special groups of social workers have been appointed to get into contact with drug abusers. From those groups data on seropositive addicts have been obtained. The study comprises 219 persons in november 1989 and 197 one year earlier. There is an estimated total number of approximately 300 seropositive drug users in the city of Stockholm.

Results: Of 219 addicts 131 were in regular work, education or treatment in the end of 1989. Fiftyone of those were in methadone programs and 31 in treatment institutions. Seven were in prison. 126 have continued to take drugs intravenously and 78 were considered to practise a risk behavior by sharing needles or unprotected intercourse. There were more addicts in treatment in 1989 than in 1988 but the number with risk behaviour was the same.

Conclusions: A substantial share of the infected drug addicts in Stockholm has been offerred treatment or social support. In many cases there have been positive changes but there still exists a group with risk behaviour. Methadone treatment in combination with social support has been the most effective method.

S.C.750 SURVEY OF FEMALE SEXUAL PARTNERS OF MALE IDU'S IN PREPARATION FOR HIV PREVENTION CAMPAIGN

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**California State University, Hayward, California, USA.

Objective: Investigate lifestyle patterns of women sexual partners of male IDUs (injection drug users) as the basis for developing HIV prevention programs. Message determination, method of intervention, and partner relationships were major issues to be studied.
Methods: Female sexual partners (100) of male IDUs were surveyed between May and Sept. 1989. The surveys, which included 135 items, were conducted by trained interviewers and required 1 hour to complete. Respondents were recruited at drug treatment clinics and by referral.
Results: Most of the women watch prime time TV, especially news (91%). 83% ride public buses and notice advertisements inside (78%) and on the outside (94%). Family members were named by 65% as their closest friends and 50% identified their families/children as the most important thing in their lives. Seventy-one percent said they never use condoms during vaginal intercourse with their partner.
Conclusions: TV is an effective vehicle to reach this group. It may be tragic that the cost is prohibitive. Environmental advertising is an important means of message delivery. The value placed on family suggest that interventions which refer to or involve family members may be successful. A majority of women do not use condoms with their IDU sexual partners, therefore, campaigns targeting this population should attempt to raise condom use.

S.C.751 CHANGE IN AIDS KNOWLEDGE, PERCEPTIONS AND RISK PRACTICES FOR FEMALE PARTNERS OF IV DRUG USERS AFTER EDUCATIONAL INTERVENTIONS: INITIAL FINDINGS.

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Objective. To evaluate HIV prevention education and determinates of behavior change for partners of IV-drug users (IVDU), 107 women partners of male IVDUs in methadone treatment and 42 heterosexual, male IVDUs were studied.
Methods. Sequential testing and an experimental intervention that reflected values of the Mexican American culture were given to 107 women. A subset received paired testing with their male, IVDU partner who took a standard educational intervention. The test instrument included Scales for AIDS Knowledge (AK), Intent for Safer Practices (INTENT), Perceived Risk for AIDS (PerRISK), Sexual Practices (SP) and Acculturation/ Assimilation (A/A).
Results. The experimental intervention in 107 women resulted in an immediate increase in AK ($t=13.44$, $p<0.0001$), INTENT ($t=6.78$, $p<0.0001$) and PerRISK ($t=4.06$, $p<0.0001$). At baseline, Hispanic women in the bottom 1/3 of A/A had the lowest AK (ANOVA, DF=2, $F=11.85$, $p<0.0001$) compared to the most acculturated and assimilated Hispanic women (h-W) or non-Hispanic Caucasian women (nHC-W). Hispanic women (H-W & h-W) compared to nHC-W reported fewer sexual practices associated with increased risk of HIV transmission (ANOVA, $F= 7.46$, $p=.001$). The standard intervention given to male IVDU did not significantly change AK in men or their female partners.
Conclusion. The study indicates that direct educational intervention to women partners of IV drug users increases: 1) knowledge about the dangers and means of HIV infection; 2) acceptance of personal risk; 3) intention to change risk behavior; and 4) skills to empower women to effect change.

Controlled Trials: Treatment and Education

S.C.752 EFFECT OF ZIDOVUDINE IN PREVENTING HIV INFECTION BY HETEROSEXUAL TRANSMISSION.

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Objective. Evaluate the prevalence and incidence of HIV infection in heterosexual partners (HP) of anti-HIV positive subjects (Index case=IC). Evaluate the efficacy of treatment of IC with Zidovudine (ZDV) in preventing the heterosexual transmission of HIV infection.
Methods. From January 1985 to December 1989, 110 anti-HIV positive subjects and their respective HP were studied. HP presenting risk factors for HIV infection other than sexual contact with the IC were excluded. Seronegative HP were invited to repeat the test every 6 months. 34 complied and were recontrolled every 6 months for 6-54 months. 12 were HP of IC treated with ZDV and 22 were HP of IC who received no treatment.
Results. 17/96 (17.7%) women and 2/14 (14.3%) men for a total of 19/110 (17.3%) were found to be seropositive at the first control. 2/24 (8.3%) HP of asymptomatic IC, 8/58 (13.8%) HP of IC with PGL and 9/28 (32.1%) HP of IC with ARC/AIDS were positive. Heterosexual transmission was associated with very low (<100) T4 cell counts (P<.01) and with positivity for HIV-Ag in the IC (P<.01). Length of relationship, frequency of sexual contacts, anal intercourse, oral sex and genital diseases were not found to be associated with partner infection. Seroconversion occurred in 2 cases (5.5 per 100 subjects/year) in the 22 HP of untreated IC (followed for 6-54 months, mean 20 months). Seroconversion was not observed in any of the 12 HP followed for 6-24 months (mean 17 months) whose IC partner was being treated with 1000 or 1200 mg per day of ZDV. In the latter group 6 of the IC were asymptomatic and 6 had ARC/AIDS (group IV A/group IV C1); 3 were HIV-Ag positive.
Conclusions. Clinical stage of the IC, low T4 cell counts and HIV-Ag positivity are factors which significantly influence heterosexual transmission of HIV. Treatment of IC with Zidovudine considerably reduces the probability of HIV infection in the respective HP. These findings remain to be verified in larger more representative samples.

S.C.753 COMPARISON OF THREE AIDS EDUCATIONAL METHODS WITHIN BLACK, HISPANIC, AND WHITE NEIGHBORHOODS

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Objective. To evaluate the effect of three educational techniques on AIDS knowledge, perceived social norms, and behavior of Blacks, Hispanics, and Whites.
Method. Community residents (N=296) were randomly assigned to one of four conditions: (1) individual AIDS education session, (2) in-home group discussion, (3) printed materials, or (4) no-intervention control. Each educational intervention emphasized the importance of talking to others about AIDS, especially those at risk of HIV infection, and provided training on how to encourage others to change high-risk behaviors. Knowledge, perception of community norms, and number of persons talked to about AIDS were measured at pretest and six-week follow up. Ethnicity of participants was: 36.8%, Black; 38.2%, Hispanic; 25%, White.
Results. Significant increases in level of knowledge (p<.001), perceived social norms (p<.001), and number of persons talked to about AIDS (p<.001) were observed across treatment conditions. Multivariate analysis of variance revealed differential increases related to type of educational intervention (p<.05) and ethnicity (p<.001). Knowledge scores were significantly higher at follow-up for within all three ethnic group (p<.001), however, meaningful changes in perceived social norms were observed only among Hispanics. The number of persons talked to about AIDS increased significantly only among Whites and Hispanics.
Conclusion. General community residents can be effectively trained to become informal educators to their friends and family members who may be at-risk of HIV infection.

S.C.754 A RANDOMIZED TRIAL OF AIDS EDUCATION AND HIV TESTING FOR COLLEGE STUDENTS.

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College students are a sexually active group whose risk of contracting HIV may be modified by education. To evaluate the effect HIV testing and intensive education have on sexual behavior and partner HIV risk factor communication, we randomized consenting heterosexual college students to receive an HIV test with an educational intervention (TEST), an educational intervention alone (ED) or no intervention (CONTROL).

Of 435 students completing the baseline questionnaire, 410 (94%) were followed-up at 2 months: 117 TEST, 125 ED, and 104 CONTROL subjects, and 64 who were randomized to the TEST and ED groups, but did not attend. Study participants had a mean age of 24; 60% were white and 72% female. Of the 89% who were sexually active, the median age at first intercourse was 17; median number of lifetime sex partners was 4. In the past month, few had communicated with sex partners about HIV; median number of sex partners was one; half had vaginal or anal intercourse without a condom. No significant differences in demographics or baseline communication about HIV risk or sexual behavior were found between groups. At follow-up, TEST and ED groups increased HIV risk communication with partners: 25% of the TEST group asked about a sex partner's HIV status vs. 15% of the ED group vs. 6% of the CONTROL group ($p < 0.001$). Similarly, 33% of the TEST, 20% of the ED and 17% of the CONTROL groups asked about their partner's previous number of partners ($p < 0.02$). We found a trend toward greater questioning about intravenous drug use: TEST 10%, ED 9%, and CONTROL 3% ($p=0.09$). Results remain significant if the 64 who missed the educational intervention are kept in their originally randomized groups. Subjects randomized to receive an HIV test appeared to ask about HIV status and number of partners more often than those receiving only education ($p=0.06$). Number of sexual partners and condom use did not differ between the groups at follow-up.

This study suggests that a primary care educational intervention can increase college student HIV risk communication. Testing for HIV antibody may augment this effect.

S.C.755 COMPARISON OF THE RESULTS OF A STANDARDIZED AIDS PREVENTION PROGRAM IN TWO GEOGRAPHIC LOCATIONS

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Objective: While various AIDS prevention programs have demonstrated outcome results, there has been little standardization of either program or assessment. Without such standardization, geographic comparisons and generalization of results is difficult.
Methods: Employing a 21 item Aids Prevention Test (APT) designed by the authors that has previously demonstrated both reliability and form A, B equivalence, 109 participants in 5 STOP AIDS discussion groups in Chicago and 109 participants in10 similar groups in Orange County, California took form A prior to the one session 3 1/2 hour discussion group and form B after.
Results: A 2 (pre-, post-discussion group) by 2 (Chicago, Orange County) ANOVA indicated significant gains in AIDS related knowledge after the discussion groups ($F(1,432)=33.88$, $p.<.001$). The interaction was also significant ($F(1,432)=5.30$, $p.<.03$). This interaction was caused by the fact that the Chicago group started with greater knowledge (78.1% vs. 73.6%) and demonstrated less after the discussion groups (82.8% vs. 84.6%). An identical ANOVA indicated similar results with relation to attitude change ($F(1.432)=16.05$, $p.<.001$) and a similar interaction ($F(1,432)=5.47$, $p.<.02$ for the same reason that the Chicago participants started with healthier attitudes (30.28 vs. 29.86) and ended with less change (30.81 vs. 31.85). An identical ANOVA indicated significant gains in actual (pre-discussion) versus intended (post-discussion) behavior after the discussion group ($F(1,432)=87.88$, $p.<.001$). There was no interaction effect, with the Chicago group starting with riskier behavior and ending the same, but with both groups making identical gains. The correlations in both groups demonstrated an identical pattern with only pre-discussion behavior correlating with post-test behavior.
Conclusion: The almost identical gains in behavior change from a standardized intervention in two different locations are heartening. However, given that many AIDS prevention programs stress knowledge and/or attitude change, the lack of correlation of knowledge or attitudes, either pre or post-discussion group, in either location is disturbing and raises the question of how AIDS prevention and risk reduction should be accomplished.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Controlled Trials: Condoms

S.C.756 STRENGTH COMPARISON OF "EXTRA STRENGTH" CONDOMS

Voeller, Bruce.*; Coulson, A.**; Campeau, J.***; Bernstein, G.***; and Nakamura, R.***
* The Mariposa Foundation, Topanga, CA, USA, **University of California, Los Angeles, CA, USA, ***University of Southern California, Los Angeles, CA, USA.

Objective: To determine the strength of "extra strength" condoms, compare them with ordinary ones, and compare 2 different manufacturers' products.
Method: 600 condoms were tested by ASTM tensile and elongation (T&E) protocols and 960 by the ISO Air Burst Test.
Results: Schmid Laboratories, Inc. and Carter-Wallace, Inc. extra strength condoms showed distinctly greater strength than their ordinary products. Non-aged Schmid extra strength condoms were 171.5% the breaking load of those from Carter-Wallace; Schmid's artificially-induced aged ones were 154.8% Carter-Wallace's. Both tested brands of Schmid's ordinary condoms were as strong or stronger than the Carter-Wallace extra strength condom. Comparable results were obtained with Air Burst Test measurements.
Conclusions: Extra strength condoms are significantly stronger than ordinary ones, and also differ significantly between manufacturers.

S.C.757 INITIAL BREAK-POINT OF LATEX CONDOMS DURING THE AIR BURST TEST, VIEWED WITH HIGH SPEED PHOTOGRAPHY

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*Consumers Union, Mt. Vernon, NY, USA, ** The Mariposa Foundation, Topanga, CA, USA, ***Rochester Institute of Technology, Rochester, NY, USA.

Objective: To determine whether the internationally used Air Burst Test is flawed as a measure for condom strength. Some manufacturers suggest that tested condoms artefactually break at their point of attachment to the test instrument, rather than at weak points in the condom.
Method: High speed photography (5-10,000 frames per sec.) was conducted of latex condoms inflated to burst under standard Air Burst Test conditions.
Results: Rupture of the condom typically is initiated at a focal point on the shank of the condom, then propagates throughout the condom's surface, often ending at the point of attachment to the air burst instrument.
Conclusions: This sequence of events is the reverse of that some hypothesize to occur. The value of the Air Burst Test as a standard for assessing manufacturing quality control as well as for condom strength measurements and comparisons is supported by these observations.

S.C.758 UPDATE ON THE WPC-333 FEMALE CONDOM

Leeper, Mary Ann
Wisconsin Pharmacal, Jackson, Wisconsin, USA

Increasing options for AIDS prevention leads to increased usage due to the higher probability of finding a product acceptable to both partners. This results in broader public protection. Wisconsin Pharmacal has been developing a new protective barrier device for women to wear, generally referred to as the WPC-333 female condom. Marked interest has been expressed by health care professionals, particularly AIDS outreach counselors and family planning professionals, concerned about offering protective alternatives for partners to try. Seven clinical studies to be presented evaluated different safety and efficacy aspects of barrier protection, including leakage of WPC-333 compared to the male condom, vaginal exposure to semen compared to the male condom; post-coital examination of the vagina after using WPC-333; and user acceptability in different patient populations, including some minor work with spouses of hemophiliacs and homosexual men. The studies involved over 500 couples in close to 5000 uses. Exposure to semen was significantly less ($p = .001$ and $p = .03$) when WPC-333 was used than when the male condom was used. The data showed that WPC-333 was well accepted by those concerned about AIDS and other sexually transmitted diseases in all populations where the product was used.

An overview of all study protocols and the results will be presented, along with a discussion about user dynamics, receptivity, and issues related to using WPC-333.

S.C.759 BARRIER PROPERTIES OF SKIN CONDOMS TO HIV SIZED PARTICLES.

White, Nick; Harrison, M: Creasey, J; Singh, K.
London International Group Research and Development, Cambridge, U.K.

Objective: To determine the barrier properties of skin condoms to HIV sized particles using a highly sensitive test.
Method: Fluorescent microspheres 0.08 micron in diameter (HIV = 0.12 micron) were used to evaluate the barrier properties of skin condoms (Fourex). A sample cut from the condom was mounted between two halves of a modified filter funnel. A dispersion of microspheres was applied to the outside of the membrane and samples of the aqueous collection fluid were taken from the reverse side. Using this simple apparatus the passage of 0.002 microlitre of test fluid was the limit of detection.
Results: Over a three hour test period none of the test microspheres penetrated the condom film.
Conclusion: Skin condoms are a barrier to particles smaller than HIV.

Controlled Trials: Homosexual and Bisexual Men

S.C.760 IMMUNOGENICITY OF PLASMA-DERIVED VS RECOMBINANT HEPATITIS B VACCINE IN THE BALTIMORE MACS.

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OBJECTIVE: To compare the immunogenicity of plasma-derived hepatitis B vaccine to that of the recombinant vaccine in both HIV infected and uninfected gay men.
METHODS: Susceptible gay men in the Baltimore MACS who agreed to be immunized against hepatitis B were randomized to receive either plasma or recombinant vaccine. Response was defined as anti-HBsAb > 10 SRU; sera from participants were tested 9, 12, 24 and 36 months following immunization. Fisher's exact test was used to test for significant differences.
RESULTS: Significant differences were found in HIV-1 seronegative men at 9 and 36 months. At 9 mos, 64 of 69 (93%) receiving plasma vaccine responded vs 58 of 72 (81%) receiving recombinant vaccine(p=0.03). At 36 mos, the respective proportions were 56/61 (92%) vs 38/57 (67%)(p=0.0006). In HIV-1 seropositive men, response was significantly lower for each vaccine. Among the HIV-1 seropositive men, there was no significant difference in the response to plasma and recombinant vaccines, but the trend again demonstrated better immunogenicity of the plasma vaccine.
CONCLUSION: Plasma derived hepatitis B vaccine appears to be a better immunogen in gay men; protective levels of anti-HBsAb are reached sooner and last longer than those of the recombinant vaccine.

Controlled Trials: Drug Users

S.C.761 BLEACH IS NOT ENOUGH: GIVING IV DRUG USERS A CHOICE OF DISINFECTANTS WHEN THEY SHARE NEEDLES AND SYRINGES

Flynn, Neil*; Jain, S*; Keddie, E.*; Carlson, J*; Jennings, M*; Haverkos H**; et al. *University of California, Davis, California, USA; ** NIDA, Bethesda, Maryland, USA.

Objective: To identify effective HIV-disinfection materials easily available to IV drug users (IVDU) when they are sharing needles and syringes (N&S).
Methods: Laboratory-grown cell-free and cell-associated HIV 1, and blood from IVDU infected with HIV 1 were exposed to disinfection by various potential disinfectants (D) that IVDU identified as easily available when they are sharing N&S. Infectivity was assayed for using peripheral blood lymphocytes.
Results: There was stepwise increasing resistance (R) to disinfection as the in vivo situation was approached, exhibiting this pattern: R of cell-free<cell-associated<IVDU whole blood. Many potential D were active against cell-free HIV 1, fewer against cell-associated (there was also increasing resistance as the number of HIV-infected cells was increased in the disinfection mixture: R of $10^4 < 10^5 < 10^6$ infected cells), and fewest against IVDU whole blood. Dilute household bleach, 70% isopropyl alcohol and dilute liquid dish detergent were the most active of the D tested.
Conclusion: Whole blood is protective against disinfection of HIV. Of many D tested for use by IVDU when they share N&S, only 3 reliably disinfected HIV-infected whole blood. The use of these materials to disinfect N&S prior to sharing should be popularized among IVDU to slow the spread of HIV.

S.C.762 NEEDLE EXCHANGE: WHERE HAVE ALL THE NEEDLES GONE?

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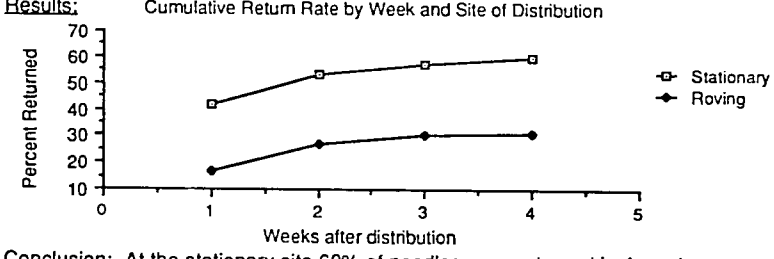
*UCSF Center for AIDS Prevention Studies ** Prevention Point Research Group *** Division of Occupational Safety and Health, State of California, San Francisco, California, USA

Objective: We piloted capture-recapture methods in an exchange program to 1) Indicate how long distributed needles remained on the street and 2) Explore differences in rate of return for different program models.
Method: All needles distributed on a single night were marked to identify the site of distribution. 1200 were distributed from a stationary site, and 200 from a mobile/roving site. In the following 4 weeks all marked needles returned to both sites were recorded.
Results:



Conclusion: At the stationary site 60% of needles were returned in 4 weeks, suggesting a stable clientele who exchange repeatedly. Capture-recapture methods successfully discriminate between different program models. This type of measure, in concert with self report measures, will increase knowledge of program effectiveness and assist in public health policy decisions related to needle exchange.

S.C.763 EVALUATION OF A RISK REDUCTION PROGRAM FOR INTRAVENOUS DRUG USERS

Chitwood, Dale D.*; McCoy, C.B.*; McCoy, H. V.**;; McKay, C.*; McBride, D.C.***; Comerford, M.*
*University of Miami School of Medicine, Miami, Florida
**Florida International University, Miami, Florida
***Andrews University, Berrien Springs, Michigan

OBJECTIVE: To evaluate a risk behavior reduction program for a street recruited cohort of intravenous drug users (IVDUs).
METHODS: A cohort of 1000 tri-ethnic male & female IVDUs were interviewed at baseline, randomized to a standard or an enhanced 3 session intervention, & are being reinterviewed 6 months later. Baseline & 6 mo data from the first 400 enrollees are reported.
RESULTS: More IVDUs reported a reduction in frequency of injection (cocaine 55%, heroin 42%, speedball 33%) than reported an increase (cocaine 8%, heroin 8%, speedball 11%). For non-injected drugs, similar reductions (alcohol,23%, marijuana 32%, cocaine 36%, crack 32%) and increases (alcohol 15%, marijuana 14%, cocaine 12%, crack 22% were reported. Reductions in sharing needles (from 48% at baseline to 21% at followup) and using shooting galleries (baseline 30%, followup 22%) were reported. More IVDUs decreased (55%) than increased (21%) number of IV sex partners, but more increased (44%) than decreased (28%) number of other sex partners. Condom use increased from 32 to 51%. Specific comparisons by type of intervention also are reported.
CONCLUSION: Risk reduction in parenteral and other drug use and in sexual behavior is being achieved among non-treatment IVDUs .

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

Controlled Trials: Health Care Workers 764–767

S.C.764 REPROCESSING REUSABLE PLASTIC HYPODERMIC SRYRINGES: ANALYSIS OF COST SAVINGS AND EFFECTS ON MECHANICAL PERFORMANCE.

D. L. Mwaniki, Kenya Medical Research Institute, NBI. Kenya.

Objective: Cost savings that are realized from reprocessing plastic syringes (by steam sterilization) and the set backs in mechanical performance that arise from the practice.
Methods: The cost of reprocessing syringes in a health establishment in a requirement of about 700 syringes per day was analysed. 10 syringes were randomly selected and the forces required in withdrawal of their pistons were determined. New disposable plastic syringes were used as a reference.
Results: The cost of reprocessing s syringes was US$0.12. The cost of a reprocessed syringe was determined using the formula $C=I_c+R_cN/(N+1)$, where C=cost of a reprocessed syringe, I= initial cost, R= cost of reprocessing and N= number of cycles. The cost of reprocessing the syringe once was 29.8% lower than I_c but did not reach an asymptotic value until after about 1000 cycles. Maximum saving are realized in the first 3 cycles. Considering one cycle, monthly savings would be about US$ 1,800. The mean force required in piston withdrawn was 32.25N (3.23kg/force) and was between 3 and 8 times that required in reference syringes. The reduction in withdrawal force was highly significant (P 0.001) following application of a film of lubricant oil.
Conclusion: Reprocessing syringes contitutes a re-manufacturing process and potentially significant savings are realised. However, in addition to the potential risk of transmitting HIV and Hepatitis B viruses, syringe reprocessing reduces the intended effectiveness due to lack of quality control.

S.C.765 RAPID INITIATION OF ZIDOVUDINE (AZT) PROPHYLAXIS AFTER WORKPLACE EXPOSURE IN HEALTHCARE WORKERS

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Objective: To develope a protocol for the institution of AZT prophylaxis as soon as possible after workplace exposure.
Methods: Animal evidence with oncogenic retroviruses suggests that AZT given to accidentally exposed healthcare workers (HCW) may prevent or modify HIV infection. Best results are expected if AZT is present before or shortly after exposure.
Results: A 72 h. supply of AZT is kept in high risk locations; the morgue, lab, OR, ER, and nursing stations. HCW are counselled on AZT prophylaxis prior to exposure. HCW are instructed to take 400 mg AZT IMMEDIATELY after parenteral exposure to any blood or body fluid (BBF), then 200 mg every 4 h. The HCW reports to employee's health and in <72 h. a team evaluates the magnitude of the exposure and risk based on lab data and DX, and counsels the HCW regarding continued therapy for 6 weeks or cessation. Any definite parenteral exposure to HIV infected BBF qualifies for AZT. If minor toxic symptoms or signs appear, AZT is continued at a reduced level. The HCW is monitored for 1 yr after AZT.
Conclusion: This immediate onset protocol assumes all BBF are infected and allows early therapy while a decision to continue or discontinue AZT is made over a 3 day period, rather than have a team decide to start AZT in a crisis mode. A loading dose immediately after exposure achieves a therapeutic level as soon as possible. If the benefit:risk ratio is acceptable, the AZT is continued for 6 weeks.

S.C.766 ZIDOVUDINE (AZT) USE AFTER OCCUPATIONAL EXPOSURE TO HIV-INFECTED BLOOD

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Centers for Disease Control, Atlanta, Georgia, USA

Objective: To describe patterns of AZT use in health-care workers (HCWs) after exposure to HIV-infected blood.
Methods: In 1983, CDC began surveillance of HCWs after percutaneous, mucous membrane, or nonintact skin exposures to HIV-infected blood. In Oct 1988 we began collecting data on AZT use and toxicity in HCWs enrolling in this project.
Results: As of Dec 31, 1989, 1281 HCWs were tested at least 6 months after occupational HIV exposure; 4/1127 with percutaneous (0.35%; upper bound 95% CI=0.81%), 0/67 with mucous membrane, and 0/87 with skin exposures were HIV seropositive. None of 261 HCWs enrolled from Oct 1988-Dec 1989 seroconverted; 17 HCWs (6.5%) took AZT post exposure (3.2% of 127 HCWs in Oct 1988-Apr 1989 took AZT vs 9.7% of 134 HCWs in May 1989-Dec 1989; p<0.06). Frequency of AZT use was similar at medical school-affiliated hospitals (12/196 HCWs, 6.1%) and unaffiliated hospitals (5/65 HCWs, 7.7%). AZT was taken by 11.1% of 36 physicians, 4.9% of 162 nurses, and 8.2% of 61 other HCWs. AZT was used after 16/228 (7.0%) percutaneous injuries and 1/33 (3.0%) nonintact skin or mucous membrane contacts (p=NS). Prescribed regimens varied (600-1200 mg/day for 3 days-6 weeks). Possible toxicity occurred in 7 of 14 HCWs for whom data are complete, including headache (3), nausea (4), vomiting (2), and hemoglobin drop from 13 to 9 gm/dl (1). AZT was stopped because of adverse effects in 4 HCWs.
Conclusions: AZT post-exposure use is increasing at hospitals reporting to CDC; efficacy and toxicity of prophylaxis require further study.

S.C.767 ZIDOVUDINE PROPHYLAXIS AFTER OCCUPATIONAL EXPOSURE TO HIV IN HEALTH CARE WORKERS

Puro, Vincenzo*; Ippolito, G.*; Vella, S.**;and Angarano,G.; Arici,C.; D'Argenio,P.; Ferlini,A.; Fruttaldo,L.; Macri', G.; Narciso,P.; Ranieri,S.; Scasso,A. for
The Italian Study Group on Occupational Risk of HIV Infection, supported by the Italian Ministry of Health- AIDS Research Project- * Coordinating Center: L.Spallanzani Hospital-Rome - ** National Institute of Health-Rome

Objective: To evaluate safety and toxicity of Zidovudine (AZT) prophylaxis after occupational exposures to HIV in health care workers (HCW).
Methods: In our Country AZT can be dispensed only in licensed public centers. In the last year some of them started to offer AZT to HCW for postexposure prophylaxis. All HCW that entered, after informed consent, into the treatment, received appropriate biochemical, hematologic and clinical follow-up to monitor toxicity. Data on way and type of exposure, dosage and duration of administred AZT prophylaxis and adverse effects observed have been recorded in a standard form and analyzed.
Results: A total of 21 HCW, all accidentally exposed to blood, were treated. The dosage ranged from 500 to 1200 mg per day with dose intervals of 4-6 hours; the duration of treatment ranged between 5 and 42 days. The adverse effects reported were nausea (28.6%), gastric pain (19.0%) and vomiting (14.3%). No biochemical or hematologic side effects were observed. Adverse effects were more frequent in HCW assuming more than 800 mg per day. Neither seroconversion nor signs or symptoms of acute illness were observed after a mean follow-up of 5 months (range 1-12).
Conclusions: Our study shows a low and dose-related toxicity of a short-term prophylaxis with AZT in healthy HCW occupationally exposed to HIV. Further data on the adequate schedule are needed.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Access to Care, Treatment, and Trials

S.D.768 A MULTI-CENTER HIV CLINICAL TRIAL SITE MODEL

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Department of Medicine, Department of Veterans Affairs Medical Center and The University of California, San Francisco, California, USA

Objective: The HIV epidemic has created unprecedented demands for large, well-designed clinical trials. A successful model for the local implementation of a multi-center HIV disease-related clinical research protocol is described.
Methods: To initiate our site, local training was provided by an experienced clinical coordinator from an affiliated center. A separate in-house working protocol summarizing key logistical requirements was written. Study staff met regularly with the Principal Investigator to monitor progress. Study clinics were created apart from regular clinics; protocol staff attended all clinics to recruit subjects. Enrollment was facilitated by a flexible schedule to accommodate working subjects. Pre-packaging and sequencing of all study-related forms and supplies improved efficiency. After enrollment, subjects were integrated into the multidisciplinary care clinics so as to receive services equivalent to non-study patients.
Results: 76 patients were enrolled. 82% of the subjects continue to be active participants after 24 months of follow-up. 14 patients dropped from the study for: non-compliance (5), loss to follow-up (3), and self-termination (6). Subject recruitment was accomplished most effectively by in-house clinic referrals. Press releases, attending community meetings, flyers targeted to health care providers and patients, and participant referral were also used, but with less success.
Conclusions: The high enrollment and retention rate can be attributed to close attention by study staff, designing clinics to accommodate patients' employment, and providing full access to hospital services. Most patient referrals came from the general clinic population.

S.D.769 EVALUATION OF COMPLIANCE RATE IN A CLINIC SERVING MINORITY AND LOW INCOME COMMUNITIES

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Woodhull Medical and Mental Health Center, Department of Ambulatory Care, Brooklyn, New York, USA

OBJECTIVE: To document factors affecting compliance in a population drawn from communities that are considered "traditionally noncompliant" in a primary care community clinic for HIV disease designed to be culturally sensitive. The population is of low socioeconomic status, predominately black and hispanic and with intravenous drug use as the most common risk factor.
METHOD: Patients missed appoinments were compared with broken appointments in the hospital based ambulatory care network (ACN). The overall broken appointment rate, calculated as a proportion of total appointments per patient, was assessed. Retrospective chart review was performed to determine and catagorize factors contributing to missed appointments.
RESULTS: The average appointment compliance rate in the community clinic was 85% compared to 60% in the ACN. When rescheduled appointments are taken into account, compliance rates increase to 90% or better for the community clinic. Factors contributing to missed appointments were conflict with work schedules, lack of child care, no transportation, family illness and hospitalization.
CONCLUSION:The overall compliance rate of our clinic population is significantly higher than for the ACN, and compares to clinic populations in communities with higher income. This abstract supports the importance of flexibility, training and knowledge on the part of medical providers in low income communities. Additionally, the social role of women as caretakers is underestimated as a contributing factor to their compliance and compliance of their families. Missed appointments can be reduced with adequate social services and improved administrative management. Modifications of clinic structures for communities with these variables should be implemented in health planning and design of ambulatory systems and research protocols given the intensive medical regimens for HIV disease.

S.D.770 DEMOGRAPHIC ANALYSIS OF ACTU TRIAL ENROLLMENT VS. INCIDENCE OF AIDS IN NEW YORK CITY.

Long, Iris; Davis, I.; Smith, R.; Kirschenbaum, D., AIDS Treatment Registry, NY, NY, USA

OBJECTIVE: To review and analyze the enrollment statistics of U.S. federally funded clinical trials in New York City, and determine if they were representative of the demographics of AIDS in New York City.
METHODS: Demographic information on the 1243 enrollees in the 6 designated New York City AIDS Clinical Trials Units (ACTUs) was collected from the National Institute of Allergy and Infectious Diseases (NIAID) as of 1/13/90 and compared with demographic data from New York City's AIDS surveillance unit. While the city stratified the data on the incidence of AIDS in Blacks and Hispanics according to sex and identified risk factor, NIAID reported sex, race and risk factor as if they were separate, mutually exclusive groups; and did not provide information about overlap. One ACTU (Einstein) proved to have markedly different demographic data from the rest; results are presented both with and without the data from this site.

RESULTS:	WHITES	BLACKS	HISPANICS	WOMEN	IVDUs
All ACTUs	786 (63%)	122 (10%)	309 (25%)	158 (13%)	179 (14%)
Einstein	66 (31%)	27 (13%)	118 (55%)	88 (41%)	74 (30%)
ACTUs w/o Einstein	720 (70%)	95 (10%)	191 (19%)	70 (7%)	105 (10%)
AIDS cases in NYC: 12/28/89	8928 (38%)	7857 (34%)	6301 (27%)	3166 (14%)	8575 (37%)

CONCLUSIONS: There is a significant underenrollment of Blacks and IVDUs in ACTU trials in NYC. One tenth of enrollees were identified as Black or as IVDUs, yet more than a third of the city's people with AIDS are identified as Black or as IVDUs. One ACTU (Einstein) enrolled a disproportionate number of Hispanics and women relative to the others. When the data are analyzed without this site, women and Hispanics are significantly underenrolled as well.

S.D.771 HIV-PROTOCALL: USE OF A HOSPITAL CLINICAL COMPUTER FOR AIDS CLINICAL TRIALS PROTOCOL INFORMATION DISTRIBUTION

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Objective. To utilize a readily available hospital clinical computing system for AIDS Clinical Trials Group (ACTG) protocol information distribution.
Methods. HIV-ProtoCall is an interactive computer summary of ACTG sponsored protocols which was added to the decision support option of the Beth Israel clinical computing system. The user can select information about protocols based on stage of HIV illness, therapies for opportunistic infections, or experimental agents listed by name and includes general information about CDC definitions of ARC and AIDS. Eleven active protocols are currently available in the program with each protocol outlined in a standardized format including: study design and sites, entry criteria, pharmacology, toxicities and monitoring, and information resources. Use of the hospital clinical computing system is available to all personnel involved in patient care and clinical support services. At the completion of HIV-ProtoCall use, a series of questions are displayed which gather information about who is using the program, why,and overall satisfaction with the program.
Results. From May 4, 1989 to January 12, 1990, HIV-ProtoCall was used 784 times: 176 users were staff physicians, 179 house officers, 52 medical students, 282 nurses, and 95 other staff. Reasons for use included: 20% looking for specific protocols (7 reported finding a protocol for a patient), 5% caring for a patient on a protocol, and 74% educational purposes. Program evaluation showed 84% of respondents found HIV-ProtoCall usefui.
Conclusion. An interactive computer program as part of a hospital clinical computing system can be used to effectively distribute clinical trials protocol information. (Copies of protocol outlines will be available at the meeting.)

S.D.772 THERAPY DECISIONS AMONG SEROPOSITIVE GAY BOSTON MEN

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*University of Massachusetts,Amherst,Massachusetts,USA,
**Fenway Community Health Center,Boston,Massachusetts,USA

Objective: To ascertain whether HIV+ gay men who use any sort of therapy (RX) differ from similar men who do not, and to describe the extent and nature of alternative or complementary (A/C) RXs used instead of or in addition to conventional medical RX.
Methods: HIV+ subjects of a natural history cohort study begun in 1985 were asked new questions in early 1989 related to current/past use of HIV-related RX. Fifty-nine subjects were cross-classified by use/type of RX and symptom status (SX=any CDC Class IV hx). Associations of RX with selected beliefs, attitudes, and behaviors were evaluated statistically.
Results: Eighteen(78%) of SXs and 12(33%) of ASXs used some RX. Low-risk sex practice (current and change since study entry) was associated with RX in both strata. Other correlates of RX in SXs were lower CD4 counts and non-use of nitrite inhalants; correlates in ASXs included greater perceived stress, less alcohol use, and community activism. Of those using any RX, 9(30%) used conventional only, 7(23%) used A/C only, and 14(47%) used both. Of those on conventional RX, 19(83%) used zidovudine. Users of combined RX types tended to have the most advanced disease while users of A/C RX only had least advanced. All groups rated several general health preservation measures more efficacious against disease progression than any specific RX. Overall, 21(36%) used 36 different A/C RXs, including 3 Of 7 subjects enrolled in clinical drug trials.
Conclusions: This study adds evidence for the widespread use of alternative RX and indicates a somewhat different profile for those men who elect any RX. Clinicians need to assess clients' behavioral profiles and get thorough histories of non-conventional RX before recommending specific HIV RX choices.

S.D.773 FEASIBILITY TRIAL FOR OUTPATIENT INDUCTION WITH GANCICLOVIR.

Miller, John; Dolan,G; Fowles,T; Schreurs,E:
St Vincents Hospital, Sydney, New South Wales, Australia.

OBJECTIVE: To determine the feasibility of outpatient Ganciclovir induction therapy for Cytomegaloviral (CMV) infections.
METHOD: Twenty patients with newly diagnosed CMV infections and with no co-existing conditions requiring hospitalisation were enrolled in the study over a three month period. Treatment clinic hours were extended to provide for twice daily infusions of Ganciclovir at twelve hourly intervals. Haematological values were checked bi-weekly and clinical examination conducted regularly to determine disease response. Detailed figures were obtained to establish comparitive costs of inpatient and outpatient inductions.
RESULTS: Subject compliance with the regime was high (>95%). One subject was excluded due to renal failure. Disruption to subjects lifestyle was minimised with some continuing to work during the three week induction phase. Cost analysis demonstrated a greater than eighty percent cost benefit over inpatient induction therapy.
CONCLUSION: The outpatient treatment of clients with AIDS related infections and tumours has proved to be a viable and cost effective option with no appreciable decline in quality of care. The potential for extended outpatient services and treatments should be fully examined as demand for inpatient beds has increased.

S.D.774 THE FEASIBILITY OF PROVIDING AZT THROUGH NATIONAL AIDS PROGRAMS IN LATIN AMERICA: WHAT WOULD IT COST?

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Objective: To provide simple cost estimates for the expenditure needed to procure Zidovidine (AZT) for all infected individuals with HIV disease and to only symptomatic individuals with HIV disease in Latin America.
Methods: Country reports received at the regional level were used to determine the number of surviving AIDS cases in each subregion. KAP surveys results and pooled serosurvey results were used to estimate the number of HIV infected individuals in the region. An estimated cost of $120.19 per 100 tablets (100 mg) AZT was used.
Results: We estimate conservatively that there are 8,557 persons surviving with AIDS in the region and 461,797 are infected without symptoms. The estimated costs for provision of drug to currently symptomatic patients would be $22,461,693. The cost to provide AZT to all infected persons would exceed $200 million per annum. This is in the context of a current total expenditure by GPA of $12,897,400 per annum in support of all AIDS activities in these areas.

S.D.775 DROP OUT IN AZT TREATED PATIENTS

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Objective: to study drop out of AZT treated patients accourding to their risk factors for HIV infection.
Methods: we studied DO rates in 422 HIV-infected patients treated at our Clinic; we considered a DO a living patient who did not return to our Clinic nor attended other institutions for HIV infection treatment.
Results: as shown in the table, no significant difference in DO was found for risk groups.
Conclusion: in order to avoid a waste of resourses, all patients undergoing AZT treatment should be counselled on importance of a continuous treatment.

		IVDU	HOMOSEXUALS	OTHERS
D	Yes	156	68	30
O	No	116	35	17

CHI-square= 2.63 NS

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.776 ACCEPTANCE RATE OF ZIOOVUDINE AMONG HIV-INFECTED PERSONS WITH 500<CD4≥200

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Objective: To determine the acceptance rate(AR) of zidovudine(ZDV) among HIV-infected persons(HIV-IP) with 500<CD4≥200 after the recent results of NIH ACTG placebo-controlled trials of ZDV in asymptomatic (ASX) infection (019) and early ARC (016).
Methods: Results of 019 and 016 showed that ZDV slowed down the progression of HIV infection to advanced ARC or AIDS in both ASX and symptomatic (SX) HIV-IP with CD4<500. HIV-IP with 500<CD4≥200 at UMMS HIV clinic were offerred ZDV and the acceptance or refusal of ZDV were recorded over a 4-month period.
Results: Seventy-three HIV-IP with 500<CD4≥200 were offerred ZDV, 49(67%) accepted.

	# of HIV-IP	Percent
Accepted	49	67
Refused	8	11
Considering	10	14
Failed to show	6	8
Total HIV-IP with 500<CD4≥200	73	100

Of the 49 HIV-IP who accepted ZDV, 23(47%) were ASX and 26(53%) had ARC. The proportions of acceptance by sex and risk groups reflected the demographic characteristics of HIV-IP of UMMS HIV clinic.
Conclusion: Given the high AR of ZDV among both ASX and SX HIV-IP with 500<CD4≥200, the question of finding additional financial resources and health care providers for closed monitoring of side-effects of ZOV clearly remains a major issue.

S.D.777 AEROSOLIZED PENTAMADINE PROPHYLAXIS: A MODEL OF CARE DELIVERY IN A LARGELY IVDU INNER-CITY POPULATION

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OBJECTIVE: To demonstrate the feasibility of primary and secondary prophylaxis of pneumocystis carinii pneumonia (PCP) in a largely IVDU inner city population attending the Infectious Disease Clinic at University Hospital in Newark, New Jersey.

METHODS: A total of 117 patients, of whom 79 (66.5%) are IVDU, received a total of 379 aerosolized Pentamadine treatments (300mg every 4 weeks) during the period from July, 1989 through January 1990. The patients were given a telephone reminder the day prior to treatment. A stable, committed staff supervised the treatment with pre- and post-treatment vital signs, lung ascultation and interview. A post-treatment snack was provided.

RESULTS: There were no severe adverse reactions, however, 9 treatments were given for bronchospasm (2%), 3 complained of nausea (.8%), 11 of bad taste (2.9%), and 3 of dizziness (.8%). Although there were 11 deaths, none were clinically related to PCP. During the past 6 months there were 68 "no shows" out of 446 scheduled treatments (13.0%).
CONCLUSIONS: These data suggest that aerosolized Pentamadine was well tolerated by our population with few side effects. Data also suggest that with a pre-appointment reminder and personalized follow-up, the inner-city patient, including the IVDU, can demonstrate an acceptable treatment compliance.

S.D.778 COMPLIANCE FOR OUTPATIENT AEROSOLIZED PENTAMIDINE THERAPY

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OBJECTIVE: To determine rates of compliance with monthly aerosolized Pentamidine prophylactic therapy in patients grouped by referral system or risk behavior.
METHODS: A retrospective review of appointments (appts) scheduled over a 6 month period in a hospital based HIV/AIDS clinic (HBC) which provides prophylactic aerosolized Pentamidine therapy. For the purpose of the study patients were categorized by 1.)referral source which includes patients from an HBC and Patients reffered from an outside provider (OS); and 2.) patients with different risk behaviors which include gay/bisexual (G/BI); intravenous drug user (IVDU); transfusion (TX); and other. Statistical significance of data was determined by the chi-square method.
RESULTS:A total of 107 patients were reviewed; HBC N=57:OS N=50 (p non-significant). Total scheduled appts were 478: HBC N=274; OS N=204 (p NS). Frequency of broken appts. was the same for both referral source: HBC N=42, 15.3%; OS N=31, 15.2% (p NS). There was no difference in composition of the two referral groups as categorized by HIV risk behavior (HBC vs OS): 28(49.1%) vs. 26(52.0%) (p NS); IVDU 22 (38.6%) vs 21 (42.0%) (p NS); TX 2 (3.5%)vs 2 (4%); and other 5 (8.8%) vs 1(2%). Broken appts..were not statiscally different when comparing risk behavior as well as referral source.
CONCLUSION: Compliance rates were very high in all patient groups studied. No statistical difference was detected in compliance rates when sources of patient referral or risk behaviors were compared.

S.D.779 CANADIAN AIDS PATIENTS'USE OF DRUG AND ALTERNATIVE THERAPIES ACCORDING TO REGION AND NATURE OF INVOLVEMENT IN COMMUNITY ORGANIZATIONS (AIDS)

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Objective: To examine Canadian AIDS patients'use of drug and 'alternative' therapies in relationship to region/centre of medical care, and nature of involvement (if any) with community organizations (AIDS).
Methods: 69 AIDS patients were interviewed in six Canadian centers (3 large urban centers and 3 smaller cities) and four provinces. Physicians and PWA community organizations referred patients for interview.
Results: 92.8% of patients interviewed were bi-sexual or gay men. 91.3% of the patients reported use of Zidovudine, and 8.7% refused this therapy. Centre differences were reported in starting treatments for first episode of PCP. There were also reported centre differences in use of AL721. There were no apparent differences in use of alternative therapies. Patients reporting use of the less common 'non-validated' drug therapies, and multiple use of such therapies indicated 'active' involvement in community organizations. 66.7% of patients reporting multiple use of alternative therapies also indicated active involvement in community organizations (AIDS).
Conclusions: Variations in clinical practices of physicians across the country can explain differences in treatment. Regional/centre differences in patients' use of 'non-validated' therapies are due to variations across community organizations (AIDS) and/or clinical practices of physicians. Both physicians and community organizations play a role in drug use and must be targetted when formulating health policy in this area. Active involvement with community organizations is related to use of the less common non-validated therapies, and the number of therapies (drug and alternative) used.

S.D.780 ALTERNATIVE THERAPIES IN AIDS

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Objective: To examine the use of alternative (non prescribed) therapies in HIV infection, and determine reasons for usage.
Methods: Fifty of 52 consecutive HIV infected patients treated by the service (2 excluded because of dementia) were studied. A validated confidential questionnaire was administered by a trained interviewer who was not part of the service.
Results: Patient characteristics: 48 males, 2 females, aged 19-72 years (mean = 37.4, SD = 12.3). Thirty eight homosexuals, 6 drug users (4 homosexual), 6 recipients of blood products. CDC disease stage was II(18), III(4) IVA(7) and IVB-D(20). Thirty five(70%) used alternative therapies (range 0-10, mean 2.6): megavitamins 40%, relaxation/meditation 40%, naturopathy/herbal medicine 32%, special diet 30%, imagery 28%, massage 26%, faith healing 20%. Twelve patients(24%) embarked on at least one treatment seeking a cure. Use was not associated with age, education, occupation, time from diagnosis, nor disease stage. Use was negatively related to satisfaction with the treating specialist as assessed on a linear analogue scale ($p<0.05$). Psychological data are yet to be analysed.
Conclusion: Use of alternative therapies is common and may be helpful or harmful. The strongest determinant of use is satisfaction with the treating specialist but other trends are evident. The study continues and is expanded to include control groups.

S.D.781 DETERMINANTS OF NONCONVENTIONAL TREATMENT USE AMONG HIV-INFECTED INDIVIDUALS.

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Objective: There has been much anecdotal reporting, and a few publications, on the use of nonconventional therapeutic modalities among HIV-infected individuals. We surveyed a cohort to describe the prevalence and determinants of use of conventional therapy (CT) and nonconventional (NCT) therapy.
Methods: Using the client mailing list from the Boston AIDS Action Committee, we sent a survey to 712 individuals (85% male, 60% White, 53% gay), all of whom have symptomatic HIV infection. Subjects listed which CT and NCT they had ever used. The following were assessed: income, education, sources of information about available treatments, HIV risk behavior, specific symptoms, overall mental and physical health status.
Results: Analysis of the first 172 respondents demonstrated the following: While 95% were using some CT, 73% were also using some NCT. Determinants that distinguished those using both from those using only CT were higher education level ($p=.004$), and lower T-helper counts ($p<.02$) in the group using both. The following factors were similarly distributed in these two groups: risk behavior, race, age, gender, income, information source, symptoms, or mental/physical health.
Conclusion: Most HIV-infected people are using both CT and NCT. While those using both tend to have a higher educational level and lower T-helper counts, use is generalized across a wide range of this population, including in groups thought to be least likely. Discussion of nonconventional treatment use is warranted by health care professionals and clinical researchers.

S.D.782 Evaluation of Compliance of Intravenous Drug Users and Homosexuals in AIDS Clinical Trials

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Objective: To evaluate the compliance of intravenous drug users (IVDUs) and homosexuals in AIDS clinical protocols.
Methods: Between November 1987-October 1989, 138 persons with ARC or AIDS have been enrolled in a study of Pneumocystis carinii pneumonia prophylaxis. They were randomized to either of two arms, aerosolized pentamidine (AP) or oral Dapsone (OD). Those randomized to AP are evaluated in this study. Compliance was assessed using the percentage of clinic visits attended (treatment or laboratory visits/maximum required visits x 100). Homelessness was also assessed as a factor influencing compliance; it was defined as living in a shelter, single-room occupancy hotel, (SRO) or group residence.
Results:

	N	Treatments(%+/-S.D.)	p value	Laboratory(%+/-S.D.)	p value
IVDU	31	83+/-21	0.01	92+/-16	0.8
non-IVDU	107	92+/-13		93+/-15	
homosexual	100	92+/-14	0.01	93+/-13	0.6
non-homosexual	38	85+/-19		91+/-20	

A trend was noted among homeless persons (N=36) in this study towards less compliance with treatment visits (86% vs. 92%; ($p=0.10$).
Conclusions: IVDUs are as compliant with monthly lab visits as homosexuals but less compliant than homosexuals with twice monthly treatment visits. It was expected that IVDUs would be less compliant with invasive procedures. Results suggest that frequency of visits is a factor that outweighs the invasiveness of procedures performed.

S.D.783 COMPLIANCE WITH STUDY MEDICATION IN A RANDOMIZED TRIAL OF ZIDOVUDINE (ACTG 019)

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Objective: To assess the extent of non-adherence to study medication in a randomized trial of ZDV, by evaluation of ZDV serum levels and mean corpuscular volume (MCV).
Methods: A total of 1338 asymptomatic HIV-infected individuals with less than 500 CD4+ counts at entry were randomized to placebo, low- (100mg q4h) and high- (300mg q4h) dose ZDV, and followed for a mean duration of 55 weeks. ZDV assays were performed on 796 randomly selected individuals at random times over their follow-up period. Compliance rates were estimated after applying correction factors to adjust for false-positivity and false-negativity. MCV levels were obtained bimonthly for 16 weeks and monthly thereafter, and trends and patterns in MCV levels over time determined for the three treatment groups.
Results: Estimates using ZDV levels suggest that compliance rates, virtually identical in the two ZDV groups, were close to 76% and remained constant over the study period. ZDV was detected in less than 10% of individuals in the placebo group. The pattern of MCV values in placebo recipients was highly distinct from those of ZDV recipients. While the mean MCV level of the placebo group centered around 89fL and were unchanged over the study period, those of the ZDV groups rose to approximately 110fL after 20 weeks of therapy. Overall only 7% of placebo MCVs exceeded 95fL while 8% of ZDV-treated MCVs were below 95fL.
Conclusions: These figures show a clear difference between the placebo and treated groups in the proportions of patients taking ZDV. Thus is of considerable importance for interpretation of the primary results of this study which concerns the therapeutic effects of ZDV in asymptomatic HIV-infected patients.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.784 A CANADIAN PROGRAM FOR EMERGENCY DISTRIBUTION OF 2'-3'-DIDEOXYINOSINE (DDI) TO AIDS/ARC PATIENTS INTOLERANT OR RESISTANT TO AZT (ZIDOVUDINE)

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Objective: In order to provide ddI to Canadian AIDS/ARC patients displaying intolerance or resistance to AZT, an emergency drug release program was established.
Methods: Calls from physicians were screened for eligibility and essential data entered into a mainframe database. Physicians of eligible patients were sent registration kits. Returned entry forms were reviewed and vital information was faxed to the Health Protection Branch. Upon receipt of federal authorization, a 30-day supply of ddI was shipped. Adverse events reported during treatment with ddI were transmitted to health authorities.
Results: This program enrolled 384 AIDS/ARC patients from Sept 22-Dec 31/89, at an average rate of 27 new patients/week. A total of 116 physicians enrolled patients during that period. The most frequent reason for requesting ddI was hematological intolerance to AZT. Over 50% of patients were enrolled in Ontario, (40% in Toronto). Montreal accounted for 18% of enrollment and Vancouver, 11%. The geographic distribution of requesting physicians closely paralleled that of patients. Only 6 patients were denied treatment after a positive screen.
Conclusion: This program efficiently provided open access to a promising anti-HIV investigational drug and may be used as a model for emergency release of other new agents.

S.D.785 SOCIODEMOGRAPHIC DIFFERENCES IN THE USE OF AEROSOL PENTAMIDINE FOR SECONDARY PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP)

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Objective: To determine whether use of aerosol pentamidine (AP) as secondary prophylaxis for PCP varies by race, gender, intravenous drug use (IVDU), or insurance status. Methods: Our sample included 362 persons from 6 US cities reporting an episode of PCP who participated in the Robert Wood Johnson survey of AIDS patients between 11/88 and 5/89. Respondents using trimethoprim-sulfamethoxazole were excluded from these analyses. Chi-square statistics were used to test for differences in the crude odds of AP use. Adjusted odds ratios were calculated using a logit model including race, IV drug use, gender, insurance status and months since diagnosis as independent variables. Results: The proportion of patients using AP were: 72% males, 30% females; 75% white, 47% non-whites; 50% IVDUs, 76% non-IVDUs (all $p<.001$). Controlling for covariates, males were 3.6 times as likely to report AP use as females ($p=.005$); whites were 3 times as likely as non-whites ($p<.001$); non-IVDUs were 2.8 times as likely as IVDUs ($p<.001$). Insurance and months since diagnosis did not affect the likelihood of using AP. Similar effects were observed when the sample was limited to respondents interviewed after the Food and Drug Administration approved AP as an "Investigational New Drug." Conclusion: Race, gender and IV drug use affect the likelihood of using AP after an episode of PCP. Future programs designed to equitably deliver this highly effective treatment need to eliminate these differences.

S.D.786 WHEN SAFETY NETS FAIL: A UNIQUE, GUERRILLA PROGRAM TO PROVIDE AEROSOL PENTAMIDINE TO INDIGENT POPULATIONS -- THE PWA (PEOPLE WITH AIDS) HEALTH GROUP AS MODEL

Wilkinson, Steven D.*; Hodel, Derek*.

Objective: To examine the broad policy ramifications of an unorthodox program developed by the PWA Health Group, which flagrantly circumvents ordinary drug delivery mechanisms in order to increase access to PCP (pneumocystis carinii pneumonia) prophylaxis with aerosol pentamidine, in populations with resources insufficient to otherwise support such therapy.
Methods: The PWA Health Group's Pentamidine Project is documented and analyzed in detail via case study, using personal interviews, analysis of demographic data, questionnaires, and examination of mainstream and alternative media reports.
Results: The PWA Health Group is a community-based, "underground buyers' club" in New York City. The group's Pentamidine Project was implemented in September 1989, with dual objectives: 1) to assist indigent clients in importing personal use supplies of pentamidine from England, where a reasonable price is maintained through governmental price controls, and 2) to focus attention on the impact of exorbitant prescription drug pricing upon the quality of healthcare received by indigent populations in the United States. While several hundred clients utilize the program nationwide, subsequent widespread media attention has resulted in congressional hearings, pro-regulation editorials, and a series of ongoing bilateral negotiations between the activist community and Lyphomed, Inc., the United States manufacturer of pentamidine.
Conclusion: The PWA Health Group has developed a bipartite political action model wherein direct treatment access is fused with political protest, leading to an alternating series of confrontations and negotiations involving the AIDS activist/advocacy community, the federal regulatory bureaucracy and the pharmaceutical industry. This model has the potential of favorably impacting upon prescription drug pricing, both in the immediate future and the long term.

S.D.787 RECRUITMENT INTO A PLACEBO-CONTROLLED TRIAL OF ZIDOVUDINE IN ASYMPTOMATIC HIV INFECTION AND EFFECT OF CHANGING CLINICAL PRACTICE ON PARTICIPATION

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OBJECTIVE: To describe eligible patient's reasons for and against joining a placebo-controlled trial (Concorde I) and the effect of increasing open-label zidovudine treatment in asymptomatic patients on participation in the trial.

METHOD: Records were kept after initial interviews with patients expressing interest in the trial, and a formal questionnaire was given to participants before and after consultations where the option of open-labelled zidovudine treatment was discussed with them.

RESULTS: 212 of 246 patients were eligible to join the trial after screening. 54% (or 111 of 206 patients who had time to consider the trial over one month) refused to participate or failed to express interest in the trial again. The commonest reasons were fears of adverse drug reactions (67%) and unacceptability of being randomised to placebo (30%). 46% (or 95 of 206) joined the trial. 73 patients remained in the trial after excluding those with progression to HIV disease, early withdrawal or default. 34 of 73 (47%) had CD4 lymphocyte counts of less than 500 x 10 /l on entry or during the trial. 10 of 34 (29%) opted to receive open-label zidovudine, rather than continue in the study, after a change in prescribing policy.

CONCLUSION: There has not been a major movement to receive zidovudine treatment in a well informed group of asymptomatic HIV-infected patients. Patients strongly desired more autonomy in deciding which treatment to receive and were more likely to request zidovudine treatment the lower their CD4 lymphocyte count.

S.D.788 POPULATION BASED ESTIMATES OF ZIDOVUDINE AND AEROSOL PENTAMIDINE USE IN SAN FRANCISCO: 1987-89

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Objective: To estimate use of zidovudine (AZT) from 1987 to 1989 and Aerosol Pentamidine (AP) in 1989 in San Francisco from two population based cohorts of HIV infected men.
Methods: Interview and laboratory data from the San Francisco Men's Health Study (AZT and AP) and the San Francisco General Hospital Cohort (AZT) were examined to determine AZT and AP use.
Results:

	% on AZT			% on AP
	1987	1988	1989	1989
AIDS (n=29-63)	35	49	71	55
ARC (n=57-166)	6	27	31	21
HEALTHY (n=159-599)	2	6	10	6

Among men without AIDS with less than 200 CD4 cells, AZT use was 11%, 52%, and 42% in 1987, 1988, 1989. AP use was 26% in 1989.
Conclusion: Using city surveillance data and the table above, we estimate that in 1989 in San Francisco 1690 men with AIDS were on AZT and 1309 men on AP. The number of men with advanced HIV disease NOT on antivirals or PCP prophylaxis suggests opportunity for further reduction of HIV morbidity.

S.D.789 ENROLLMENT IN PARALLEL TRACK STUDIES OF DIDEOXYINOSINE (ddI) vs. AIDS CLINICAL TREATMENT GROUP (ACTG) TRIALS AT SAN FRANCISCO GENERAL HOSPITAL, AN ACTG SITE.

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Objective: To evaluate the impact of parallel track accessibility on patient enrollment in ACTG ddI trials. To identify the reasons for patient participation in parallel track versus clinical trials.
Methods: Evaluation of pharmacy records of individuals at San Francisco General AIDS Clinic who are receiving ddI from any mechanism.
Results: Eleven subjects have been enrolled in the ACTG trials 116 and 117 at San Francisco General Hospital. This compares with 50 individuals enrolled to date using the parallel track mechanism.

ddI source	10/1989	11/1989	12/1989	1/1990	Total
Parallel Track	0	16	15	19	50
ACTG 116 and 117	0	3	5	3	11

Seven patients have stopped drug. One ACTG enrollee developed pancreatitis and seizures. Six parallel track enrollees have stopped drug for a variety of reasons: seizures, hypocalcemia, anxiety, death (before beginning ddI) and voluntary withdrawal (2).
Conclusions: Enrollment to date in ddI trials favors parallel track at a ratio of about 5:1. At this site there was no delay between initiation of ACTG studies and parallel track trials. Recruitment has been slow to the ACTG study in comparison to parallel track trials. Evaluation for the reasons of differing recruitment are ongoing.

S.D.790 THERAPEUTIC AND PROPHYLACTIC DRUG USE BY HOMOSEXUAL AND BISEXUAL MEN IN THREE U.S. CITIES

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Objective: To ascertain therapeutic and prophylactic use of various approved and non-approved drugs by homosexual/bisexual men in 3 U.S. cities.
Methods: Ongoing prospective study of well-characterized men initially enrolled in hepatitis B studies in 1978-1980 in San Francisco, Denver, and Chicago. Men were asked during interviews conducted in 1988 and 1989 if they had ever used many different therapeutic drugs.
Results: Preliminary data on rates of (ever) use by HIV-seropositive (HIV+) men of the four most commonly used drugs are presented below: zidovudine (AZT), pentamidine (PENT), acyclovir (ACY), and AL-721 (a non-approved drug).

Drug Used:	No. (%) of HIV+ Men Who Had Ever Used Drug in : San Francisco 1988 [N=162]	San Francisco 1989 [N=168]	Chicago 1988 [N=55]	Denver 1988 [N=114]
AZT	47 (29)	67 (40)	6 (11)	20 (18)
ACY	21 (13)	41 (24)	0 (0)	24 (21)
AL-721	7 (4)	5 (3)	0 (0)	4 (4)
PENT	-	36 (21)	-	-

In San Francisco, of 33 HIV+ men with very low T-helper cell counts (<200/mm^3), 24 (73%) had taken AZT, and 17 (52%) pentamidine as of 1989.
Conclusion: Among these men who may be eligible for therapy, many had not yet taken approved (but some had taken alternate) drugs for HIV infection.

S.D.791 ASSESSMENT OF DISCHARGE PLANNING REFERRAL TO NURSING HOMES FOR PEOPLE WITH AIDS AND HIV

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Objective: Survey hospital discharge planners to identify efforts to refer clients to nursing homes and to determine the responses of the facilities contacted; identify gaps in services, discharge planner practices, relationships between characteristics of clients, care systems, and outcomes. **Methods:** Discharge planners in hospitals with highest incidence of HIV in Chicago were contacted bi-monthly to provide information on PWAS who needed discharge from the hospitol with post-hospital continuing care needs. Questionnaire included demographic, diagnostic, care needed, placement information and days hospitalized beyond medical need. **Results:** In three month period, none of the 42 identified clients were admitted to any nursing home. A fifth of cases included referral to multiple facilities. Total placement contacts and admissions that did occur were in specialized AIDS residences. Patients were assessed as staying in hospital a medium of 8 days beyond acute care needs. **Conclusions:** Difficulties in placing PWAs in care facilities have financial and quality of life costs. Long-term care of PWAs must be a coordinated effort throughout the care continuum including governmental agencies, health care and social workers, and the long-term care industry.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.792

DIFFERENTIAL PATTERNS OF HEALTH SERVICES UTILIZATION BY RISK GROUP: EVIDENCE FROM A NATIONAL STUDY

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Objective: To assess the effect of social factors on hospital, emergency room and outpatient physician use among persons with HIV infection served in public hospitals and private practice settings in nine communities across the country.
Methods: We asked 1031 clients of community based or hospital based case management programs about their health services in that last three months. Bivariate and multivariate analyses were performed relating service use to risk group, having AIDS vs. other HIV+ state, sex, race, education, living alone, private insurance, locus of medical care (office vs. clinic), physical performance status and the overall frequency of experiencing 10 different symptoms.
Results: Respondents reported an average of 7.46 outpatient physician/clinic visits; 35.9% reported an ER visit and 29.9% had been hospitalized. Gay men averaged 8.16 (SE=.29) outpatient visits vs. 5.89 (SE=.48) for intravenous drug users and 5.49 for women (SE=.60). IVDUs were more likely to use an ER (OR 2.72; 95% CI=1.97-3.76) than were gay men (OR 1.73; 1.32-2.27). Similarily, IVDUs, non-whites and women had higher hospitalization rates (all p .01). Performance status and symptom severity were both related to the service use measures. Controlling for these factors, gay men had lower outpatient MD use, while IVDUs had higher ER and inpatient use.
Conclusion: Our data reveal a substitution effect, with gay white males seeking physicians during clinic visits while minority IVDUs use ERs. Higher use of inpatient settings among IVDUs appears to be related to their lower level of social support viz. gay/bisexual patients.

S.D.793

HEALTH CARE UTILIZATION BY HIV-AT-RISK INFANTS

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Objective: To determine whether infants of HIV seropositive women are higher utilizers of health care than infants of women who use intravenous drugs (IVDUs) but are HIV seronegative.
Methods: The Intensive Primary Care (IPC) Program provides comprehensive pediatric care for newborns of IVDUs, emphasizing tracking and outreach to keep these children in care. The records of outpatient visits and inpatient hospital admissions were reviewed for all infants enrolled during the first 18 months of the project.
Results: The 100 enrolled infants have the following characteristics: maternal HIV status (51+,49-); age (0-6months:35, 6-12m:42, 12-18m:23); sex (48M,52F); race (92B,8W). Ninety-two infants made 655 outpatient visits (range 1-26 visits/child). Of 65 infants older than 6 months, 26 (40%) made 7-15 visits each during those first six months. Visit frequency was similar between HIV+ and HIV- groups. Twenty children (14 HIV+, 6 HIV-) accounted for 28 hospitalizations (range 1-4/child). The 4 infants with definitive evidence of HIV infection accounted for 7 of the hospitalizations; 4 admissions occurred prior to the HIV diagnosis.
Conclusion: Infants of IVDUs make frequent health care visits during the first six months of life, regardless of maternal HIV status. However, infants of HIV+ mothers are much more likely to require hospital admission, often before their HIV status is definitively determined. This supports the belief that infants of HIV+ mothers deserve close monitoring early in life to assure them access to appropriate health care.

S.D.794

DOES FAMILIARITY BREED EFFECTIVENESS IN THE TREATMENT OF AIDS PATIENTS? EVIDENCE FROM A NATIONAL SAMPLE OF U.S. HOSPITALS

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Objective: To answer 3 questions: (1) Do hospitals with better AIDS outcomes attract more patients (termed "selective referral")? (2) Are outcomes better in high-volume facilities, controlling for selective referral and casemix? (3) Do volume-outcome relationships vary by AIDS manifestation?

Methods: We use 2-stage least squares regression and Hausman specification tests to explore relationships between hospitals' AIDS familiarity (annual number of AIDS discharges) and risk-adjusted in-hospital mortality (the difference between a hospital's actual mortality rate and the rate expected on the basis of its AIDS casemix). Data are from 10,000+ AIDS hospitalizations identified from 6 million discharges in a nationally representative 10% sample of U.S. short-stay, nonspecialty hospitals in 1986-87.

Results: Annual AIDS caseloads observed in 200+ hospitals ranged from 1 to 1100+ discharges; actual mortality averaged 18.6% (range: 0-100%). Preliminary results provide no evidence of selective referral (p=.32). A 1% increase in total AIDS volume led to a 0.2% - 2.4% improvement in risk-adjusted mortality (95% C.I.). Worse outcomes were found among hospitals with higher levels of minority AIDS discharges (p=.02) and those located in urban areas (p=.01).

Conclusion: There appears to be a strong causal link between the size of hospitals' AIDS caseloads and effectiveness in treating AIDS cases. However, our findings also indicate that familiarity and casemix are not sufficient to explain systematic differences in outcomes across hospitals.

S.D.795

QUALITY ASSESSMENT OF DAY-CARE HOSPITALIZATION IN PATIENTS WITH AIDS - A FIRST STEP -

Véronique FOURNIER. MD.*, Alexandra GIRAUD.MD. MPH*

We present the results of the first step-descriptive- of a quality assessment study of 10 day-care settings for AIDS patients in the Assistance Publique -Hôpitaux de Paris (APP), a multi-hospital teaching center that includes 50 hospitals. Responses to a rapidly expanding demand have been very different in terms of medical organization and practices from one unit to another, as well as with usually known day-care management for other diseases. The first step of this multicentric approach was conducted by the Quality Assurance Unit of APP from March to June 1989. The objective was to describe the patient day-episods through an identical set of indicators, consensually selected by the work-group as being relevant to the perspective of the study. The unit of analysis is the patient-day episod. The indicators are : (i) epidemiologic : socio-demographic and clinical description of the patients and their disease ; (ii) qualitative : conditions of admission, of stay, of discharge, type and number of adverse events ; (iii) indicators of activity : description of diagnostic and therapeutic procedures. The study is of course anonymous. Twelve hundred and six patient-day episods, randomly selected, were analyzed. Results are presented and discussed with the perspective of designing clinical performance indicators, common to all the units.

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S.D.796 U.S. HOSPITALS WITH OVER 100 AIDS CASES

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Objective: To describe the characteristics of U.S. hospitals in which over 100 cases of AIDS (OHCA) were initially diagnosed.
Methods: We compared OHCA hospitals and other hospitals with respect to ownership and geographic location and examined associations between hospital characteristics and characteristics of persons who had been diagnosed with AIDS (PWAs) in OHCA hospitals. We used national CDC surveillance data on PWAs reported from 1981 through 1989 and data on hospital characteristics from the American Hospital Association (AHA) 1985 survey.
Results: Of 117,781 PWAs reported, 56% were diagnosed at OHCA hospitals, which represented <3% of the 7,102 hospitals in the AHA registry. Five states (New York, California, New Jersey, Texas, and Florida) accounted for 64% of PWAs and 65% of OHCA hospitals, but only 25% of other hospitals. The proportion of publicly owned hospitals was greater among OHCA hospitals (38%) than among hospitals with fewer cases (33%). Regarding PWAs diagnosed in OHCA hospitals, blacks and Hispanics constituted a higher proportion of those in Veterans Administration (VA) (63%) and state or municipal hospitals (62%) than in private hospitals (38%). Heterosexual intravenous drug users (IVDUs) also represented a higher proportion of PWAs in VA hospitals (43%) and state or municipal hospitals (32%) than in private hospitals (17%). Male homosexual non-IVDUs were a smaller proportion of PWAs in VA (40%) and state or municipal hospitals (45%) than in private hospitals (69%).
Conclusion: Most AIDS care has been concentrated in relatively few hospitals. In public hospitals, most PWAs are black or Hispanic and the proportion of IVDUs is greater than that in private hospitals.

S.D.797 IMPACT OF INSURANCE COVERAGE ON HEALTHCARE UTILIZATION FOR HIV-INFECTED PERSONS: RESULTS OF A SURVEY.

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Objective: The objective was to assess the impact of insurance coverage on the use of dental and physician services and hospitalizations in a one year period, by HIV-infected persons with and without AIDS.
Methods: A healthcare utilization survey was sent to HIV-infected persons with and without AIDS, as well as those at-risk for HIV infection. A sample of 800 participants in the Pittsburgh Multicenter AIDS Cohort Study (MACS) were surveyed, as well as about 1000 persons receiving services from health-care providers in southwestern Pennsylvania. Mantel Haenszel Chi-square test for trend was used to assess statistical significance.
Results: Overall, 32% of the surveys were returned (n=576). Respondents were categorized as follows: 14% AIDS (n=79); 16% ARC (n=92); 13% asymptomatic HIV positives (n=74); 41% HIV seronegative (n=237); and 16% (n=94) with unknown HIV status. HIV status of 381 respondents was validated by comparing survey responses to serological data from MACS. Of those men self-reporting as seropositive, 99% were true-positives; 97% of those men self-reporting HIV negative were truly negative. Regardless of insurance status, inpatient hospitalization was significantly associated with HIV symptomatology ($p<.001$). However, utilization of physician services were only related to HIV status among the insured ($p<.001$). Dental services utilization was inversely related to HIV status ($p<.001$), controlling for insurance status and dental problems.
Conclusion: Insurance coverage has a significant impact on the utilization of physician services but, does not appear to affect the use of traditional hospital services of the HIV-infected population. Regardless of having dental insurance, dental service utilization is inversely related to HIV status.

S.D.798 CHANGING PATTERNS OF HOSPITALIZATION OF HIV-INFECTED PATIENTS.

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Department of Infectious Diseases, Ospedali Riuniti, Bergamo, Italia.

Objective: To evaluate the patterns of hospitalization of HIV-infected patients from 1985 to 1989, in a department of infectious diseases serving an area with an estimated number of 5.000 HIV-infected patients.
Method: From 1985 admissions of HIV-infected patients to our department were monitored, with regard to diagnosis of admission, length of stay, rate of hospitalization for AIDS patients, and ratio non-AIDS/AIDS for hospitalized HIV-infected patients.
Results: All data refer to HIV-infected patients.

	1985	1986	1987	1988	1989
cumulative number of AIDS cases	4	14	50	100	165
number of admissions per year	60	76	136	220	204
average length of stay (days); all pts	17.2	17.9	27.6	15.5	11.8
average length of stay (days); non-AIDS pts	12.2	12.8	17.5	9.3	6.9
average length of stay (days); AIDS pts	87	37	40.4	21.4	14.2
rate of hospitalization for AIDS pts (%)	72.2	76.3	40	18.7	14.2
ratio non-AIDS/AIDS for in-pts (days of stay)	1.97	1.30	0.55	0.42	0.24
number of out-patients visits	180	914	1712	2658	3724

Conclusions: Improvements in diagnostic and therapeutic procedures and changing disease patterns surely concurred in determining the reported changes of the studied parameters. Nevertheless, in our opinion, a major role is played by the amelioration of the model of care delivery for HIV infected patients, with the increase of the out-patients activities and the development of integrated hospital and home services (they are discussed in details in another presentation). The results of the monitoring programme are adopted as a basis for continuing remodelling of the care delivery system.

S.D.799 A PSYCHOSOCIAL RESPONSE TO AIDS IN A LOW-PREVALENCE CITY: THE DEVELOPMENT OF AN INTERDISCIPLINARY TEAM.

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In 1988, a number of social workers, psychologists, nurses and sexologists who had been caring for HIV positive persons, their families and friends, within Quebec city institutions and community based organizations, got together and formed an interdisciplinary team.
Objectives: To reduce the isolation experienced within each of our respective agencies/to cooperate with one another in the response to clients' needs /to clarify areas of expertise and services available within each agency and to formulate a referal procedure accordingly/to eliminate duplication of services /to provide continuity in care/to ensure a common and shared approach to that care.
Method: Maximun participation: 15 professionnals/Monthly three hour long meetings are held where we discuss our personnal attitudes, as it concerns aids, issues raised by individual cases, and ways by which we can more fully coordinate our work.
Results: In one year, a hundred HIV positive people benefited from services provided by the agencies represented within this interdisciplinary team. The team met twelve times, and participants consider that the experience continues to be very enriching professionally as well as personally.
Conclusion: The creation of this team has allowed professionals to focus their efforts on the quality of care in a global approach with clients, and has reduced the competition existing between professions and agencies dealing with aids.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.800 THE UTILITY OF A DIRECT-MAIL SURVEY IN IDENTIFYING PHYSICIANS WILLING TO PROVIDE PRIMARY CARE FOR NEW PATIENTS WITH HIV

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Objective: To determine whether a direct-mail survey expands a community's base of physicians who are willing to provide primary care for patients infected with HIV.

Methods: In 1989, we conducted a direct-mail survey of county medical society members. We selected a subgroup of 7 physician specialities likely to involve primary care. Respondents were asked about experience caring for HIV infection, self-identified training needs, comfort in providing care for various HIV-affected subpopulations, and availability to accept new patients.

Results: Only 14% (171/1250) of physicians responded. Although 90% of the respondents were accepting new patients in general, only 59% (91/154) of these physicians were willing to accept referrals of HIV patients. Overall, the survey added 25 physicians to our community's base of primary care providers for patients with HIV, for an effective yield of 2% (25/1250). (In comparison, direct-mail commercial solicitations that yield a 2% response rate are customarily considered effective.)

Conclusion: Direct-mail surveys can effectively expand a community's base of physicians who are willing to provide primary care for patients infected with HIV.

S.D.801 FACTORS INFLUENCING PHYSICIANS' PARTICIPATION IN COMMUNITY-BASED CLINICAL TRIALS

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Objective: To better understand factors which may influence their participation in community-based clinical trials, the County Community Consortium (CCC) surveyed physicians in the San Francisco Bay Area .
Methods: The CCC sent an anonymous questionnaire to 188 physicians in January, 1990. Most physicians were primary care providers, but subspecialists were also included.
Results: 113 (60%) physicians responded to the survey. Most physicians' concerns regarding participation in clinical trials were pragmatic (e.g., not enough time, additional paperwork), rather than ideational (e.g, ethical concerns with randomization, role conflict). Eighty-five percent of respondents feared being overburdened with additional paperwork and 57% felt they could not manage the paperwork required to perform Phase I/II trials. Lack of time was identified by 85% as the most important barrier to participation and 87% considered research nurse support a prerequisite for participation. Eighty-five percent felt participation in clinical trials would not adversely affect the doctor-patient relationship and 84% did not feel there was a conflict between the role of the physician and the role of the scientist; 98% did not find it difficult to discuss issues of informed consent and 82% said they would not feel personally responsible if their patient were randomized to an ineffective or harmful drug.
Conclusion: By integrating clinical research into routine patient care, community-based clinical trials can increase the number of drugs being tested and expand access to experimental drugs for large numbers of people. These goals can be achieved, however, only with the participation of community physicians who agree to enroll eligible patients and to adhere to the requirements of the protocol(s). These results suggest that physicians will participate in community-based clinical trials if paperwork is minimized and research nursing support is provided. In contrast to data on community oncologists, issues such as role conflict or ethical concerns with randomization were not reported as barriers to participation in this physician population.

S.D.802 INITIAL EXPERIENCE WITH COMPREHENSIVE CASE MANAGEMENT FOR PERSONS WITH AIDS/HIV INFECTION AT COOK COUNTY HOSPITAL, CHICAGO

Kuehnert, Paul; * Dean B; ** Johnson K; ** O'Neil B; * Rodriquez R; * Sanchez C; ** Warren L; * Williamson M; * Cook County Hospital AIDS Prevention Service; ** Cook County Hospital Women and Children with AIDS Project.

Purpose: To report on comprehensive case management (CCM) for persons with HIV/AIDS at a large urban public hospital.
Method: Case management records from 1/1/89 - 9/30/89 were reviewed for demographic and service characteristic data.
Results: 163 persons received CCM, of whom 125 (76.7%) were men and 38 (23.3%) were women. 100 (61.3%) were black; 34 (20.8%) Hispanic; 25 (15.3%) white; and 4 (2.4%) other. 56 (34.4%) had AIDS, 13 (7.9%) symptomatic HIV (ARC), and 87 (53.4%) had HIV. All clients received CCM with psychosocial assessment and counseling. Persons with AIDS used more service types, most commonly shelter & home health care; & HIV+ persons - entitlements. Most client services addressed basic needs - shelter, food, transport, and money. Families with children have unique needs such as respite care and day care. Most difficult are multi-system illness, drug abuse, poverty, homelessness, and mental illness in families. 72 (44%) died.
Conclusions: CCM services are invaluable for public hospital clients with HIV and multiple service needs. Ongoing in-depth evaluation is warranted to determine optimal methods of organization and provision of CCM.

S.D.803 CASE MANAGEMENT OF FAMILIES WITH HIV-INFECTION

Goeren, William, Wade K, Rodriguez L. Mount Sinai Hospital, New York, NY, USA.

Objective: To contrast the case management of HIV-infected patients who do not have family members also HIV-infected with the case management of HIV-infected persons who do have one or more family members who are also HIV-infected.

Method: HIV-infected persons with affected family members were retrospectively studied through reviews of their charts, and the treatment plans were compared to those of HIV-infected persons without affected family members. The reviews addressed the medical, psychosocial and nursing care.

Results: Our analysis demonstrates that HIV-infected persons without affected family members received more organized, structured and collaborative treatment than HIV-infected persons with affected family members. HIV-infected persons with affected family members received care that was often fragmented, duplicated, episodic and unstructured. We found that the family dynamics and the needs of the family are more complex when more than one member has HIV infection: families were found in which caregivers became ill; others were found in which some members were subjects of clinical trials but other members with similar conditions were denied access to clinical trials, creating resentment, anxiety and seeking care elsewhere; families were found in which affected parents compromised their own care plan in order to maximise their role as primary care giver to their children.

Conclusions: Individual case management plans were found in our review to be inadequate. We believe that case discussions must address the entire family to create a comprehensive plan. The family case management model should include family treatment (medical, nursing and psychological) and family-focused clinical trials. More research is needed to document the special needs of families in which more than one member is HIV-infected. We also believe that health care providers need training in order to incorporate the famiy systems approach in the care of the HIV-infected family.

1124

S.D.804

SERVING HOPE, HUMOR AND COMPASSION: IMPLEMENTATION OF A WIDELY DIVERSE VOLUNTEER SUPPORT PROGRAM FOR PERSONS WITH AIDS/HIV INFECTION AT COOK COUNTY HOSPITAL, CHICAGO.

Boyd, Linda; Fuehnert, P.; Sherer, R., Cook County Hospital AIDS Prevention Service.

Purpose: To report on an innovative program of creative, comprehensive volunteer services for persons with HIV infection at a large urban hospital.

Method: Volunteer and patient records from 11/1/88 - 12/31/89 reviewed for demographic and service characteristic data.

Results: 114 volunteers were recruited and trained; they provided 5976.75 hours of service in 19 areas. Most vital services included inpatient visiting, transportation coordination, team leadership and legal aide. Most frequently requested services included massage and art therapy.

Capacity	%	Hours	Capacity	%	Hours
Team Ldr	3.0	179.30	Supt Mgr	13.0	776.97
Adm Asst	.5	29.88	Data Proc	.5	29.88
Edu/Spkr	1.0	59.76	Inpt Visitr	70.0	4183.72
Massage	1.5	29.88	Transp Coord	.5	29.88
Legal Aid	1.5	59.76	Clinic Compn	1.5	29.88
Telep Aid	.5	29.88	Event Coord	1.0	59.76
Donatn Coord	1.0	59.76	Art Therapy	.5	29.88
Crisis Intvn	.5	29.88	Pastrl Comp	1.0	59.76
ES Compn	.5	29.88	Hair Stylst	.5	29.88
Other	1.5	59.76	TOTAL	100.0 %	5976.75

Conclusions: A very broad based diverse volunteer program is invaluable for public hospital patients to even begin to address the complex, multi-faceted service needs of people with HIV infection. Dignity, hope and empowerment walk through the door with every volunteer -- to be shared liberally with the patient -- and our volunteer clowns are as important to our patients as our volunteer lawyers.

S.D.805

HEALTH CARE NEEDS OF ANTI-HIV POSITIVE PATIENTS: RESULTS OF A PRELIMINARY SURVEY.

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Objective: to better evaluate health care needs of HIV+ patients.
Methods: all subjects admitted to our Unit are asked to fill in an anonymous questionnaire with codified multiple choices. We refer about preliminary results of this survey concerning 60 symptomatic HIV+ subjects (levels 3-6 Walter Reed Foundation) and a similar control group (30 HIV-negative patients).
Results: no relevant difference of judgment is detectable in the 2 groups as far as nosocomial facilities, housing and courtesy of medical and nursing staff is concerned.
The majority in both groups prefers a double bed room, but the essential need of all subjects is to have closer contacts and be directly assisted by their own relatives. Among HIV+ patients, 67% (indipendently from health care quality -good for 75% of subjects-) ask doctors and nurses to spend more time with them; 70% judge useful the support given by volunteers that is irrilevant for the control group; 57% would like to have more detailed information about their illness and 10% judge insufficient explanations they received.
Conclusion: HIV+ patients have health care needs partially different from other patients and demand for a closer interpersonal relationship.

S.D.806

NATURAL HISTORY OF EARLY HIV INFECTION.

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OBJECTIVE: To assess further provision of services for patients infected with HIV in Edinburgh, by detailed admission analysis of the 409 HIV positive patients attending the City Hospital.
METHODS: A retrospective analysis of all HIV positive patients admitted to the City Hospital before November 1989.
RESULTS: During this period 576 admissions were recorded in 204 patients. Total number of days stay was 6830 days. Average length of admission was 12 days (range 1 - 155), inclusive of 61 day cases. Average daily census rose from 6.45 patients in January 1988 to 11.9 patients/day in January 1989.Only 34% of admissions were AIDS related. 70% of admissions were in injection drug users (IDUs).Twenty-eight admissions were for detoxification (only 35% of which were successful) and 34 injection related injuries were admitted. Chest infection was the commonest reason for admission (26% of cases). Unlike other UK centres where over 60% of chest problems are due to pneumocystis pneumonia (PCP) only 32% of our patients with chest problems had PCP. Admissions with bacterial chest infections were significantly more common in IDUs and 85% were opiated on admission. Pneumocystis(PC) was however the single most common organism identified (47 cases). Infection with PC was concomitant with a proven bacterial chest infection in 7 cases.
CONCLUSIONS: Within the first five years of HIV infection a significant number of admissions are not AIDS related, reinforcing the New York data that AIDS figures in IDUs under-report the problem. Provision of in-patient facilities must take this into account. Separate day care facilities would improve patient service.

S.D.807

Differential Access to Therapy May Explain AIDS Incidence Trends in Subgroups

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OBJECTIVE: To investigate whether the proposed effect of prophylactic therapy on AIDS incidence (Gail et. al., JAIDS, in press) varies by risk group, by race, or by geography.
METHODS: Expected counts were obtained for subgroups by backcalculation from consistently defined AIDS incidence counts through July 1987. Subgroups were identified with fewer observed (O) than expected (E) cases. Fractional deficits (E-O)/E were calculated. Methods described by Gail et. al. were used to estimate the minimum numbers of AIDS-free persons that would need to be treated in order to explain observed deficits on the basis of prophylactic therapy.
RESULTS: Significantly fewer than expected cases of AIDS were reported in risk groups presumed to have good access to health care - homosexual and bisexual men (gay men), homosexual iv drug users (gay IVDU's), hemophiliacs, and transfusion recipients. Conversely, no significant "AIDS deficits" were observed in risk groups presumed to have low access - IVDU's and heterosexuals. Among White gay men, fractional deficits were 34 percent in New York City, Los Angeles, and San Francisco, 26 percent in other urban metropolitan statistical areas (MSA's), and 20 percent in non-urban MSA's. Corresponding figures for Black gay men were 21 percent, 22 percent, and 9 percent. Therapy can entirely explain AIDS deficits in gay men even if only 4,300 to 4,800 at high risk of AIDS received therapy in the epicenters, with corresponding figures of 5,200 to 5,900 in other urban MSA's and 2,100 to 2,300 in non-urban MSA's.
CONCLUSION: Patterns of deficits are consistent with the hypothesis that prophylactic therapy has reduced AIDS incidence. If so, these data demonstrate that access to therapy is unevenly distributed. Broader access to currently available treatments, e.g. AZT, could further reduce short-term AIDS incidence, especially in underserved risk groups, minorities, and persons diagnosed outside major metropolitan areas. Favorable trends in AIDS incidence do not prove that the epidemic of HIV infection is over in gay men, or that national prevalence is lower than previously estimated.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.808 NATIONAL CAPACITY FOR PROVIDING T-LYMPHOCYTE IMMUNOPHENOTYPING IN SUPPORT OF EARLY HIV-1 INTERVENTION

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Objective: In response to U.S. Public Health Service recommendations that CD4+ cell counts be performed every 6 months for all HIV-infected persons, a national survey was conducted to assess the capacity of the nation's laboratories to provide this service.
Methods: In August 1989, 1044 laboratories responded to a survey conducted by the Centers for Disease Control Model Performance Evaluation Program.
Results: T-lymphocyte immunophenotyping (TLI) was performed by 294 (28%) laboratories. Of the remainder, 12% were interested in beginning TLI. TLI laboratories were located in 42 states. Most TLI laboratories (58%) were located in hospitals. Only 1% were public health laboratories. Thirty seven percent tested less than 11 samples per week. Fifty six percent reported that it took 6-24 weeks for flow cytometer operators to become proficient.
Conclusion: There appears to be capacity in the nation's laboratories to perform additional TLI testing, although training may be required to ensure proficiency. The paucity of TLI laboratories in the public sector may affect referral patterns from counseling and testing sites.

S.D.809 DEVELOPING A COMMUNITY BASED TREATMENT PROGRAM THAT MEETS THE NEEDS OF A POPULATION THAT HAS LARGE NUMBERS OF HOMELESS PATIENTS

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Objective: To design a cost effective program that is adaptable to varied settings for care delivery.
Method: Collaborative planning between an inner-city municipal hospital staff, Boston City Hospital, and employees of the State of Massachusetts Departments of Public Welfare. The patient care needs were represented by the care providers from the hospital and the program and reimbursement rates were developed by the state employees.
Results: A program was developed that allows a private vendor to collect a profitable rate for administering aerosolized Pentamidine. Patients are treated in an out-patient clinic, a neighborhood health clinic, their homes, and possibly from a mobile unit by the same vendor and at the same reimbursement rate.
Discussion: This program allows such flexibility that quality care can be delivered to this disenfranchized population. It includes people who are in unstable housing and shelters as well as more traditional community settings. The unfortunate aspect is that there was only one vendor willing to attempt this program even with the higher rate of reimbursement.
Conclusion: These patients are now receiving a recognized level of quality care with assured compliance. A program such as this should be considered in settings with a large population of disenfranchized and homeless.

S.D.810 PROJECT HOME CARE: A MODEL FOR HOME BASED AIDS CARE IN NORTH CAROLINA.

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OBJECTIVE:Project Home Care (PHC) is a prospective study examining the potential advantages of home care for persons with AIDS related complications (PWAs) in a low incidence widely geographically dispersed area.
METHODS: All PHC subjects received care at Duke between July,1988 and Nov., 1989, (total=59). Medical records of each PWA were reviewed for diagnoses, severity of illness, and treatment and complications. Each subject completed 4 psychosocial tests and a demographic data base. Each PWA was evaluated for need and availability of home health care (HHC), family/community support, and finances.
RESULTS: 59 PWAs were treated for PCP=20, CMV=16, cryptomeningitis=9, wasting=7, toxo=3, CNS lymphoma=2, histoplasmosis=1, candida esophagitis=1. Location of treatment as follows; inpt/outpt 31/59, outpt alone 21/59, inpt alone 7/59. Data will be presented on severity of illness, treatment and complications. No PWA died during treatment. Only 24/59 PWAs were located in the same county as Duke and 20 different locales were represented. 52 PWAs received home nursing; IV care=39, home health visits=7, private duty nursing=6. 37/59 lived with someone, 22 were assisted by friends and AIDS "buddies". Adequate insurance was essential; 4 PWA's had no insurance. PWAs ranked fear of the unknown(67%) hospitalization(47%) as their greatest fears.
CONCLUSIONS: Safe outpatient care for PWAs with complex AIDS illnesses and demanding treatment programs is possible even in a widely dispersed area. PHC provides a model for such care. The essential components include third party payors,availability of HHC providers, and a cohabitating or visiting person. Public health policy and home health planning should incorporate these needs.

S.D.811 WHO USES AN AIDS CLINIC: PATIENT CHARACTERISTICS AND TREATMENT RELATED BEHAVIORS

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Objective: To characterize patient attitudes and behaviors in an HIV clinic.
Method: Fifty-three patients (47 males, 6 females) comprised the sample. Patients were given a comprehensive interview.
Results: Demographic information were as follows: 40% were black, 34% had post high school education, 73% were currently employed and 30% had private medical insurance. In terms of social support, 91% confided their HIV status to another person, and 77% feel that friends and relatives would aid in their care. Seventy-two percent informed sex partners about their HIV status. Surprisingly, 54% did not personally know an individual with AIDS. Concerning treatment and use of the clinic, 77% had no problem with transportation to the clinic, 41% cancelled appointments but 96% of those always rescheduled. Eighty-nine percent felt that drug treatments helped and 80% took medications as prescribed. Fifteen percent used other medicine or alternative treatments in addition to prescribed medications. Ninety-five percent made positive health changes (ie. exercise, diet and stress).
Conclusions: HIV clinics in public hospitals serve a vital role in treatment and follow-up. Patients appear motivated for change and desire to maintain their health status.

S.D.812

THE BENEFIT OF THE VISITING PHYSICIAN SERVICE TO A RESIDENTIAL DRUG TREATMENT FACILITY

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Introduction: Drug users (DU) are at high risk for HIV infection. A visiting physician(VP) made weekly visits to a residential facility to evaluate the HIV infected DU.
Objective: To evaluate the VP service to this facility.
Methods: Data analysis from the records of all DU at the facility was performed, and the impact of HIV status and medical management by VP assessed.
Results: Between 6/88 and 1/90, 113 of the 284 residents were seen by the VP. Of these, 82 were found to have possible HIV infection and HIV testing was recommended. Forty-one DU agreed to testing and 19(46%) were positive, 1 had equivocal results. Three patients were known to be HIV positive. Of these 23 patients, 4 graduated from the program and all continued medical follow up. Of the 14 who left the facility early, only 5 continued medical follow up. Of 284 enrolled patients, 40(14%) completed the program compared with 4 of 23(17%) HIV positive patients. The increased number of documented HIV positive patients resulted in the hiring of an HIV counsellor, and the creation of an HIV support group.
Conclusions: 1)A high percentage of patients in drug treatment facilities refuse HIV testing even when counselled to do so. 2) A significant number of patients tested in this facility were HIV positive. 3) HIV testing did not adversely affect the success rate of the patients in the program. 4)HIV infected patients who left the program early were noncompliant with follow up medical management.5) The presence of the VP resulted in an increased awareness of the needs of HIV infected patients and allowed medical management of HIV infected patients at the residential facility.

S.D.813

EMPLOYMENT STATUS OF MEN DIAGNOSED WITH AIDS IN THE BALTIMORE MACS.

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OBJECTIVE: To describe the change in employment status over time in men diagnosed with AIDS and to describe the characteristics of work situations which affect the ability to remain employed.
METHODS: Information on clinical status and employment situation was collected on a monthly basis from men diagnosed with AIDS who have been participants in the Baltimore MACS since 1984. Data were collected from self-reports based on telephone and personal interviews.
RESULTS: Of 50 men with AIDS followed from August through December 1989, 35 men self-reported current employment situations as follows:

MONTHS FOLLOWING DIAGNOSIS	CONTINUED FULLTIME	CEASED FULLTIME
0-6	6 (38%)	10 (62%)
7-12	5 (83%)	1 (17%)
>13	4 (31%)	9 (69%)

Characteristics described by some men as facilitating longer employment included flexible scheduling, computer work that could be done at home and changes to less physically demanding work.
CONCLUSION: These data suggest that as early as 0-6 months post diagnosis, a significant proportion of men with AIDS will cease fulltime employment due to limitations of illness. Loss of fulltime employment may lead to loss of health insurance and increased need for alternate sources of health care. Flexible work situations may be important in maintaining gainful employment and health care benefits.

S.D.814

MEDICAL SOCIAL CARE FOR FAMILY MEMBERS OF AIDS PATIENTS IN RIO DE JANEIRO, BRAZIL.

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* Gaffrée & Guinle University Hospital, University of Rio de Janeiro (UNI-RIO), BRAZIL.

Objective: To try to motivate family members of AIDS patients to fight against discrimination and to participate in AIDS public health politics in Rio de Janeiro, Brazil.
Methods: A multidisciplinary team including two social workers, two psychologists and one physician met weekly with family members of AIDS patients during 1989. These joint family meetings were held at the Gaffrée & Guinle University Hospital and the most important subjects discussed by the family members and health care workers were analyzed and selected.
Results: Of 44 joint conferences, 28 reports were analyzed. The mean number of family members present at the meetings was 10. Subjects preferentially discussed by family members were: 1. Modes of transmission and clinical course of AIDS; 2. Caretaking chores as well as physical and emotional distress caused by the patient at home; 3. Discrimination of patients in other public hospitals; 4. Other family member reaction; 5. Death; 6. Homosexuality. Subjects preferentially discussed by health care workers were: 1. Need of family unit/mobilization; 2. Information about illness and care for the patient at home; 3. Prevention and transmission; 4. Death, Need of the presence of a familiar for love and support; 5. Joint action of an Association of Family Members of AIDS pts.
Conclusion: Regardless our difficulties to care for AIDS patients - lack of beds, drugs and personnel - and our attempt to motivate family members to fight against discrimination, they were mostly concerned with their individual problems.

S.D.815

NURSE LOAD IN RELATION TO HOSPITALIZATION OF HIV POSITIVE PATIENTS

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Objective : to compare the nurse load in HIV hospitalized patients in accordance with their CDC stage versus hospitalized patients with other infectious diseases.
Method : the study was carried out among a population of 90 patients devided into 2 sample groups. The first consisted of 60 HIV seropositive patients, the second, 30 patients with another infectious disease. Evaluation was carried out in the first week of each hospital stay. For each patient, we focused on overall nurse care and the clinical index established by Karnofsky. The data corresponded to the average daily nurse load per patient.
Result : for HIV group, the daily nurse load was significantly higher than in the other group ($p = .01$). It increased according to the stage of the disease (table 1).

Diagnoses	Care	Diagnoses	Care*
HIV	268	ARS	140
Infectious Diseases	199	Opportunistic infections	178
		Pneumocystosis	240
		Neurological stage	319
* minute/day		Ultimate stage	590

There was a strong correlation between the daily nurse load and the Karnofsky index ($r = 0,832$; $p < .01$).
Conclusion : the nurse load was greater for HIV hospitalized patients than for other patients. It depended upon the stage of the disease and the clinical symptoms. Nurse care was of utmost importance for patients with neurological manifestations or those who were at a terminal stage. The follow up of these patients give an indication of the nurse load in a specialized team.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.816 WOMEN'S CLINIC: A FULL SERVICE CLINIC FOR WOMEN WITH HIV DISEASE

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OBJECTIVE: To demonstrate that outpatient care in an inner-city hospital prolongs life for women with HIV disease.
METHODS: A clinic designed to serve the needs of the inner-city woman has been established at University Hospital and provided care for 213 women in 1989. These women are screened for medical and gynecologic problems and have access to a nurse educator, social worker and psychologist on premises as well as to sub specialist consultation. The time from diagnosis to death was calculated in these clinic patients and compared with the time from diagnosis to death in women with HIV disease hospitalized in our facility who are not followed as outpatients.
RESULTS: There were 15 clinic deaths with the average time from diagnosis to death 70.4 weeks (range 5 to 196 weeks). There were 38 HIV related deaths in hospitalized non-clinic patients with the average time from diagnosis to death being 27.5 weeks (range 0 to 114 weeks).
CONCLUSION: These data suggest that patients followed in the outpatient setting live longer than non-clinic patients with, hopefully, a better quality of life. The full-service one-stop clinic encourages a healthy life-style and medical compliance in this underserved population. This clinic serves as a model of care for the woman with HIV disease and is one of the challenges in patient care in the 1990s.

S.D.817 THE ROLE OF A HOSPITAL BASED HOME CARE TEAM IN THE CARE OF PEOPLE WITH HIV DISEASE

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OBJECTIVE: To enable people with HIV infection to access existing community care structures in London, in co-operation with an acute hospital unit.
METHODS: A multi-disciplinary home support team complementing the role of primary carers was designed to provide comprehensive domicilliary care for people with HIV infection. All patients lived within the Greater London area and reasons for referral included medical nursing, socio-emotional and liaison with community resources.
RESULTS: An analysis of the 250 patients admitted to the programme within the first 18 months demonstrates the mean length of time over which input is provided is 5 months per patient. 80% had an involved primary care physician, 25% had a community nurse and 23% had a social worker. This input enabled 30% of those terminally ill to die at home (twice the national average).
CONCLUSION: This model of care may be adopted for use in large urbanised areas where community carers already exist but require education and support in order to care for individuals with HIV infection. Costing and individual acceptability remain unexplored areas.

S.D.818 EVOLUTION, ASSESSMENT AND COMPARISON OF NURSING CARE (NC) DELIVERED TO HIV AND NON HIV INFECTED (HIV + and HIV -) HOSPITALIZED PATIENTS IN AN AIDS REFERENCE CENTER.

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Objective : To assess the evolution and compare the structure and intensity of NC delivered to HIV + and HIV - hospitalized patients.
Methods : The type of NC - basic care (feeding, locomotion, mobilization, hygien, comfort), technic care (diagnosis and treatment), and educational care and their levels (score from I to V), were prospectively monitored every day, over a 6 months period in 1989-90, and compared to those previously presented at the Vth International Conference on AIDS (WBP 248).
Results :

INTENSITY OF NURSING CARE

		I	II	III	IV	V
HIV +	1988	1.0%	16.6%	30.9%	48.7%	2.8%
	1989	0.6%	20.4%	44.3%	23.1%	11.3%
HIV -	1988	1.1%	46.2%	32.3%	20.0%	0.4%
	1989	0.6%	18.6%	42.7%	27.7%	10.2%

STRUCTURE OF NURSING CARE

		BASIC	TECHNIC	EDUCATIONAL
HIV +	1988	26.5%	22.9%	50.6%
	1989	30.9%	39.2%	29.8%
HIV -	1988	29.3%	43.4%	27.3%
	1989	32.5%	42.3%	25.1%

The comparison with the results previously published showed an increase of the technic care and a reduction of the educational care delivered to HIV + patients, as the number of HIV + patients and inpatient days increased.
Conclusion : The type and levels of NC delivered to HIV + patients have been modified by the increase of the number of patients and inpatient days.

S.D.819 PSYCHOLOGICAL SUPPORT FOR HIV-INFECTED FEMALE PATIENTS IN COPING WITH CRITICAL LIFE-EVENTS IN GYNECOLOGY AND OBSTETRICS

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Objective: To describe major problems HIV-infected women have to cope with, and to present first psychological approaches.
Proceeding: Physician and psychologist work together in the guidance of patients, they offer information and give psychological support. Partners are invited to join the process of problem solving in early pregnancy. After a patient's decision is made a participation in a group of pregnant HIV-positive women is offered. Medical treatment is accompanied by long-term psychological guidance which is of particular importance to women after abortion.
*Results:*HIV-infected female patients often have to cope with several critical life-events: 1. the diagnosis of pregnancy and knowledge of HIV-infection at nearly the same time; 2. misinformation: frequently abortion and sterilization is the only consequence offered to them at their first medical contact; 3. decision whether a pregnancy should continue or be terminated; 4. hospitalization during abortion or delivery puts these patients under particular stress.
Conclusion: Availability of professional psychological long-term consultation is essential to support HIV-infected female patients in coping with severe problems in gynecological and obstetrical aspects.

S.D.820

DESIGN OF A DATABASE MANAGEMENT SYSTEM FOR AN HIV PROPHYLAXIS PROGRAM

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Objective: To design a database management system for the New Jersey HIV Treatment Assessment Program (TAP), capturing relevant information about the clients and their treatment so that this State designed HIV prophylaxis program can be properly evaluated. Questions needing answers included identification of population reached, referral sources of clients, responses to various medical regimens, behavior changes effected by prevention messages, service needs met and unmet. Methods: A set of data collection forms was developed to allow for the systematic collection of data on each service regimen provided to TAP clients: case management intake and follow-up, medical intake, medical progress, medication and laboratory flowcharts, can client characteristics and behavior. A computer program was designed and created to facilitate data entry and data analysis. The TAP data system is a menu-driven microcomputer system whice can be modified as the TAP Project evolves. It was designed to include extensive help screens, linking of forms, file transport capabilities, and report generation capabilities. Initial implementation of the TAP data system occurred in Jersey City, which has one of the highest AIDS incidence rates in the nation. Results: All forms used in data collection will be displayed and systems for entry and analysis will be demonstrated. Conclusion: The TAP data system has been designed and tested to meet the need of evaluating the unique TAP effort to provide the full spectrum of health care based in an ambulatory care unit. As a result of its success the TAP data system is being implemented at 4 other TAP sites throughout the state and will serve as a model for other health agencies implementing HIV prophylactic treatment.

S.D.821

USE OF TELEPHONE HOT-LINES IN COUNSELING IN LATIN AMERICA AND CARIBBEAN

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Objective: To investigate the types of questions asked through HIV hot lines in Latin America and the Caribbean and to assess the amount of counseling carried out by telephone.
Methods: A short questionnaire was mailed to 32 Caribbean and Latin American countries to assess the validity of telephone counseling in the countries. Questions related to the existence of an operational hot line dedicated to aIDS inquiries, the number of calls received daily, the nature of these calls, the personalization of education and counseling to anonymous callers, the background and training of counselors, the self-identification of callers to a specific group with risky behavior, the recommendations for testing, the participation of NGOs in hot line operation and training, the referral and follow-up services offered by institutions, the international and regional cooperation received in each country, and other pertinent questions.
Results: Twenty of the 32 countries surveyed had an operating hot line mostly in urban areas. The number of calls received daily ranged from 2 to 30, with an average of 8 per day. Over half the countries replying they did not have a hot line had plans to have one installed. Except in large cities where actual counseling was provided over the telephone calls consisted mainly of AIDS information of a general nature. Findings were compared to those obtained at the Pan American Health Organization Health Promotion Unit where a hot line has been in operation since 1988.
Conclusions: The relatively limited use of the hot-line resource was indicative of a general malaise in seeking information, counseling, and referral services over the telephone and of the lack of trained operators to run the hot line. It also reflected the insufficient use of community volunteers to operate the hot lines, but generally was indicative of the unavailability of telephone in certain areas due to low socioeconomic conditions. Other factors included the relatively low priority attributed to AIDS, a fact also reflected in the lack of planning for hot lines in national medium terms plans.

S.D.822

ACTIVITIES OF THE AIDS HOTLINE IN ROSARIO CITY.ARGENTINA

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COPRES (Committee for the Prevention of Aids) Rioja1576.

AIM: To evaluate the activities concerning the information and education of the public on the subject of AIDS and its prevention, to act as a complement of the publicd demands to detect risk conducts and refer people to health centers with the proper medical, biochemical and psychological assistance.

[illegible]

RESULTS:

[illegible]

CONCLUSIONS: A large percentage of calls was observed in the months which had television support. Of these calls 40% corresponded to females, 54% to males and 6% sex was not recorded. The greater demand corresponded to mean age 25 years old. The massive response from the public rendered encouraging results. Nonetheless, our task would be more effective if the period of recession of calls were extended, coupled with the adequate human resources. The need of an AIDS HOTLINE appears because in Aids face to face communication is not always possible, the need of implementing a confidential telephone line as a valid and effective educational alternative and as the only means to enable the participation of the community as a whole.

S.D.823

PROBLEMS IN EVALUATING SUBJECT INCLUSION IN TREATMENT PROTOCOLS DUE TO VARIABILITY IN LABORATORY TITER STANDARDS

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Objective: To determine the feasibility and reliability of using 7 hospital laboratories for community-based research case finding of persons at risk of toxoplasmic encephalitis.
Method: A strategy was developed for accessing lab toxo test results and titers to identify pts. at risk of encephalitis. R&E Group MDs use sites including univ. teaching hosp., HMO, & nonprofit for pt. data collection & lab evaluation.
Results: Toxoplasmosis protocol inclusion criteria included a positive toxo titer at the 1:16 level. Lab audit of 1737 toxo serum tests run during 1989 at 1 of the practice sites was conducted. Confirmed positive results were found in 111 tests. Positive CSF toxo titers in 32 cases. Thirty-five male pts. were identified as potential study participants. The intention was to replicate audit at other group sites. Concern emerged when it was revealed the lab routinely used 1:64 as determination of positive (1:16 CSF). Rejected subjects would have to be retested if 1:16 titer was used. In discussion within the MD group, it emerged that levels of titer positivity varied between all sites.
Conclusions: Immediate implication is that variability between lab standards for titer positivity may significantly impact on identification of potential research subjects. When investigators commit to recruitment of a given no. of subjects, they must be aware of potential differences between sites providing lab data. The study explores how lab standards in 7 hospitals can be coordinated to meet common patient identification goals.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Models of Care Delivery

S.D.824 FIVE YEAR AIDS SERVICES PLANNING IN AUSTRALIA

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Objective: To develop a comprehensive state-wide 5 year strategic plan for meeting the health care service needs of people with HIV/AIDS. **Method**: A planning team addressed the following: analysis of epidemiological and utilisation data (including projections and scenario analysis); hospital services (scatter bed versus cluster, day care, discharge planning); institutional services (intermediary care, nursing home, hostels); community based services (home care, STD clinics, general practitioners); palliative care (institutional and community); mental health services (neuropsychological assessment, rights of clients, management of long term patients); psychosocial support (testing and counselling); services for IVDU (methadone, crisis housing, pain management); health workforce issues (range, numbers, training, support mechanisms); minimal level requirements in lower prevalence regions; prison medical services; identifying health service research needs (cost implications of different models of care); resource implications; establishing performance indicators. This service planning was achieved by extensive consultation with service providers and consumers, combined with epidemiological and utilization data, literature review and a patient satisfaction survey. **Results**: Strategies, policies and guidelines have been developed to ensure that service delivery enhances quality of life and is responsive to the medical and psychosocial needs of clients, while being cost effective. Mechanisms have been put in place to minimise the use of inappropriate specialised acute inpatient care. Increased emphasis has been placed on community and ambulatory care models. Coordination within the extended health system has been developed and strengthened to ensure a continuum of care. **Conclusion**: This approach to long term service planning will ensure that care provided to people with HIV/AIDS is of high standard, coordinated and responsive.

S.D.825 A COMPREHENSIVE MODEL OF CARE DELIVERY FOR HIV-INFECTED PERSONS

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Objective. To develop a pilot project for an integrated provincial system of care delivery for HIV-infected patients, in order to improve the quality of life and the quality of death of patients, and to reduce the rate of hospitalization and the cost/effectiveness ratio, maintaining high quality standards for diagnostic and therapeutic procedures.
Methods: The Bergamo province, in Northern Italy, has 907,801 inhabitants and an estimated number of 5,000 HIV-infected patients (80% intravenous drug users); 164 have developed AIDS by the end of 1989. After a preliminary trial, a 3-year experimental programme has recently been implemented, for integrated hospital and home services. A wide range of needs are considered, health care, emotional support, transportation, financial services, homemaking, housing (individual flats, guest houses, small hospices) are provided, free of charge, regardless of intravenous drug use (drug abuse treatment is available on request). These services are mainly based on the extension to HIV-infected patients of already-existing facilities, and are delivered by means of co-operation among an array of public and private institutions and volunteer organizations, co-ordinated on a central ("provincial working group") and local ("case management teams") level. A systematic assessment of aptitudes, knowledge and skills of social and health care workers, is part of the model, which also includes education programmes. The project is monitored to verify costs and effectiveness.
Results: After the preliminary trial, survival rates and incidence of major opportunistic infections are comparable with reports from other Italian and international centres, while the rate of hospitalization for patients with AIDS (14%) and the ratio nonAIDS/AIDS for hospitalized HIV-infected patients (0.24) are extremely low if compared with other Italian data.
Conclusions: The project has been designed to verify the feasibility and effectiveness of a model of care delivery based on multidisciplinary integrated hospital and home services and facilities; if full implementation confirms first results, the programme will be proposed as a model for HIV-infected patients care in regions with similar epidemiological features.

S.D.826 HOSPITAL AND HOSPICE CARE FOR PEOPLE WITH AIDS IN LATIUM, ITALY.

Orchi, Nicoletta* and the LATIUM AIDS Collaborative Group. *Regional Epidemiology Unit, Rome, Italy.

OBJECTIVE: To quantify inpatient care needs and to evaluate the experimentation of hospice care for people with AIDS (PWAs).
METHODS: Since 1985 AIDS is a mandatorily notifiable condition in Italy. Since Mar. 15, 1989 in the Latium Region 8 hospitals (the only ones allowed to admit PWAs) and 4 hospices for PWAs provide information, on daily bases, about admission, discharges and deaths of patients diagnosed with AIDS (CDC 1987). As of Dec. 31, 1989 the system recruited 565 PWAs (479 residents in Latium). For each institution the number of admissions, average length of stay (ALOS) and, for residents, incidence of admission (IOA) and the proportion of person-time experience spent in hospital were computed. Data will be completed with outpatient information.
RESULTS: During the period under study, 348 PWAs accounted for 614 hospital admissions with an ALOS of 36 days (ALOS is significantly longer in Roman hospitals than in those outside the metropolitan area); 25 PWAs accounted for 44 hospice admissions (ALOS=77 days). Of 479 resident PWAs, 311 (65%) have at least one hospital admission. IOA was 2.14 per year and person-time proportion spent in hospital was 0.19, i.e. 69 days per year. Significant heterogeneity of IOA among centers of diagnosis was observed.
CONCLUSION: It is necessary to plan further studies on the determinants of the observed differences. The number of hospital admissions should decrease when more outpatient clinics will be active. The small number of hospice admissions suggests the need to design and to implement appropriate home care programs.

S.D.827 IMPACT OF A COMPREHENSIVE SYSTEM OF CARE FOR AIDS PATIENTS IN SAN JUAN, PUERTO RICO

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Objective: To assess the effect of a comprehensive system of health care for AIDS patients on direct medical costs.
Methods: Medical records of all hospitalized patients were abstracted. A random sample of patients from 1987 (under the traditional system) and from 1988 (under the San Juan AIDS Institute) was selected, services coded and costs calculated in each category. A reliability study of hospitalization data coded, was performed. A comparison of all categories of expenditures under both systems was made.
Results: Reliability of coding of hospital days was high, while coding of ancillary services proved more difficult.This and other methodological issues are discussed. Average length of stay of inpatient episodes decreased from 21.5 days in 1987 to 11.3 in 1988, a decline of 47%, thereby reducing hospital costs. The share of inpatient care declined from 96% of the total budget in 1987 to 36% in 1988. Alternative forms of care such as ambulatory and home care grew considerably in 1988.
Conclusion: With the same budget, the comprehensive system of care provides care for more persons in a greater variety of settings.

1130

S.D.828 STRATEGIES TO COORDINATE DELIVERY OF NON-ACUTE CARE SERVICES FOR PERSONS WITH HIV INFECTION

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Objective: To identify innovative strategies and best practices for providing components of a comprehensive HIV/AIDS non-acute care system, and to determine service gaps and barriers to developing systems of HIV/AIDS non-acute care.
Methods: The literature was reviewed to identify the best practices, state-of-the-science, and service delivery issues relating to non-acute settings. Expert interviews were conducted with representatives of the public and private sector and the medical and academic community about the provision of HIV/AIDS social and health care services. Five site visits to innovative non-acute care programs were conducted in New York, California, Massachusetts, New Mexico, and Illinois.
Results: The most successful aspects of the programs visited will be presented, with descriptions of how to overcome the principal barriers and obtain financing. Particular attention is paid to service needs as related to disease progression and new treatment interventions.
Conclusion: Innovative systems of health care delivery, which provide non-acute care to persons with HIV infection, reduce the need for expensive inpatient care. Cost-effectiveness data on the types of non-acute care provided and the costs of providing it are currently inadequate.

S.D.829 PROVISION OF OUTPATIENT SERVICES TO PERSONS WITH AIDS BY U.S. HOSPITALS: 1985 THROUGH 1988

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Objective: The paper evaluates hospital-based outpatient service use by persons with AIDS, and the structure of these services in U.S. hospitals, utilizing information from the 1985, 1987, and 1988 U.S. Hospital AIDS Survey.
Methods: The U.S. Hospital AIDS Survey requests information on the provision and financing of care to persons with AIDS (PWAs), and other HIV disease, for the members of several national hospital associations. Hospitals are asked to report information on the volume of care they provide, the characteristics of the patient population, the structure of the services rendered, and the costs and financing of care. For this study, hospitals that reported treating at least one patient in each of the three years will be selected, and their responses to the outpatient variables are analyzed.
Results: This study shows that across the nation, hospitals reported an increase in the average number of outpatient visits per hospital, and more hospitals are able to track service use by their outpatients. For example, in 1985, only 23% of reporting hospitals track outpatient service use. By 1987, this percentage rose to 42%, and in 1988 the percentage was higher still. The study also shows that, for hospitals able to report inpatient and outpatient services, the proportion of patient days to outpatient visits declined, indicating a heavier reliance on outpatient care.
Conclusions: This study illustrates the large and growing importance of outpatient services in the overall care to PWAs, and is the first national evaluation of hospital-based outpatient care. This study forms the basis for ongoing evaluations of shifts in the locus of care for PWAs.

S.D.830 CLINICAL NEEDS OF PERSONS WITH HIV RELATED ILLNESS IN LONG TERM CARE SETTINGS

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Objective. To determine the frequency of diagnostic procedures and clinical treatments required by persons with HIV in skilled nursing facilities, staffing and service acquisition strategies.
Methods. A survey was conducted at three facilities that provide skilled nursing care to HIV/AIDS patients in the New York metropolitan area. Data describing procedures, treatments and services was collected through 40 patient chart review and onsite interviews with 15 clinicians and administrators.
Results. Frequency of the following procedures and treatments were determined: Ct scan, bronchoscopy, lumbar puncture, bone marrow biopsies, and thoracentesis. A series of recommendations were developed for skilled nursing facilities for persons with HIV/AIDS, based upon the number of beds and the accessibility of regional resources. Recommendations addressed: 1)essential onsite medical services, 2)appropriate nursing, rehabilitation and other staffing levels, 3)arrangements for specialized services and consults, 4) staff training, 5)transfer agreements with acute care facilities.
Conclusion. Skilled nursing facilities are appropriate settings for care for persons with HIV/AIDS. Researchers identified specific staff, clinical procedures and treatments that will be required onsite in all long term care facilities, that provide care to persons with HIV/AIDS. These services are more complex than geriatric long term care services. In addition services to be provided offsite are identified.

S.D.831 THE DNPHC: A MODEL FOR PROVIDING OUTPATIENT HIV CARE

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OBJECTIVE: The Denver Nursing Project in Human Caring (DNPHC) is evolving as an outpatient facility providing health care to individuals living with all forms of HIV disease. Referrals are made by three sponsoring hospitals. The DNPHC's mission is to meet previously unmet needs of HIV-positive individuals without duplicating available services in the community. Ongoing evaluation of the effectiveness of this model is being implemented.
METHODS: The DNPHC is based on the philosophy and science of human caring. Outpatient nursing care is provided to HIV-positive clients in three forms: a) educational programming; b) psychosocial support and therapy groups; and c) medical treatments such as nebulize pentamidine, intravenous fluids and medications, and transfusions. Health promotion and positive approaches to living with HIV infection are emphasized. Educational programs and ongoing, open-ended support groups are attended by clients and by their support systems. Outpatient medical support is provided on a scheduled basis.
RESULTS: Currently open only half-time, the DNPHC serves 150 clients. In 17 months of operation, 3300 visits have been made to the center. Transfusions have prevented 172 hospital days for clients; administration of 95 IV fluid and medication doses have prevented additional days. Support group attendance has totalled 664 contacts. Clients report great satisfaction with the services provided.
CONCLUSION: The DNPHC is a model for providing health care to HIV-positive individuals which is proving to be cost-effective and which may be useful in other geographic locations and disease entities. Ongoing evaluation of the DNPHC and similar centers will further indicate the cost-effectiveness of providing care using this model.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.832 A REGIONAL CENTER FOR EARLY MEDICAL AND PSYCHO-SOCIAL ASSESSMENT OF HIV-INFECTED PERSONS; THE MARYLAND/JOHNS HOPKINS DIAGNOSTIC EVALUATION UNIT (DEU).

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Objective: To review the experience of a regional center for initial comprehensive evaluation of patients with HIV infection.
Methods: Chart review of the first 364 new patients seen in the Maryland/Johns Hopkins DEU between 12/88 and 12/89.
Results: 65% of patients were Black, 33% white, 1% Hispanic; 27% were women. 32% were employed full-time. 65% had histories of substance use. 36% had a history of psychiatric treatment, and 15% reported a prior suicide attempt. Other results include:

Insurance:	32% private	45% Medicaid	21% none
CDC stage:	II:39%	III:22%	IV:39%
T4 count:	0-200:36%	200-500:32%	>500:22%

Significant differences between racial and sex groups were found on a variety of medical and socioeconomic parameters. The main needs identified were: primary medical care, housing, drug treatment, mental health services, assistance with entitlements.
Conclusions: The HIV-infected population presenting for evaluation and care is increasingly comprised of Blacks and women. A standardized regional approach to patient assessment is able to identify significant medical and social service needs.

S.D.833 COMMUNITY BASED AIDS PREVENTION PROJECT IN CIUDAD JUAREZ, MEXICO

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Objective: To develop and implement a community based model of AIDS and STD prevention in a community of commercial sex workers (CSWs) in Mexico.
Method: USAID/AIDSTECH/FHI is supporting an AIDS prevention project with the Mexican Federation of Private Family Planning Entities (FEMAP). Volunteer male and female CSWs are trained to promote and distribute condoms and educate their peers about prevention of AIDS and STDs. Innovative approaches were used to gain entrée into a community. Pre and post KAP questionnaires and service statistics are used to evaluate process and impact.
Results: During the first nine months of the project, over 40 peer educators have been trained and are distributing condoms to an average of 255 CSWs/month. Nearly 18,000 condoms have been distributed. Baseline KAP survey revealed that knowledge of AIDS was generally inadequate with nearly 60% of the respondents unable to identify any AIDS symptoms, 51% ignorant of currently available testing services and more than one half of the respondents unable to identify the three principle means of transmission of HIV. Condom demand is being met from sources including pharmacies (23%), the bars in which they work (37%), the MOH (30%) and FEMAP volunteer peer educators (10%). A more regular use of condoms is an anticipated project impact and follow-up survey is planned in March 1990 to measure impacts.
Conclusions: FEMAP model offers a viable means of reaching CSWs with AIDS and STD prevention messages.

S.D.834 STD and AIDS Control Programmes in developing countries A blueprint for programming, implementation and evaluation

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European Economic Community, AIDS Control Programme Developing Countries

The organisation of care, case detection and prevention of sexually transmitted diseases in developing countries received renewed attention due to the emergence of the latest sexually transmitted disease, AIDS and the worldwide attention to preventive measures against the disease.
In this context questions arise about disease control programmes versus integrated primary health care services. A blueprint to elaborate, implement, evaluate and cost national STD-AIDS control programmes has been elaborated by the AIDS control programme of the EEC for developing countries. Structures necessary for these programmes as well as major activities which are important to be part of those national STD programmes are proposed.
After a 2-year experience with 25 STD-AIDS control projects in developing countries, analysis is made about the major obstacles for programme design and implementation.
As analysis of the ressource implications (human and financial) for those programmes will be discussed with the use of existing projects. Sustainability, feasibility and impact will be analysed for a few examples where intervention is organised in specialised STD centers as well as where activities are integrated in primary health care facilities

S.D.835 BUDDY-PROGRAMMES IN THE NETHERLANDS.

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* Netherlands Institute of Mental Health, Utrecht (U), Netherlands.
** Jhr. Mr. J.A. Schorerstichting, Amsterdam (N-H), Netherlands.

OBJECTIVES: Evaluating buddy-care by **1)** Determining the financial situation, work area, target groups, selection and training program, etc. of all buddy programmes, and **2)** doing a longtitudinal study on 5 programmes (models), concerning **clients:** expectations and satisfaction **buddies:** motivation and expectations; the work itself; work-satisfaction; reasons to quit the buddy work, burn-out, stress and coping.
METHODS: Standardized questionnaires (e.g. SCL-90, Life events scale), and interviews.
PRELIMINARY RESULTS: **1)** Of the 18 operational buddy programmes (5 in preparation), the oldest and largest is the Schorerstichting in Amsterdam. This programme started in 1984 and is meant for homosexual men only. It counts 110 buddies and 150 clients which adds up to approximately 29,000 volunteer-hours a year. The smallest and most recent programme started in the autumn of '89 and has 8 trained buddies and 1 client. Another categorial programme, for IVDU's, counts 31 trained volunteers and 33 clients (november '89). About 80% of the clients of the non-categorial programmes are homosexual men. The programmes are financed by either local, provincial or national funds and private donations, but governement regulations on the financial responsibility for these programmes are lacking. **2)** The longtitudinal study started in January 1990.
At the conference results will be presented on the subject of stress, coping, and burn-out among volunteers.
CONCLUSIONS: The rapid development of buddy-programmes is an important contribution to better home care facilities; it thus contributes to a shorter stay in hospital. Buddy-care benefits both client and health care 'substitution' policy of the Dutch government.

S.D.836 RESIDENTIAL AIDS SHELTERS: CALIFORNIA'S PILOT PROGRAM TO PROVIDE GROUP RESIDENCES FOR PERSONS WITH AIDS AND ARC

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California Department of Health Services (CDHS), Sacramento, California, USA.

Objective: To help meet the housing and food needs of homeless persons with AIDS or ARC (PWA), California established a program of group residences statewide.
Methods: Effective January 1, 1989, the CDHS, Office of AIDS (OA) established 17 Residential AIDS Shelter (RAS) pilot projects statewide with a total bed capacity of 130 residents. Data collection and an independent study were performed to examine the safety and appropriateness of the RAS living environment for PWA.
Results: Data indicate that residents are predominantly gay white males, with some minorities, women and families being served; residents predominantly expressed satisfaction with the living arrangements; occupancy rates averaged over 70%; and reported annual operating costs averaged over $115,000, 60% of which was funded by the State.
Conclusions and Emerging Issues: In urban areas with large numbers of PWA, a clear need exists for group living arrangements for homeless PWA. RASs appear to serve as appropriate living environments for PWA who are linked to services by a nurse case managers, need no supervision by RAS staff, and need only intermittent home health care. Regular medical assessment of residents and ready access to home health care and acute care are necessary adjuncts to the RAS model of care. The RAS model is worth studying as a paradigm to meet a key segment of the long term needs of homeless PWA.

S.D.837 CRITERIA MANUAL FOR THE TREATMENT OF AIDS

Jacobs, John; Gold, J., et. al. Medical Criteria Committee, Professional Standards Review Council of America, Inc., New York, New York, U.S.A.

OBJECTIVE: To develop review criteria for the monitoring and evaluation of the quality of care delivered to AIDS patients; to provide guidelines for hospitals for the care of AIDS patients.
METHODS: Assembled a group of experts in the fields of infectious diseases, oncology, internal medicine, OB/GYN, psychiatry, neurology, dentistry, nursing and social work, all of whom actively cared for AIDS patients, to write specific sections of the manual. The group had a statewide representation and included hospitals which are Designated AIDS Care Centers as well as non-designated centers.
RESULTS: Production of a Criteria Manual in a looseleaf binder to provide for updating which covered the course and manifestations of HIV illness including clinical syndromes, infectious, neuroplastic, neurologic complications, psychiatric evaluation and treatment, ophthalmologic and dental care, criteria for the care of women as well as social work guidelines and ethical and legal responsibilities.
CONCLUSIONS: The manual is being used as a primary source document by hospitals, long term care, home care and community based organizations caring for patients with HIV illnesses. The wide state and national interest and demand for the criteria manual demonstrated the need for a concise, clinically competent compendium of AIDS treatment methods. That need was manifested by the distribution of Criteria Manuals to every house staff officer in many hospitals and to all health care personnel in the New York State Department of Corrections. The manual is in the third printing.

S.D.838 AN ADVERSE DRUG REACTION MONITORING SCHEME FOR HIV POSITIVE PATIENTS.

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OBJECTIVE: To create a montoring scheme to record and assess all potential adverse drug reactions (ADR) in HIV positive patients.
METHODS: A voluntary reporting scheme by doctors and nursing staff was coordinated by the AIDS pharmacist who followed up reports to determine temporal relationships between the adverse event and the drug. The pharmacist reported back to the staff and made an independent classificiation of the likelihood that the drug was involved in an ADR. Pharmacy records were searched to ascertain how many patients were taking a particular therapy at the time an ADR was reported. A synopsis of these findings was reported at regular research meetings.
RESULTS: Reporting patterns indicated that whilst there was a study baseline reporting level of 2 per week this increased to more than 10 per week for a month after the pharmacist presented each synopsis. Frequent ADR's were reported for a number of drugs. Four of 104 patients taking Fansidar developed the Stevens Johnson syndrome; 5 of 40 taking megestrol developed impotence and 4 of 55 patients receiving foscarnet developed penile ulceration. Unusual reports include a case of thrombocytopenia with pyrimethamine and severe renal toxicity with acyclovir.
CONCLUSION: To be successful, voluntary ADR reporting schemes require regular feedback to the doctor, both individually and in a group setting. It would seem that although common ADR's are not consistently reported, a voluntary scheme does provide a useful early warning system for little known side effects and quickly identifies ADR's of surprisingly high frequency.

S.D.839 QUALITY OF CARE FOR AIDS PATIENTS: DESCRIPTION AND IMPACT OF AN ENHANCED REVIEW PROCESS.

Shevach, Ilene; Wielk, C. and Eder, S., Professional Standards Review Council of America, Inc., New York, New York, U.S.A.

OBJECTIVE: To broaden the concept of "quality of care" in light of the evolution of new and integrative practice patterns in the AIDS Designated Centers in New York State in order to encompass standards for case management, informed consent, right of patients to receive treatment, and attention to needs of the patients' family and/or support persons.
METHODS: Chart review, conducted for both concurrent and retrospective cases, includes assessment of the role of the multi-disciplinary treatment team, the comprehensive care plan, the patients' response to treatment, nursing care, and documentation of specialty consults and patient consent. Another innovative aspect of this enhanced review process is the effort invested in constructive feedback to the provider which includes rendering advice, assistance, or technical information to hospital staff.
RESULTS: The impact of the review process may be demonstrated through a reduction in the proportion of reviewed cases with quality of care problems over the first three site visits. For eleven hospitals reviewed between April 1987 and June 1989, the first visit found 55.8% of cases with quality "issues", the second visit yielded 38.1% of cases with quality issues, while the third visit, saw a reduction in the proportion of cases with problems down to 11.7%.
CONCLUSION: The enhanced review process appears to lead to a reduction in the proportion of cases with less than optimal quality of care.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.840 A CROSS-INSTITUTIONAL MULTI-MODEL CRITERION FOR EVALUATING HIV PROGRAMS

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Mercy College, (Adjunct Professor in Epidemiology) N.Y., U.S.A.

OBJECTIVE: To produce a quantitative criterion for evaluating HIV programs in 7 types of institutions using 25 factors.
METHODS: 1. Relate 7 types of institutions (therapeutic community, methadone, prison, psychiatric, general hospital, shelter and homelessness) to high risk individuals.
2. Analyze the 7 institutions according to 5 social problem models (individual defect, social disorganization, value conflict, small group and labelling).
3. Describe 25 factors as a criterion for evaluating HIV programs (HIV seminars, HIV support groups, testing, etc.).
RESULTS: A grid is made correlating actual examples of each type of institution to the 25 factors. There is considerable variation in the HIV programs. For example, highest scores are obtained by therapeutic communities.
CONCLUSION: A quantitative criterion of 25 factors can be developed to evaluate HIV programs in a variety of institutions that contain high risk individuals. This can be a valuable tool to monitor programs, collect data and encourage agencies to improve their HIV program.

S.D.841 INDIVIDUAL AND INSTITUTIONAL MEASURES OF EFFICACY IN AN EARLY HIV THERAPUTIC INTERVENTION PROGRAM.

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*New Jersey State Department of Health, Trenton, N.J.; **Jersey City Medical Center, Jersey City, N.J., U.S.A.

Objective. To describe various measures that are being used to determine the efficacy associated with early theraputic intervention in HIV infected populations.
Methods. The Treatment Assessment Program (TAP) of the New Jersey Department of Health is a network of 5 regional medical centers providing early HIV diagnosis featuring CD4 testing, and intervention (antiviral or PCP prophylaxis). A computerized database on each client's clinical stage, diagnoses, drug regimens, diagnostic tests and service needs is a core feature of TAP. The use of this database along with existing statewide DRG based hospital discharge abstracts, allows the use of specific individual, hospital and system-wide measures to determine efficacy.
Results. We estimate, of the almost 400 clients now being followed 60 percent are on PCP prophylaxis and 80 percent on AZT. TAP will document any delay in disease progression, increase in survival, change in frequency of opportunistic infections (esp. PCP) and hospitalization, by stage (CDC classification) and by drug regimen compared to historical controls. Preliminary data from one hospital shows that up to 5-6 HIV related admissions are deferred per week, with corresponding decreases in the length of stay and cost savings for those admitted.
Conclusion. Early intervention, long-term follow-up and data gathering on HIV infected individuals will allow measurement of efficacy trends among individuals and hospitals based on common data elements.

S.D.842 AIDS AND THE HOSPITAL: A BETTER USE OF HOSPITAL RESOURCES

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OBJETIVE: To improve the use of resources through the training of a specialized nursing team to provide care for AIDS patients (82% heroin addicts) in a Infectious Diseases Unit.

METHODS: In February of 1988 a specialized unit was created in the hospital for the care of patients infected by HIV and with AIDS. They are attended by 3 doctors, 8 nurses, and 8 nursing auxiliaries. It co-ordinates with a home care team, the outpatient department and the day care hospital. 80% of the personnel are voluntary and were trained to deal with all aspects of patient care, to use diagnostic and therapeutic protocols, to rapidly identify the problems and needs of the patients ant to make hospital stays shorter and more efficient.

RESULTS: The setting up of this training programme has contributed to: 1) The provision of higher quality care. 2) The rationalization of the use of diagnostic tests. 3) The reduction of the conflicts which stem from the active drug addiction of patients. 4) The shortening of hospital stays.

CONCLUSIONS: The specialized training of nursing personnel contributes to the provision of a more humane care of higher quality, which furthermore reduces costs.

S.D.843 POST-HOSPITAL CARE FOR AIDS PATIENTS.

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University of Medicine and Dentistry of New Jersey, School of Osteopathic Medicine, Camden, New Jersey, USA.

Objectives: Determine discharge plans for AIDS patients, assess sources of delay in plans, develop profile of those receiving care and experiencing little delay in obtaining planned services.
Methods: Charts of patients discharged from 9 hospitals in NJ and Phila. between 3/88 and 1/90 were abstracted (N=306). Cases included if ICD-9 discharge diagnosis of AIDS, ARC, or index disease made. Due to 3 to 1 ratio of cases in north NJ and the other sites, oversampling in the south was used so that significant regional differences could be detected. Each admission for patients meeting criteria was abstracted so changing needs could be considered. Data on patients, social networks, plans made, delays encountered, and sources of delay abstracted. Correlations and logistic regressions were used for analysis.
Results: Significant relationships found between discharge plans and 4 variables (profession of planner, presence of outside caseworker, race, social network). First 3 variables alone predicted 75.69% of cases. Those with plans likely to be white, have caseworker and social worker or nurse as planner. Regional variations were found with 81.94% of northern cases and 74.69% of southern cases predicted. No relationships found due to sex, age, source of acquisition, or previous admissions or care. Delays predicted in 79.29% of cases by race, profession of planner and insurance with no regional variations. Primary reasons cited for delay were service shortage, discrimination or fear on part of provider, and patient ineligibility for desired service.
Conclusions: As AIDS patients live longer, more attention must be paid to planning for lon-term care. Necessary services, comprehensive insurance, outside casework services, and effective discharge planning must be provided.

S.D.844 CRITERIA MANUAL FOR THE STANDARDS OF NURSING CARE IN THE MANAGEMENT OF THE PATIENT WITH AN HIV RELATED ILLNESS

O'Brien, Joan; et al. Nursing Criteria Committee, Professional Standards Review Council of America, Inc., New York, New York, U.S.A.

OBJECTIVE: To develop nursing care standards that reflect the minimal acceptable level of care for patients with HIV infection, to provide intervention guidelines for nurses directed towards achieving desired patient outcomes.
METHODS: Committee of nurse specialists, subdivided into groups based on their areas of expertise to describe clinical manifestations of HIV infection, standards of care, nursing care plans and indicators. Each group focused on the presentation of opportunistic infections/neoplasms according to specific body systems. These include, neurological, respiratory, cardiac and gastrointestinal systems. Standards for psychiatric problems were also developed. The Committee had statewide representation from Designated AIDS Care Centers and non-designated centers.
RESULTS: Production of a Criteria Manual in a looseleaf binder to provide for appendices and updates which provide an index and description of HIV opportunistic infection/neoplasms for use by nurses. The nursing care component details standards, describes revising care plans and the anticipated patient outcomes for each of the involved body systems.
CONCLUSIONS: The complex and broad range of patient needs associated with HIV illness created a demand for the development of comprehensive yet widely accepted nursing care standards. Presented in a highly usable format, this manual has been requested by nurse educators, clinical specialists and staff nurses from clinics and hospitals in several states.

S.D.845 AN EXPERIMENT IN THE ANONYMOUS DISTRIBUTION OF AIDS-MEDICAMENTS IN SOUTHERN FRANCE

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Objective : French legislation requires that Zidovuline and Ganciclovir be distributed by regional hospitals. This distribution must be individually addressed and must allow the supervision necessary for this kind of treatment (control of doses and prescriptions). The aim of this work was to permit these operations while completely avoiding the creation of a nominal index of all the patients in the region.
Methods : Identity is replaced by an anonymity-number which results from a one-way encryption algorithme (a definitive and irreversible transformation). This algorithm needs no key : from a given identity, whoever does the coding, results the same code ; inversely it is impossible to go from code to identity.
Results : During 6 months of application, up to now, the management of this distribution has allowed us to maintain anonymity for the 740 patients treated. No peculiarity was observed in distribution. Analysis of the recorded data allows us to follow the trends in use of these medicaments which involve a very important budget (a total of $550,000 worth of antiviral medicaments over 6 months).
Conclusion : A minimal change in habits has ensured management of distribution while maintaining the confidentiality of data.

S.D.846 AN EDUCATIONAL PROGRAM ON SELF-CARE FOR AIDS IN THE NETHERLANDS

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Objectives : 1) To increase the knowledge about AIDS and AIDS-related problems among persons with AIDS (PWA's) and their partners. 2) To stimulate and enhance the quality of self-care by supplying quidelines and information on self-care techniques. Motives : a) The expressed need of PWA's to maintain maximum independency. b) The financial benefits of a reduction of days stayed in the hospital.
Methods : 1) Every PWA in Amsterdam (n=300) was given a self-care manual (m) for free through the hospital social services. The comprehensive manual (300 p., illustrated, costs $ 40) covers all aspects of AIDS-management at home. 2) At the time of distribution extensive counseling (35 min.) and during the following hospital visits constant referral to the m was provided. 3) All professional caregivers (profs) were educated about the goals of the m and given the option to buy it at production cost. 4) A central adress/phone nr. (5 days/week) for questions and information.
Results : The m was received with enthousiasm by PWA's, partners and profs. Effects : an increase in knowledge on AIDS and related issues and a marked intention to implement the self-care techniques. Accesory effects : increased self-confidence of PWA's, the availability of exactly the same information both for PWA's and the profs.
Conclusions/discussion : The succes leads to extension of the program over the rest of the Netherlands in 1990 and an investigation of how other European countries can benefit by it.

S.D.847 PERSONAL YET CONFIDENTIAL: USE OF HOTLINES TO DELIVER AIDS PREVENTION MESSAGES TO TARGETED AUDIENCES IN THE CARIBBEAN

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*AIDSCOM, Washington DC; **National AIDS Hotline of Trinidad & Tobago; ***CAREC, Trinidad & Tobago.

Objective: To determine acceptability of hotlines in Caribbean for providing confidential risk reduction counselling and for delivering personalized prevention messages.

Methods: A daily AIDS hotline service was established using trained volunteer operators to provide risk reduction information and prevention counseling. Operators tailor messages to callers'concerns. All hotline calls are conducted confidentially.

Results: The operation has revealed significant public need for information about HIV transmission to be provided confidentially and for prevention counselling. Data from January through June 1989 indicated most callers were male (61.8%), heterosexual (67%), 20-40 years old (72.5%), personally worried due to sexual transmission (77.6%), and wanted referrals for more counselling and for antibody testing (77.6%). 37 callers had AIDS/HIV. A total of 795 calls related to AIDS/HIV occurred in the six month period; 74 calls related to STDs and basic needs.

Conclusion: The AIDS hotline in Trinidad and Tobago has been accepted by the public, meeting a need for specific information and confidential counselling. To increase calls, AIDSCOM helped develop a promotion campaign. A pilot sub-regional hotline will be tested for use among several small countries in the Caribbean where cost-effectiveness and confidentiality are primary issues.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.848 CROSS CULTURAL ISSUES IN HIV/AIDS COUNSELLING

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Objective: To review methods of culturally adapted and acceptable psychosocial support through HIJV/AIDS counselling to motivate and sustain risk reduction, and limit psychosocial morbidity.
Problem: Counselling support services can be developed in national health and social service personnel resources. Training of staff from these sectors and from NGO's in the principles and processes of cross-cultural HIV/AIDS counselling represents an important part of WHO's Global Programme on AIDS. Problems must be overcome, however, before counselling will be accepted as an integral part of strategies to prevent transmission of AIDS, promote risk reduction, and provide psychosocial support. Counselling as a routine component of health and social services is relatively new even in highly industrialized countries. In other regions, it is unusual for counselling to be included as a part of on-going services and, in many cases, it is a new concept, especially where counselling is seen as an extra-familial activity. HIV/AIDS counselling, moreover, is predicated on a number of principles and values, including confidentiality and privileged communication and interpersonal relationships between counsellor and client, which may not be acceptable in some cultures. HIV/AIDS counselling also constitutes a potential strain on national health and social services; in less economically well-off countries, this strain is frequently a major obstacle to developing HIV/AIDS counselling programmes.
Conclusion: The processes of counselling need to be carefully assessed in the context of national and local cultures and resources. Without sacrificing counselling principles, alternative approaches need to be developed and tested. A number of such approaches have been identified and are discussed.

S.D.849 A BEREAVEMENT MODULE WITHIN THE AIDS CRISIS

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OBJECTIVE: To demonstrate that specific interventions can identify and facilitate bereavement among AIDS-affected populations.

METHOD: AIDS populations were targeted as needing bereavement assistance: caregivers, lovers, buddies/friends, families, PWAs and HIV positives. Two bereavement intervention strategies were offered to stafffs of AIDS agencies and hospices: 1-workshops on the grief related cognitive, affective, behavioural, physiological changes; 2-participants in the workshops who have identified themselves as "grieving" could join short-term, issue oriented, closed member bereavement groups. Extensive data on the relevance, salience of content and number of group sessions was gathered from questionnaires and interviews with members.

RESULTS: 1-an "AIDSlanguage" of grieving was constructed and is now spoken in the AIDS affected community; 2-bereavement modules are now developed for these two bereavement interventions enable individuals to discern and label troublesome responses which are normal to grief and bereavement.

CONCLUSION: AIDS caregivers and clients experience and focus upon inexplicable, incapacitating behaviours foreign to their personality. This project identified the need for an "AIDSlanguage" of grieving to discern and label AIDS grief responses, and provided the means to understand and manage the AIDS grief process. We recommend that agencies provide such a strong bereavement component to both staff and clients.

S.D.850 SHORT TERM INTERVENTION TO PROVIDE PSYCHOLOGICAL SUPPORT FOR HIV SEROPOSITIVE MALES IN MEXICO CITY: A CONCEPTUAL FRAMEWORK

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Objective: The intervention aims to provide elements to support modification of sexual habits in order to prevent HIV transmission to others, encourage health habits that prolong the asymptomatic period, and help participants communicate knowledge of HIV infection to partners, friends, relatives and school/work mates.
Methods: The intervention is offered to homosexual and bisexual men who visit the AIDS Information Center in Mexico City and are enrolled in a trial to evaluate an intensive vs. a regular 6 month intervention using a quasi-experimental design. The intensive intervention consists of 12 weekly sessions conducted by a psychologist.
Results: As a result of experience in psychotherapy groups for HIV infected individuals since 1987, an intensive HIV psychotherapeutic intervention was developed. The groups are made up of 8 patients, and the participants express and share feelings experienced after the diagnosis of their seropositivity. The major issues in the sessions are: impact of seropositivity, death, medical and psychological treatments and alternatives, expectations for the future, notification of family and partners, previous, current and future sex life, relationship with partner, and safe sex workshop. Participation facilitates each member's effort to arrive at acceptance of seropositivity. We have found that reactions include anguish, denial, repression, depression and avoidance.
Conclusion: It is expected that this intensive intervention helps HIV infected persons, to cope with AIDS.

S.D.851 EVALUATION OF THE AIDS-PROGRAMME OF THE SCHORER-STICHTING, CENTER FOR PSYCHOSOCIAL CARE FOR HOMOSEXUALS IN AMSTERDAM, THE NETHERLANDS

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** Netherlands Institute of Mental Health, Utrecht, Utrecht, The Netherlands.

OBJECTIVE: To evaluate a programme for individual and group treatment for homosexual men who are HIV-infected, their friends and their family.
METHODS: Describing the development of an AIDS-programme between 1984-1989 by analysis of medical records, registration-data and annual reports; Measuring the client-satisfaction by questionnaire (N=144; response=55%) and oral interviews (N=18).
RESULTS: In november 1989 the cumulative number of PWA's in the Netherlands is 1025, of which 54% (N=550) lives in Amsterdam and 80% (N=440) are homo/bisexual men. Since 1984, about 40% of the cumulative number of homosexual PWA's in Amsterdam have received treatment at the Schorerstichting. The clients can be divided in PWA's (40%), HIV-seropositives (30%), significant others (19%), worried well (11%). Client-satisfaction is very high (80%). As main reasons clients mentioned expertise on homosexuality and gay lifestyles. They expect to be treated differently at the Schorerstichting, compared to regular institutions for ambulatory mental health. That is, they expect more involvement, solidarity and empathy, and these expectations are met by the programme.
CONCLUSION: Dutch policy is to fit actual developments in the field of psychosocial AIDS-care into existing and prescribed structures. This study shows that for clients quality of care is not just evaluated in terms of its accessibility, but also by a perceived positive attitude towards homosexuality as an essential part of one's identity. And that's just what people seem to be missing in most regular institutes for psychosocial care.

S.D.852 IS AFRICAN CULTURE IN CONFLICT WITH THE SICK ROLE IN AIDS

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Critical discussions and observations are presented on the traditional role of the sick in an African Culture in view of the AIDS epidemic. The prons and cons of the African sick role is examined in that context: the challenges caused by AIDS affects the care the victims receive.

In sickness:

1. A patient is assisted as much as possible and sometimes over protected. The prognostic indicators are the macrofunctions of the body such as movements, appetite, activities and the progression of symptoms;
2. A patient is attended to all the time and as much as possible in the most accessible area of the dwelling-'the reception area' with little or no privacy;
3. Visitors and often relatives are entitled to know the details of the disease process. This is often described by an attendant female and an open discussion ensures, commonly in the presence of the silent listeners,the patient;
4. Certain categories of people; relatives and friends are expected or obliged to do certain acts e.g. pay visits regularly to the sick;
5. Certain decisions are expected to be taken for and on behalf of the patient such as treatment and diet;
6. A patient is expected to comply to the above expectations, with modifications depending on the levels of incapacities.

Clinical Ethics

S.D.853 THE PREVALENCE OF AIDS RELATED ETHICAL DILEMMAS

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Objective: To ascertain the prevalence of incidents involving an AIDS related ethical dilemma and the congruence between what is usually done with what the respondent thinks ought to be done.

Methods: Four 3 minute videotaped presentations of incidents involving an ethical dilemma were shown to volunteer participants attending a workshop on ethics at a national AIDS conference. Participants were asked to respond to the following questions: 1) To your knowledge has this happened in your community?; 2) What do you think is usually done in this situation in your community?; 3) What do you think should be done in this situation?

Results: The incident of greatest prevalence (89%) concerned workers' fears that a coworker might be HIV+, followed by an incident depicting a physician's refusal to make a home visit (55%). Least likely to have occurred was an incident involving placement of an HIV+ infant (36%). The least congruence between what is usually done and what "should" be done (85%) occurred in the workplace situation, followed by the physician incident (72%) and an episode involving a minister and confidentiality issues (69%).

Conclusion: The epidemiology of AIDS has a bearing on the nature of the AIDS related ethical dilemmas which confronted the participants in this study. A lack of congruence between how situations are customarily resolved and how these issues "should" be resolved creates dissonance and another source of stress for those involved. The prevalence of AIDS related ethical dilemmas highlights the need for public discourse and policy formulation.

S.D.854 NON-EFFECT OF A CHANGE IN STATE AIDS CONFIDENTIALITY LAW ON ENROLLMENT IN A CLINICAL RESEARCH STUDY.

McCormick, Wayne C. Clinical Scholars Program,
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Objective: During a prospective clinical research study involving hospitalized persons with AIDS, laws were passed in Washington State to protect the confidentiality of persons infected with HIV. I examined the effect of these laws on study enrollment.

Methods: Enrollment procedures were changed to comply with this legislation: in an additional step in the consent procedures, written consent was obtained to release HIV serostatus to the investigators before they could approach potential subjects to obtain consent to participate in the clinical research. Enrollment rates before and after legislation enactment were compared.

Results: Prior to enactment, 80 subjects enrolled of the 111 invited to participate. After enactment, 26 of 36 enrolled. Hence, the additional step did not produce a detectable difference in enrollment rates before and after legislation enactment (72% vs 72%: 80% power to detect a 20% difference, two-tailed alpha=.05). Patients were similar in age, diagnosis, and discharge disposition before and after legislation enactment.

Conclusions: Although new laws could potentially adversely affect the number and types of subjects in studies, I conclude that legislation designed to protect the confidentiality of persons with AIDS need not interfere with enrollment of subjects in clinical research despite an added step in the consent procedure involving "written consent to obtain written informed consent".

S.D.855 ETHICAL ISSUES FOR INSTITUTIONAL REVIEW BOARDS IN HIV-RELATED RESEARCH

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Objective: To identify and describe ethical issue areas with which institutional review boards (IRBs) confront in review of HIV-related research protocols.

Methods: IRBs are responsible for protection of human subjects in research by assessing risks and benefits, selection of subjects, and provision for appropriate monitoring and confidentiality measures. IRBs have reported on sensitive dilemmas in proposed HIV-related research which require careful risk/benefit analysis and decisions based on the principles of autonomy, beneficence and justice.

Results: IRBs have identified issues in the following areas: 1) Confidentiality: Social and psychological risks require more sophisticated and sensitive means of protection of privacy and consideration of the use of Federal certificates. 2) Informing individuals of their serostatus and under what conditions. 3) Partner notification responsibilities. 4) Protection of special populations: prisoners; pregnant women, fetuses and newborns where risks are unclear; children as wards of the state; persons using drugs illicitly; indigent persons with no access to treatment. 5) Obtaining voluntary consent and deciding on payments. 6) Relating research and access to care. 7) Testing in non-HIV protocols. 8) Vaccine research. 9) International research when protection standards differ. 10) Expanded access protocols where benefits and risks cannot be well-defined.

Conclusion: IRBs confront numerous new issues in review of HIV research. Approaches to resolving IRB dilemmas in these areas will be addressed.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.856 THE INFLUENCE OF HIV SEROPOSITIVITY ON CLINICAL DECISION-MAKING - AN ANALYSIS OF ETHICAL ISSUES

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Objective: This study is designed to examine the influence of HIV seropositivity or perceived HIV seropositivity on clinical decision-making for non-HIV related conditions.
Methods: Quantitative and qualitative studies were reviewed to determine documented alterations in clinical decision-making based on HIV status or perceived HIV status (i.e. membership in a "risk group").
Results: There is evidence that clinical decision-making is influenced by HIV seropositivity or perceived seropositivity in a number of clinical areas. For example, surveys indicate that cardiac surgery may be withheld from both adults and infants at risk for AIDS. Qualitative studies suggest that decisions regarding orthopedic surgery and obstetrical management have also been altered as a result of HIV status. This may occur because of perceived quality of life considerations for the patient, stigmatization of individuals at risk for AIDS, and/or concern about the risk of infection for the provider.
Conclusion: There is growing evidence that HIV seropositivity or perceived seropositivity may influence clinical decision-making and lead to the denial of appropriate care to patients. Decision-making about the aggressiveness of treatment needs to be examined using an ethical framework incorporating the principle of justice.

S.D.858 PHYSICIANS' ATTITUDES TOWARD ASSISTED SUICIDE IN AIDS

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Objective: To identify factors influencing attitudes and practices among San Francisco physicians toward assisted suicide in the context of AIDS.
Methods: A self-administered, anonymous questionnaire was completed by 69 members of the San Francisco County Community Consortium (CCC) and 86 randomly-sampled physicians. Chi-squares and t-tests were used to compare samples. Factor analytic techniques and correlational analyses were used to identify attitudinal and behavioral predictors of willingness to assist.
Results: Both groups expressed a reluctance to assist a person with AIDS to commit suicide upon initial request. However, when faced with an adamant request, CCC members were more willing to assist than the comparison group ($p < .05$). Across groups, significant correlations were found between willingness to assist and attitudinal variables such as, belief in humane ethics ($r=.53$, $p < .001$), belief that AIDS is a disease which requires special consideration ($r=.39$, $p < .001$), and belief in religious precepts ($r=-.39$, $p < .001$). Physician identification with the patient was positively correlated with willingness to assist in a patient's suicide ($p < .001$).
Conclusion: Treating patients with AIDS who request assistance in committing suicide poses an ethical dilemma for physicians. Certain factors such as identification with the patient may increase the likelihood of physicians' direct involvement in a suicide. Conflicts between an empathic desire to aid patients and legal/moral constraints may cause distress among these health care providers.

S.D.857 ORTHOPEDIC SURGEONS' EXPERIENCE WITH AND ATTITUDES ABOUT OPERATING ON HIV INFECTED PERSONS

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Objective: to study surgeons' experience examining and operating on HIV infected persons (HIVP), their attitudes about surgeons' ethical obligations to operate, rights to test, and risk of occupational infection.
Methods: in August, 1989 questionnaires were mailed to all orthopedic surgeons with practice addresses in New York, Los Angeles, San Francisco, Washington, Miami, Detroit, and Chicago. (Net sample=629.)
Results: after 2 follow-up mailings 388 (62%) responded: 181 (47%) reported having operated on (OPS) and an additional 89 (23%) having examined an HIVP during the past year. Twenty-nine surgeons had declined to operate on one or more HIVP; of these 16 also operated on HIVP. Five reported declining by choice for non-medical reasons.
Discussion: OPS were more likely to agree that surgeons are ethically obligated to operate on HIVP in emergencies ($p<.03$) or whenever it might affect quality of life ($p<.001$). OPS were also more likely to correctly compare the transmissibility of HIV to that of HepB ($p<.03$). Attitudes about rights to test, worry about occupational risk of AIDS and reports of additional work stress because of AIDS did not differ by operative experience.

Drugs and Vaccines: Testing and Regulations

S.D.859 DEVELOPMENT OF AN UNIQUE ADVERSE DRUG EVENT DATA COLLECTION AND MANAGEMENT SYSTEM FOR MULTICENTER AIDS CLINICAL TRIALS

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Objective: Design and implement an Adverse Drug Event (ADE) system for the NIAID AIDS multicentered clinical trials to meet regulatory requirements, support clinical monitoring and facilitate scientific analysis.
Method: For HIV infection, making a distinction between true adverse drug reactions and disease process is difficult. Often this assessment cannot be made at the time of the adverse event and requires a retrospective review of study data. For all NIAID AIDS trials, clinical data are entered in a main database. An Adverse Events (AE) file is created from all data potentially related to drug toxicity (physical exam abnormalities, intercurrent illnesses or death) and graded with a four level severity classification system and coded using NIAID modified ICD9 codes.
Results: The AE file is used to prepare routine regulatory reports, study analysis, cross protocol/drug trend analysis, special reports, patient and protocol summary reports which augment safety and clinical site monitoring.
Conclusion: The unique NIAID ADE system meets regulatory requirements and enhances study and disease analysis; provides for evaluation of adverse events in the context of multicenter clinical data; allows for comparison of adverse events by drug, protocol, or class of drug. This adds an important cross protocol perspective to our study of therapies for HIV infection.

S.D.860 CALIFORNIA'S PROGRAM TO PROMOTE PRIVATE INDUSTRY INVOLVEMENT IN HIV VACCINE RESEARCH AND DEVELOPMENT

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OBJECTIVES: To facilitate development of an HIV-1 vaccine by stimulating participation of California biotechnology manufacturers (CBM) in research and development (R&D) efforts, and; to design a multicomponent HIV vaccine development program that is capable of addressing relevant scientific, legal and ethical issues.
METHODS: Through legislation, institute: 1) An "AIDS Vaccine Research and Development Grant Program" and associated Fund, whereby CBM may compete for grants; 2) a mechanism and funds for subsidizing federal Food and Drug Administration (FDA) approved clinical trials of candidate HIV vaccine(s) developed by CBM; 3) an "AIDS Vaccine Guaranteed Purchase Fund"; 4) an "AIDS Vaccine Research and Development Advisory Committee" composed of the State's leading viral vaccine researchers and health program administrators; 5) an "AIDS Vaccine Victims Compensation Fund", and 6) an appointed "AIDS Vaccine Injury Compensation Policy Review Task Force."
RESULTS: Program components are in place and are administered by the California Department of Health Services. Three and a half million dollars have been awarded to two CBM for HIV vaccine R&D. An additional $1,798,000 will have been awarded by April 1990. No CBM has received FDA approval for clinical trials of an HIV vaccine. Components 1 and 2 include mechanisms by which State funds can be reimbursed; component 5 is self-supporting.
CONCLUSIONS: California has implemented a unique, integrated program which stimulates private sector participation in all stages of HIV-1 vaccine R&D, with the ultimate purpose of expediting HIV-1 vaccine development, clinical testing and marketing.

S.D.861 ETHICAL CONSIDERATIONS IN TESTING CANDIDATE HIV VACCINES

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Objective: Obstacles to vaccine development--the complexity of the virus, its pathogenesis, and the human immune response--also make it difficult to determine when any investigational vaccine satisfies ethical criteria for research use in human subjects. This study analyzes the major ethical problems presented in candidate HIV vaccine trials, including deciding which vaccines to test, choosing measures of vaccine effectiveness, identifying subject populations, balancing potential benefits and harms, conducting trials in developing countries, and the equitable distribution of any resulting vaccine.
Conclusions: Clinical trials of candidate HIV vaccines raise virtually all of the problems possible in testing investigational vaccines. Resolving them consistently with accepted ethical principles is likely to make the trials logistically more difficult, longer, and more expensive. Such trials also present special needs to protect subjects' confidentiality. These problems, however, are reasonably typical of vaccine trials. What is unique about HIV vaccine trials are the social risks (of discrimination, loss of housing, job, insurance, travel and social opportunities) that subjects may face, and the need for special counseling. Providing counseling will make trials even more expensive, but not impossible. Special attention to minimizing the risks should improve decisions about which candidate vaccines to test. In particular, a commitment to ethical vaccine trials should result in new ways to ensure that those in need of vaccine are able to obtain them on reasonable and affordable terms.

S.D.862 CANADA'S DRUG REGULATORY RESPONSE TO AIDS: PROGRESS IN 1989-90

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Objective: The AIDS epidemic has focused attention on new drug development of anti-virals, anti-parasitics and anti-infectives for a variety of previously rare organisms. To ensure that the Canadian regulatory procedures facilitate timely new drug development, the Drugs Directorate of the Health Protection Branch, Health and Welfare Canada, has recently implemented several important changes in policy and procedures.
Methods: These include:
1. The information of a new unit for the evaluation and regulation of anti-virals and AIDS related prescription medicines,
2. Implementation of an innovative system for fast tracking AIDS related therapies (a first for the Canadian Drug Regulatory System),
3. Increased communication with industry and health professionals, and
4. A public communications strategy for "breaking" news.

Results: These innovative efforts have resulted in:
1. Canada's first drug marketing approvals for AIDS related therapies,
2. increased timely access to investigational agents, and
3. a record number of approvals for investigational protocols for HIV related drugs in 1989-90.

Conclusions: The operational mandate of the HPB respecting AIDS related therapies is adapting to facilitate timely drug development while recognizing the need for early access to investigational therapies.

Health Care Worker Issues

S.D.863 The Association of Nurses in AIDS Care (ANAC)

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Objective: To describe the establishment of an international association of nurses in AIDS care.
Methods: In 1987 an international group of nurses formed an organization to promote professional development and to advocate for the health and rights of all affected by HIV. Organizational structure and a mission statement were developed: 1. create an effective network among nurses in AIDS care; 2. establish standards in AIDS nursing practice and education; 3. provide nursing leadership which addresses ethical, public health, social and legislative issues; and 4. foster an advocacy role for nurses in AIDS care. In conjunction with organizational goals, Position Statements addressing the issues of minimal risk; confidentiality and HIV infected nurses are being formulated. To foster professional growth and support networking, ANAC sponsored active recruitment of membership at the IV and V International Conferences on AIDS; organized annual nursing educational conferences; published the Journal of the Association of Nurses in AIDS Care (JANAC) and supported the formation of local chapters in San Francisco and New York City. These activities serve as communication links and resources to nurses currently involved or who will be involved in AIDS care.
Results: ANAC has successfully built an organization with national and international membership (N=736). Membership profile:

National membership-N=721	International members N=15	Males N=150
States represented N=44	Countries N=5	Females N=586

A survey illustrates membership\ qualifications which meet the physical, psychosocial, and emotional challenges in the prevention, treatment, and nursing care of persons with HIV infection

Inpatient settings (50%)	Outpatient settings (39%)	Research & education (11%)

Educational levels range from R.N. student to Ph.D.
Conclusion: Nurses working in AIDS care actively seek a professional organization to provide education and support in their practice.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.864 A SURGEON WITH AIDS -- LACK OF EVIDENCE OF TRANSMISSION TO PATIENTS

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Background: In January 1989, the news media in Nashville,Tennessee prominently reported the identity of a local surgeon who had been diagnosed recently with AIDS. Concern about the possibility of transmission of HIV during surgery persisted despite reassurances from health authorities. Therefore, HIV antibody testing was made available to the surgeon's former patients.
Methods and Results: We identified 2,160 patients on whom the surgeon had operated in the seven years prior to his diagnosis. Their names were compared with names in the Tennessee AIDS registry; no matches were found. Of these patients, 264 had already died; none had died of AIDS or other HIV-related disease. Of the 1,896 patients remaining, we were able to contact 1,652 and offer them free HIV antibody testing. Of these, 616 (37%) were tested. Only one patient was HIV antibody positive: he was a member of a known risk group for HIV infection (intravenous drug use) and was a client of prostitutes.
Conclusions: These results are reassuring and support recommendations that HIV-infected health care workers be assessed individually.

S.D.865 PWAS' ASSESSMENT OF NURSING CARE

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Objective: The purpose of the study was to assess PWAs' perceptions of nursing care and nurses as providers of care.
Methods: An anonymous response questionnaire was distributed through PWA organizations in 3 states. The questionnaires assessed satisfaction with nursing care, perceived sensitivity of nurses providing care and suggestions for improvement of this care.
Results: Registered Nurses (RNs) were perceived to be knowledgeable and sensitive care providers to PWAs. The quality of nursing care was reported by the majority of respondents to be good or excellent. Approximately 50% of the subjects indicated that nurses do not touch enough. A variety of suggestions for improving nursing care were received. One third of the subjects expressed gratitude in response to "If I could tell nurses one thing, it would be...".
Conclusion: RNs are providing good care for which PWAs are appreciative. Suggestions for improvement include: 1)touching more; 2)spending more time; and 3)increasing knowledge about medications. The need for more nurses specializing in the care of the PWA was indicated.

S.D.866 ATTITUDES OF MEDICAL STUDENTS TOWARDS AIDS IN BELO HORIZONTE, BRAZIL (1989)

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Objective: To study the attitudes of medical students towards AIDS/HIV infection.
Methods: In 10/89, attitudes of 61 medical students were evaluated, asking the same questions before and after a 9 hour intensive course on HIV infection.
Results: * significant at .05 level

		Yes%	Before	After
1.	HIV+ should be treated as a special group		87	70*
2.	Prepared to treat HIV+ patients (pts)		10	15
3.	Afraid of infection by treating HIV+ pts		78	64
4.	Afraid of losing pts if known to treat HIV*		18	22
5.	Sure about preventive measures at work place		68	81
6.	HIV+ persons should inform:dentist/physician		100/100	91/95
	employer/colleagues		33/28	21/10*
7.	HIV+ physicians should inform their pts		52	30*
8.	Better infection control since HIV era		52	59
9.	Right to confidentiality applies to HIV		84	95
10.	Risk groups should be screened for HIV		89	68*
11.	Would be treated by a HIV+ physician		50	43
12.	Would be treated by a homosexual physician		65	67
13.	Have been applying preventive measures at work place		80	80
14.	Is HIV transmitted by: Homo-/Hetero- sex		100/100	100/100
	Un-sterilized needles/insect bites		98/09	98/04

Conclusion: There are many misconceptions related to HIV/AIDS, even in individuals exposed to scientific information. It is possible to modify some of them through education but those prejudices related to professional day-to-day contact are harder to change.

S.D.867 INTERNS' & RESIDENTS' KNOWLEDGE & ATTITUDES CONCERNING HIV INFECTION

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Objective: To describe knowledge & attitudes concerning HIV infection among Canadian interns & residents.
Methods: Questionnaires were mailed to 1953 interns/residents in selected training programs (1988-89). Responses on knowledge & attitude subscales were analyzed by school, program, year of training, number of patients with HIV treated, sex, and sexual orientation, using Kruskal-Wallis analysis of variance by ranks.
Results: There were many incorrect or uncertain responses to questions about implications of screening tests for HIV, modes of transmission, and infectiousness. Judgmental & homophobic attitudes were common. There was strong support for coercive screening measures of questionable effectiveness. Residents expressed great anxiety related to HIV infection and difficulty obtaining support around their concerns.
Conclusions: The results are consistent with previous work demonstrating the impact of attitudes on judgments of risk, integration of new knowledge, and doctor-patient relationships. They suggest gaps in the objective content of medical curricula, specifically in epidemiology & public health, but further imply a need for more attention to helping trainees overcome prejudice & intolerance of differences. Finally, they indicate a need for more supports for interns & residents under stress.

S.D.869

CARING FOR AIDS PATIENTS IN RURAL SETTINGS: NURSING'S CHALLENGE FOR THE 1990S

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Objective: Research studies indicate that outcomes for AIDS patients seen in hospitals with little experience in caring for AIDS patients are less favorable than for those receiving care in more experienced facilities. In addition, health professionals' attitudes about AIDS and AIDS patients have been shown to affect the quality of care AIDS patients receive. This study sought to determine if rural nurses in low AIDS incidence areas held different knowledge, attitudes, beliefs and behaviors (KABBs) about AIDS and providing AIDS patient care than their urban counterparts.
Methods: The study is based on 447 survey responses from 447 nurses (136 rural, 311 urban) randomly selected from nurses registered in Colorado. The 3 KABB scales utilized in the study have demonstrated reliability and validity.
Results: As hypothesized, analysis of variance techniques demonstrated that differences exist between urban and rural nurses' attitudes, beliefs and behaviors about AIDS and AIDS patients, although the differences are not great. Also, as hypothesized, these differences diminished when the number of times each nurse had provided care to AIDS patients was held constant.
Conclusions: With the slow, but steady, increase in AIDS patients requiring care in rural areas, nursing care for these patients can be improved by providing rural nurses experiences where they can interact with AIDS patients. Clinical minisabbaticals in a variety of nursing settings is recommended.

S.D.870

COUNTERTRANSFERENCE: AN ACTIVE/PASSIVE PARADIGM

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Objective: Describe countertransference(CT) themes experienced by providers working with patients at risk for HIV. Develop a learning model incorporating these themes in order to promote increased provider identification with prevention role and enhance professionalism of care via improved counseling skills. Measure utility of model via participant evaluation.
Method: Themes were identified by content analysis of professionals' support group and staff interviews. Active/passive paradigm descriptive of attendant CT behaviors was applied to 4 thematic areas. Solicited posttest evaluation.
Results:

Theme	Strategy: Active	Strategy: Passive
Helplessness	Banish feelings via action Rush patient to solutions	Feel paralyzed, pessimistic, ineffective
Overidentification	Feel angry, superior, critical, blaming	Feel flooded by similarities; withdraw
Value judgment	Oversimplify patient Wish ill upon "deviant"	Indulge with tolerance Apply halo effect
Fear of contagion	Use unnecessary precautions Handle patient gingerly	Resent patient's need for assistance

Eighty percent of participants rated model 1 (best) or 2 on 5-point scale.
Conclusion: Providers functioning in a prevention role can enhance professionalism of care by recognizing and addressing CT. Model can assist in identifying and processing active/passive expressions of CT, enabling increased identification with prevention role and improved counseling skills.

S.D.871

DO MEDICAL STUDENTS WANT TO TREAT PEOPLE WITH HIV?

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Objective: To assess the attitudes and willingness of medical students in Massachusetts to treat people with HIV.
Methods: As part of a statewide AIDS Awareness Day, in May 1989 748 1st and 2nd year medical students from the four Massachusetts' medical schools (Boston University, Harvard University, Tufts University and University of Massachusetts) were surveyed using anonymous self-administered questionnaire.
Results: While over 90% of students knew about HIV transmission, over 25% wanted to be allowed to refuse to treat people with HIV or AIDS. Students not willing to treat were more concerned about becoming infected (p=.001), wanted to restrict patient contact and hospital privileges of HIV+ providers (p=.001), wanted to be tested (p=.02) and wanted groups tested including prostitutes, IV drug users, pregnant women, foreigners, patients, physicians and other providers (p=.001). More students not wanting to treat said the epidemic will influence their choice of speciality (p=.001), decision to continue in clinical medicine (p=.001) and final choice of hospital for residency (p=.001). More females than males were willing to treat (p=.04), as were students who knew someone with AIDS (p=.04). More females than males knew someone with AIDS (p=.001). There were no significant relationships between being taught about AIDS and willingness to treat.
Conclusions: Medical students' unwillingness to treat people with HIV may affect career choices and patient care. Knowledge about AIDS does not predict willingness to treat, but knowing someone with AIDS may contribute to willingness to treat. Early exposure of medical students to people with HIV could affect obstacles to willingness to treat. Gender differences in willingness to treat should be explored for student fears and patient care.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.872 HIV-RELATED PERCEIVED RISK, WORRY AND BEHAVIORAL CHANGES AMONG EMERGENCY MEDICAL SERVICE WORKERS: EVALUATION OF A PEER EDUCATIONAL PROGRAM ON AIDS.

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OBJECTIVE: To evaluate the relationship of job-related vs. sexually-related risks for HIV infection to worry and behavioral changes among Emergency Medical Service (EMS) workers following the implementation of a state mandatory peer educational program on AIDS.
METHODS: Following this program, avoluntary, anonymous, self-administered questionnaire with 149 items related to HIV infection, job-related functions sexual practices and demographic variables was completed by 203 EMS workers.
RESULTS: Results regarding modes of transmission as follows: sexual intercourse with condom considered safe/possibly safe (84%), touching AIDS patient without gloves considered unsafe (38%), sharing eating utensils considered unsafe (42%), agreed transimission of HIV can occur via cough or sneeze(51%). Sixty percent perceived themselves to be at high risk from ones job and 9% from their sexual practices. Predictors of job-related risks included negative attitudes towards AIDS patients ($p=.0001$), and perceived risk of contracting HIV sexually ($p=.0001$). Ninety percent changed job-related behavior according to recommended CDC guidelines as compared to 80% prior to educational program and 10% use condoms regularly as compared to 7% prior to educational program. Predictors of job-related behavior changes included negative attitudes towards AIDS patients ($p<.001$) and worry about contracting HIV from patients ($p=.0001$).
CONCLUSION: The peer educational program did not erradicate bias and fears among EMS workers. Emphasis on identifying motivational factors influencing behavioral changes in this group must be considered.

S.D.873 INFLUENCE OF THE AIDS EPIDEMIC ON MEDICAL STUDENTS' CAREER CHOICES

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Objective: To determine the effect of the AIDS epidemic on students attending Medical School in an AIDS endemic center.

Methods: All medical students attending the Johns Hopkins University (JHU) were surveyed by questionnaire in January 1989.

Results: Of 460 eligible students, 307 (66.3%) responded to the questionnaire. There was at least a 58% response from each year. Based on a rank scale of 1 to 5, only 3% indicated they would discourage people from entering medicine due to the AIDs epidemic; 15% indicated that the epidemic has influenced the institution in which they are willing to train; 16% indicated they would avoid practicing in an HIV endemic area; 14% would avoid a specialty with potential for high incidence of HIV among patients. However, 30% felt their risk of acquiring HIV was considerable in their chosen subspecialty field. Although only 19% indicated they find AIDS patient care challenging and enjoyable, 94% would not hesitate to care for AIDS patients. Only 18% did not feel they have adequate knowledge regarding AIDS. Among 12 subspecialty choices, Emergency Medicine was ranked first or second by 89% of the respondents as the specialty with the highest perceived risk of potential for HIV exposure. Surgery was so ranked by 77%, Ob/Gyn by 19%, Internal Medicine by 11%, Pathology by 7% and Pediatrics by 0%. This distribution of responses held for each academic year ($p>.1$). Internal Medicine (42%) and Surgery (31%) were still the most likely planned career choices. There was little variability in responses when stratified by year.

Conclusion: Medical students at JHU have appropriate perception of risks of HIV infection among various specialty practices, but the AIDs epidemic has not had a substantial influence in the career choices for the vast majority of them.

S.D.874 THE IMPACT OF PHYSICIAN CAREER STAGE ON RESPONSE TO AIDS

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Objectives: to describe and compare AIDS-related activities and practices of medical students, interns/residents and physicians.
Methods: 2,922 students, interns/residents and physicians in Canada and the United States were surveyed by self-admininstered questionnaire. Responses to 12 core questions were tested for overall differences between subgroups and individual questions were analyzed.
Findings: an average response rate of 50% was obtained. Preliminary analysis of the data suggests responses differ significantly between the three groups (eg. when asked "if you knew you were seropositive, would you tell any patients?", 77% of physicians, 91% of interns/residents, and 76% of students said "no" ($p<.001$); "since the appearance of AIDS, I am more concerned about dealing with homosexual patients," 39% of physicians, 34% of interns/residents, and 77% of students said "yes" ($p<.001$).
Conclusion: differences will be assessed from the perspective of career stage. This interpretation may bring into question the current emphasis on professional education for addressing problems faced by physicians in relation to HIV/AIDS.

S.D.875 PHYSICIAN BELIEFS ABOUT OCCUPATIONAL RISK AND SEVERITY OF HEALTH STATES ASSOCIATED WITH HIV AND HEPATITIS INFECTION

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Objective: This study was designed to explore physician's beliefs about the occupational risk of HIV and hepatitis B (HBV) infection. In addition, we sought to determine how factors such as the likelihood of seroconversion (SC) and the severity of health states associated with SC contribute to a physician's assessment of risk.
Method: We surveyed 200 housestaff and staff physicians in the medicine, pediatrics and surgery departments via anonymous questionnaire. The questionnaire assessed physician's beliefs about the probability of SC after needlestick and asked whether an HIV+ or HBV+ patient posed a greater occupational threat to health. Physician attitudes about chronic health states were assessed by the time-tradeoff (TTO) method, an approach for quantifying morbidity. The results were analyzed with parametric and non-parametric statistical methods. All tests are 2-tailed.
Results: 128 physicians (64%) returned questionnaires, including 41 surgeons, 59 internists, and 28 pediatricians. 85% of respondents had been vaccinated for HBV. Thirty-six percent of physicians believed the chance of SC after needlestick with HIV+ blood was greater than 1% (actual probability ~0.4%). Surgeons' estimates of HIV SC after needlestick were marginally higher than internists' estimates ($p<.053$). Although only 21% of physicians felt the probability of SC was higher after needlestick with HIV+ blood than with HBV+ blood, 55% felt that an HIV+ individual posed a greater occupational risk ($p<.0001$). The morbidity associated with HIV infection was judged to be worse than that with HBV infection. For instance, asymptomatic HIV infection (mean TTO=0.69) was considered worse than asymptomatic HBV carrier state (TTO=0.81) ($p<.0001$).
Conclusion: Physicians are not well informed about the absolute chance of SC after needlestick with HIV+ or HBV+ blood, with 24% of physicians overestimating HIV SC rate by 10 times or more. More importantly, physicians' assessments of risk are not based solely on the chance of SC. Failure to account for other factors that physicians find relevant, such as the morbidity associated with seroconversion, may in part explain why some physicians perceive significant occupational risk, in spite of the low seroconversion rates shown by epidemiologic studies.

S.D.876

AIDS AND THE NATIONAL MEDICAL ASSOCIATION: KNOWLEDGE, ATTITUDES AND BELIEFS IN A BLACK PHYSICIAN POPULATION

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The AIDS epidemic has disproportionately affected the black population. Black physicians may be the first and only health care provider that a black patient has access to. To assess the knowledge, attitudes, and beliefs concerning AIDS in a group (N=118) of black physicians, the National Medical Association(NMA) surveyed black physicians in four different states where NMA sponsored AIDS workshops were conducted. Multiple choice questions were distributed and were completed anonymously in 1988-1989. Of respondents, 29% were females and 71% were males. Knowledge of HIV transmission was generally good. Seventy-five percent of black physicians had treated an HIV-infected patient. However, only 65% of the black physicians felt knowledgable about counseling a patient with a positive HIV antibody test. Fifty percent routinely inquired about sexual orientation of new patients, although 23% had moderate to considerable discomfort discussing oral and anal sexual activity with their patients. On policy issues, 48% of black physicians were in favor of a needle exchange program for I.V. drug users. Only 35% were in favor of mandatory testing of all hospital admissions. The results demonstrate that nearly one-third of those surveyed lack the AIDS-related knowledge and skills required to carry out their role in dealing with AIDS and suggest the need for AIDS educational programs geared to the minority physician.

S.D.877

STIGMA AND THE NURSING CARE OF CHILDREN WITH AIDS

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Objective: The care of children with AIDS was studied in order to provide knowledge on how stigma influences the care that children receive and to develop a theoretical model for practice.

Methods: The social science methodology of grounded theory was employed. Participant observation was utilized to study the nursing care of infants and toddlers with HIV in a large public teaching hospital. Study sites included a dedicated AIDS unit and general pediatric care areas. The study population consisted of nurses and other health care workers caring for the children.

Results: Stigma, chronicity, ethical concerns, stressors, and coping were the major concepts which emerged. Nurses reacted to stigmas and participated in the stigmatization process, acting as both stigmatizers and destigmatizers. Nurses were also frequently the victims of stigma themselves.

Conclusion: Stigma plays a significant role in the provision of nursing care. The model and theory developed offers health care workers with a broader perspective from which to view stigma, contagion, care, and AIDS. Knowledge of these factors and their interactions can help to stop the stigmatization process for children with AIDS and other stigmatized groups.

S.D.878

AIDS-RELATED EXPERIENCES AND PRACTICES OF PRIMARY CARE PHYSICIANS IN LOS ANGELES: 1984-1989

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Objective: To study the changes over a five-year period in AIDS-related patient experiences and competency at taking sexual histories.
Methods: Telephone interviews with random samples of primary care physicians in L.A. were conducted at three time periods--1984, 1986, and 1989. Data at each time period included number of HIV+ and AIDS patients in practice, details of sexual history taking, attitudes about caring for patients with AIDS, and participation in continuing education about AIDS.
Results: Characteristics are representative of primary care physician population in L.A. Percentage of physicians who have worked up a patient for HIV infection in 6 months prior to interview has grown from 27% in 1984 to 75% in 1989; less than 1% of physicians continued to care for a patient with AIDS in 1984, as compred with 40% in 1989. Twice as many physicians in 1989 ask a patient's sexual orientation (42%) as did in 1984 (23%). Three times as many physicians in 1989 ask their patients how many sexual partners they have (30%) as did in 1984 (10%). Over two-thirds of physicians at all three time periods believe their colleagues have moderate to considerable discomfort discussing sexual matters with homosexual patients.
Conclusion: While the quality of sexual history taking has improved substantially in the past five years, perceived discomfort in dealing with homosexual patients has changed little. Thus, attitudes may be a less powerful determinant of practice behavior in the AIDS epidemic than a sense of professional responsibility to patients in need.

S.D.879

AIDS/HIV: INFECTION CONTROL PRACTICES, ATTITUDES & BELIEFS OF DENTAL FACULTY AND STUDENTS

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OBJECTIVE: To describe current occupational risk assessment, infection control practices, and willingness to treat relative to the AIDS/HIV infected patient among dental faculty and students in an area of high HIV prevalence. METHODS: In fall 1988, anonymous questionnaires (adapted from existing instruments) were administered at a school of dentistry in Los Angeles. Three resulting scales were: **Infection Control Practice, Risk Assessment,** and **Willingness to Treat.** Responses from 64 faculty members, 161 preclinical, and 173 clinical students were analyzed using ANOVA and Tukey comparison tests. RESULTS: Preliminary data show: 1) **Infection Control Practice** scores were not statistically significantly different by group, age, knowledge level, or having treated an AIDS/HIV patient. Use of recommended infection control practices by respondents was inconsistent; 2) **Risk Assessment** was overestimated compared to scientific evidence/expert opinions. Highest perceived risk was demonstrated by preclinical students, lowest by faculty; there were statistically significant differences among scores for all three groups. Mean scores of respondents who treated AIDS/HIV patients or had high knowledge levels were statistically significantly lower; and 3) **Willingness to Treat** mean scores were on the lower side for all 3 groups. Those who treated HIV patients were statistically significantly associated with higher scores; knowledge levels had no statistically significant effect on scores. CONCLUSION: The survey revealed inconsistent infection control practices, an overestimation of risk for HIV transmission, and an unwillingness to treat patients with AIDS/HIV infection. Lower perceived risk and higher willingness to treat scores are associated with treating AIDS/HIV patients. These findings suggest that knowledge acquisition alone is not sufficient to affect certain behaviors (e.g., infection control practices, willingness to treat).

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.880 OCCUPATIONAL EXPOSURE TO HIV AND HEPATITIS B VIRUS (HBV): A COMPARATIVE ANALYSIS OF RISK

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Objective: To quantify and compare the occupational risk to surgeons from HIV and HBV exposure. Our analysis of risk accounts for both the chance of seroconversion and the total burden of morbidity and mortality if seroconversion occurs.
Method: We quantify the risk of HIV/HBV exposure in terms of loss of life expectancy (LLE) quality-adjusted LLE, and a utility-based measure of risk, called the imposed risk. LLE and quality-adjusted LLE from HIV seroconversion are calculated with a 5-state Markov model fitted to cohort data from hemophiliacs and homosexual men. Both unadjusted and quality-adjusted LLE for HBV are calculated from survival data for HBV infection. Adjustments for morbidity are based on a survey of 200 physicians. We also develop a utility-based analysis which accounts for individual differences in attitudes about risk and expresses health risks in dollars.
Results: For an HBV-susceptible surgeon, performance of surgery on an HIV+ patient is associated with a LLE of 0.7 days, as compared to a LLE of 0.12 days for surgery on an HBV+ patient, despite a much higher probability of seroconversion after HBV+ needlestick (1/10) than after HIV+ needlestick (1/250). The surgeon's quality-adjusted LLE is 0.9 days and 0.55 days for HIV+ and HBV+ patients, respectively. The imposed risk to the surgeon, calculated from the utility model, is 2 times larger for surgery on a HIV+ patient ($150-$700) than for an HBV+ patient. The risk from an HIV+ patient is greater than that from an HBV+ patient over a broad range of assumptions about the natural history of HBV infection. For an HBV-immune surgeon, the risk from surgery on an HIV+ patient is at least 10 fold greater than the risk from surgery on an HBV+ patient.
Conclusion: When both the chance of seroconversion and the mortality/morbidity associated with infection are considered, the risk to a surgeon (per operation on an infected patient) is from 1-7 times greater for HIV than for HBV. HBV infection has traditionally been considered a serious occupational hazard for surgeons. Comparisons of risk based only on the likelihood of seroconversion after exposure fail to account for the differential morbidity and mortality of HIV and HBV infection and underestimate the total occupational risk from HIV.

S.D.881 AIDS IMPACT ON HEALTH CARE WORKERS AND AN OUTLOOK FOR THE YEARS 90 - A PHENOMENOLOGICAL APPROACH.

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Objective: To assess the AIDS impact on health care workers of a university teaching hospital and an outlook for the years 90.
Methods: Physicians, nurses, social workers, psychologists, nutritionists and medical students at Gaffrée & Guinle University Hospital, a National AIDS Referral Center were interviewed by a phenomenological method to assess the AIDS impact on health care workers.
Results: The phenomenological interviews revealed the following health care workers statements: Physicians - Need of health care worker unit to assist AIDS pts and to fight against AIDS; need of technical/humanistic approach; to cope with the ignorance of some colleagues who provoke panic. Nurses - our weapon is to look for information; need of biosecurity; all clinics were attending AIDS pts even involuntarily. Social Workers - Need of paying close attention to different pt-language; "is a work without acknowledgement"; AIDS pts undergo strong, successive bereavements. Nutritionists - "when AIDS claim against food, they are asking for care"; is a differentiated pt., other health care workers prejudices. - Psychologists - AIDS stir major mankind taboos; "you have to foster yourself not to become paralyzed by your feelings"; it is gratifying to see a dying pt and improve our knowledge". Students - "I evolved through pts grief" "They are pts who need a friendly comment" "we have to see pts as human beings".
Conclusion: The classic model of medical care is changing to be focused on the individual. Sharing the medical decision making with other health care professionals such as nurses, social workers, psychologists, etc. seems to be an outlook for the years 90.

S.D.882 PEDIATRIC HIV INFECTION: A COMPARISON OF TEACHING METHODS IN EDUCATING PEDIATRIC AND PERINATAL NURSES

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Objective: To identify which of 2 teaching methods,(D) didactic (lecture/case studies) or (I) interactive (adult education principles, goal setting, games, exercises, group work) was more effective in increasing knowledge and changing attitudes of perinatal and pediatric nurses caring for children in areas of high prevalence for AIDS.
Methods: Subjects were pediatric and perinatal nurses (N-275) from 6 tertiary care hospitals in New Jersey who voluntarily attended a 1-day workshop on pediatric HIV infection.Teaching method was randomly assigned and unknown to the nurses; both methods were offered at each site. Groups were compared using pretests and posttests (maximum score=200) measuring knowledge, behavior and attitudes.Demographic data included: education, age, marital status, hospital, nursing specialty, experience with HIV children. Pretest/posttest scores were compared using paired t-tests. Multiple regression analyses with posttest scores as outcome variables and pretest scores, teaching method, and demographic data as independent variables were conducted at the .01 significance level.
Results: Mean combined group pretest score was 135.52(SD 14.96). Mean combined posttest score of 145.37(SD 13.37) demonstrated substantial learning (paired t, p<.01). Using regression analyses and controlling for pretest scores, being in the I group was significantly associated with higher overall as well as attitude scores. In addition, location of hospital and prior experience with HIV children were significantly associated with overall posttest scores. Marital status was associated with higher posttest attitude score.
Conclusion: Interactive adult education-based teaching methods are useful in educating nurses about pediatric HIV infection. These methods may be of importance in all AIDS education, particularly in changing attitudes. This study needs to be replicated with both similar and diverse groups of health care providers.

S.D.883 CDC RECOMMENDATIONS FOR TUBERCULOSIS CONTROL IN HEALTH CARE SETTINGS WHERE HIV-INFECTED PERSONS RECEIVE CARE

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Objective: Transmission of tuberculosis (TB) has been documented in health care settings where HIV-infected persons receive care. TB may be overlooked in HIV-infected persons because of failure to consider the diagnosis; atypical presentation; concomitant *Pneumocystis carinii* pneumonia; decreased frequency of smears positive for acid fast bacilli; and simultaneous infection with *M. avium* complex. HIV-infected patients frequently undergo cough-inducing procedures (e.g. bronchoscopy, sputum induction, aerosol therapy) which may result in TB transmission. Therefore, infection control recommendations for TB were developed.
Methods: A multidisciplinary CDC workgroup with outside expert consultants.
Results: Microbial contamination of air can be reduced by: (1) screening HIV-infected persons for TB infection and treating infected persons preventively; (2) early identification and treatment of HIV-infected persons with active TB; (3) facilitating early diagnosis with radiometric culture techniques and DNA probes; and (4) application of TB isolation in inpatient and outpatient facilities and during cough-inducing procedures. Microbial contamination of air can be reduced by negative pressure, nonrecirculated ventilation; high-efficiency air filtration; and possibly by supplemental ultraviolet lights. Surveillance for skin test conversions will identify recently infected employees who are candidates for preventive therapy.
Conclusion: Infection control measures are needed to reduce the spread of TB from HIV-infected persons in health care settings.

S.D.884 SCREENING FOR TUBERCULOSIS WITH TUBERCULIN SKIN TESTS AND ANERGY PANELS AMONG HEALTH CARE WORKERS WHO ARE POSSIBLY AT HIGH RISK FOR HIV INFECTION

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Objective: To determine the prevalence of latent tuberculosis and anergy in a group of health care workers at possibly high risk of HIV infection, in a primary care gay and lesbian clinic.
Methods: 58 health care workers (52 males, 6 females) in a primary care-clinic providing care to HIV-infected persons were administered 5-TU of purified protein derivative (PPD) skin tests and an anergy panel consisting of 0.1 cc intradermal injections of three antigens (Candida, Mumps and Trichophyton). Aerosolized pentamidine is administered in the clinic routinely to patients at high risk for PCP increasing the exposure of health care workers to tuberculosis. A large percentage of the workers are at high risk for HIV infection due to sexual behaviours. To avoid identifying HIV serostatus anergy panels were administered to all workers so as to establish the validity of the PPD test.
Results: Two percent (1/56) of the health care workers had a positive PPD test (10 mm induration). Two persons had previous positive PPD tests and were not retested. 46% of the anergy tests were negative. Twenty percent (9/44) of the workers were anergic to three antigens, 16% (7/44) were anergic to two antigens and 50% (22/44) were anergic to one antigen. Fifty percent (3/6) of the female workers were anergic to one or more antigens. Workers whose PPD tests were not considered valid had induced sputum tests for AFB.
Conclusions: Health care workers at high risk for HIV infection may be anergic. Screening for tuberculosis should include anergy panels and possibly sputum analysis for AFB.

S.D.885 EXPERIENTIAL TRAINING ABOUT AIDS FOR HEALTH AND MENTAL HEALTH CAREGIVERS: THE AIDS COMMUNITY TRAINING PROJECT

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OBJECTIVE: Train health/mental health caregivers about psychological and social aspects of living with AIDS. Build empathy by experiencing what is involved if they, or someone they loved, were infected or affected by HIV/AIDS. Promote coalitions for coordinated and comprehensive AIDS care.
METHODS: Two-day conferences in small/medium sized cities and rural states. Elicit strong emotions, positive and negative, through general sessions, videotapes and experiential workshops about delivering AIDS-related services to People with AIDS, HIV infected, family/friends/lovers, special populations (gay men, IV drug users, ethnic minorities, women, children), the dying, and lovers/family. Emphasize human aspects of AIDS for caregivers and patients: religious, ethical, legal, fear of the unknown, lack of control, taking control. Build clinical skills. Promote communication among caregivers and institutions. Teach mechanics of building community-based AIDS coalitions.
RESULTS: High satisfaction with training and experiential approach; eliciting emotional responses overwhelmed personal fears about contagion, death, getting involved with AIDS work, working with gay men; significant increases in knowledge about community resources for AIDS care; formation of AIDS coalitions; significant increases in belief by trainees that they can make a positive contribution to the life and death of someone with AIDS.
CONCLUSIONS: Emotional involvement is essential to train AIDS caregivers.

S.D.886 A STAFF TRAINING PROGRAM FOR PROFESSIONAL AND PARA-PROFESSIONALS WORKING WITH PEOPLE WHO HAVE MENTAL RETARDATION/DEVELOPMENTAL DISABILITIES WITH IMPLICATIONS FOR TRAINING STAFF WHO WORK WITH OTHER DIFFERENTLY ABLED PEOPLE.

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OBJECTIVE: To train staff and administrators working with the Mentally Retarded to teach clients how to protect themselves from AIDS and how to provide HIV service delivery systems to clients in need.
METHODS: A staff training model has been developed for training with New York city government funded M.R. facilities. Using both didactic and experiential teaching methods as well as audio-visual training tools, staff identifies a)their own isses and fears related to working with AIDS; b)what they can and should be doing at their agencies to meet State regulations on training and to help clients; and c) how they are mobilized and motivated to do it.
RESULTS: Training evaluations, program reviews and 2 years of experience have shown that fears about transmission; a comprehensive understanding of HIV; attitudes about sex, homophobia, and drug users; and how to teach correct condom usage are among the most needed components in providing comprehensive training. Staff are also most in need of learning how to use particular teaching and group skills related to the affective and emotional responses often raised in relation to AIDS and HIV information.
CONCLUSION: Staff training models have been developed for AIDS educators and service providers which can be adopted to meet the special needs and learning abilities of disabled populations. These models are adopted after staff identifies which factors about their special population create risks or problems particular to the needs of their disabled clients

S.D.887 AIDS TRAINING IN PSYCHIATRIC RESIDENCIES IN THE U.S.A.

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Objectives: To determine the extent of AIDS education (AE) and clinical experience (CE) in psychiatric residency training programs in the U.S.A.

Methods: A survey developed by the American Psychiatric Association was forwarded to 226 training directors (TD) and 305 chief residents (CR) (N=531). Responses were compiled and evaluated for both groups. Data analysis was limited to frequency variables.

Results: 192 (40%) surveys were returned. Responses from CRs and TDs proved to be consistently different. 57% CR/72% TD indicated that both AE and CE were underrpresented in their programs. However, TD's indicated twice as many hours of AE/CE as CRs. In all cases, CRs ranked the usefulness of AE/CE lower than TDs. Neuropsychiatric complications and psychological reactions to HIV infection were ranked as the most useful by CR/TD. 97% CR and 98% TD cited journals and professional publications as the most valuable source of information. Both ranked their experiences with families and friends of PWAs as least valuable. CRs (42%) ranked individual supervision as more valuable than TDs (28%); and, both CDs and TDs ranked their CE as less than adequate.

Conclusion: Overall, survey results indicate that most residency programs provide minimal AE. Lectures and seminars on AIDS as well as AIDS-specific CE are perceived as limited and, oftentimes, less than useful. CRs, in particular, indicate that relatively few hours are designated for formal AE and that their orientation to HIV/AIDS in the clinical setting is inadequate. While TDs disagree with CRs as to degree, responses from both groups prompt concern that many psychiatry residency programs are not incorporating sufficient information on HIV/AIDS into their curriculum.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.888 RESULTS OF AN EVALUATION OF AIDS/HIV STAFF TRAINING IN A NATIONAL HEALTHCARE SYSTEM: LESSONS LEARNED

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Objective: To determine the effectivness of a long-range HIV staff education effort in a national system of 172 hospitals and associated outpatient clinics, with the aim of using results to make appropriate modifications.
Methods: A formative evaluation surveyed clinician-trainers, educators, and administrators in all facilities. Items assessed included training frequency, effectiveness, trainer support, staff participation, use of interactive facilitation, adaptability and usefulness of strategies and materials, value of networking, and obstacles to training. The survey was tested in 1 region, modified, and used in the remaining 6 regions.
Results: The survey return rate was 80%. One or more trainers were active in 96% of facilities. 2/3 of the trainers did 3/4 of all facility HIV training. Reducing anxiety due to ignorance and fear was rated most significant. Lack of time was the main training obstacle; mandated universal precautions was the chief enhancer. 89% of trainers said program elements were readily adaptable. 48% used facilitation at least 1/2 the time. Physicians were the group most under-represented. 93% of medical center directors felt that HIV training needs would continue or increase.
Conclusion: Overall, the training effort is achieving its goals. Training occurs regularly, facilitation is used frequently, and strategies and materials are adaptable and used. Creative efforts are needed to provide additional training time and to serve under-represented groups. Training needs will continue into the foreseeable future.

S.D.889 HEURISTICS FOR PLANNING SUCCESSFUL SUSTAINED AIDS/HIV EDUCATION FOR ALL HOSPITAL STAFF

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Objective: To establish and implement an AIDS/HIV education plan for all levels of hospital staff at multiple hospitals that includes means to sustain training momentum to meet continuing needs.
Methods: Planning was based on comparative analysis of 10 years' experience with programs in which a core faculty is trained to train individuals who then return to their facilities to conduct staff training. This showed the need to fulfill specific criteria in extended training efforts: (1) a shared, clear training need, (2) full commitment to training goals by all, (3) modeling of adult learning principles, (4) credible trainers, (5) a trainer-support system, and (6) a training tracking system.
Results: The core faculty remains intact; trainers were trained for 172 facilities within 9 months; training flourishes at facilities where fully-committed administrators and clinicians share the perception of need; trainers use facilitative, interactive approaches; the support system encourages networking and sharing; the tracking system works.
Conclusion: Planning of long-range AIDS/HIV staff training achieves sustainable goals by meeting specific criteria. This program me the specific criteria by (1) continual verification of HIV-related training issues, (2) risk-free opportunity for partially-committed trainers to withdraw, (3) basing learning strategies on adult learning principles, (4) establishment of criteria for selecting credible trainers, (5) follow-up teleconferences and mailings, and (6) utilizing an existing tracking system.

S.D.890 THE ROLE OF HIV INFECTED PATIENTS IN EDUCATING HEALTH CARE PROFESSIONALS

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Objective: The Southern Illinois Site, Midwest AIDS Training & Education Center, provides AIDS education to health care professionals in largely non-urban areas. Due to the relatively low incidence of HIV infection in these areas, most health care professionals have not yet directly cared for HIV infected patients. Therefore, a key strategy in educating them is to incorporate patients with AIDS or HIV infection into the programs, as speakers, standardized patients, or resource persons in small group sessions. This study examined the effectiveness of that strategy.
Methods: One-day programs on AIDS topics were designed and conducted in 4 non-urban Illinois communities: Belleville, Rock Island, Carbondale and Springfield. All programs featured 3 or more HIV infected patients, who were from AIDS support groups in the community. The programs were advertised by direct mail, and evaluated by attendees at the end of the program.
Results: Attendance at the 4 programs averaged 86 (range, 65 - 120) and included varied professions. Questionnaire data strongly supported inclusion of the HIV infected individuals. They were cited consistently as one of the primary strengths, because they provided most participants a first opportunity to interact with an HIV infected person. Subjective observations suggested that attendees grew in their empathy for the patients.
Conclusion: Providing opportunities to hear and interact with HIV infected individuals is an important strategy in educational programs for audiences with little prior direct experience with HIV infection. In this manner, AIDS support groups can play an essential role in educating health care professionals.

S.D.891 DESIGN AND IMPLEMENTATION ISSUES IN TRAINING STAFF TO DO PRIMARY PREVENTION OF HIV IN ACUTE CARE SETTINGS

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Objectives: To implement a National HIV Prevention Training Program designed for Department of Veterans Affairs (DVA) health care providers to increase their knowledge and skills for educating and counseling clients about risk reduction for HIV.
Methods: A four day national training program model with master faculty teams was developed for seven regions of the country. Physicians, nurses, social workers, psychologists and substance abuse counselors participated in an interactive program that incorporated the following tenets designed to: (a) present and support a model of client centered counseling; (b) integrate risk reduction methods into existing patient education processes; (c) establish mechanisms supporting risk reduction as a long term process requiring ongoing monitoring; and (d) facilitate participants sharing of HIV experiences through participatory workshop activities.
Results: In two years, over 600 DVA staff were trained in 20 regional sessions that resulted in: (a) staff from varying cross-cultural backgrounds and experiences were able to explore feelings, beliefs and behaviors around HIV before and during skill development sessions; (b) multiple content delivery methodologies are necessary for differences in staff from region to region; (c) faculty developed skills and sensitivity around human sexuality issues; and (d) it was recognized that prevention of HIV and other sexually transmitted diseases need to be integrated into the process of patient education.
Conclusions: Hospital staff working in both in- and outpatient settings can be recruited to become active in the promotion of primary prevention of HIV through effective patient education and counseling interventions.

S.D.892 PHYSICIANS' ATTITUDES AND PRACTICES TOWARDS HEALTH CARE PROMOTION WITH PARTICULAR REFERENCE TO AIDS

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Objective: To assess physicians' attitudes, behaviors and perceived needs for health care promotion with particular reference to AIDS.
Methods: Questionnaire-based study administered to 301 physicians from 1987 through 1989 in northeastern Ohio.
Results: The study group generally held strong beliefs that it was important to avoid high risk sexual and drug-related activity (93-98%) similar to their beliefs on avoiding cigarette smoking and excessive alcohol consumption (92-99%). Regarding health promotion behavior, less than half of the respondants admitted to routinely obtaining risk assessment histories or histories of sexual function or orientation on new patients (41%) which was significantly less often than the obtained histories of smoking and alcohol use on similar patients (89%) ($p<.001$). Physicians generally viewed themselves as the most important component of AIDS prevention in the community. Physicians more likely to take routine sexual histories were: those sampled in 1989; those who had greater than five hours of continuing medical education on AIDS, and those who had attended a post-graduate course on AIDS. There was no influence on previous experience in diagnosing AIDS in practice.
Conclusion: 1) Physicians appropriately view AIDS prevention as an important part of health care promotion; 2) AIDS health care promotion practices lag behind other areas in practice; 3) Promising trends for improved physician behavior include a favorable influence of targeted post-graduate medical education. (These studies were supported in part by NIH award U01-25879 to the Cleveland AIDS Clinical Trial Unit.)

S.D.893 PHYSICIAN'S ATTITUDES TOWARDS CONTINUOUS MEDICAL EDUCATION ON AIDS IN THE PROVINCE OF QUEBEC

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Objectives: To measure physicians'attitudes towards continuous medical education (CME) on AIDS throughout the province of Quebec.
Methods: With the collaboration of the Corporation Professionnelle des Médecins du Québec, a short questionnaire was sent by mail to a representative stratified sample of the 15,000 province's physicians. Out of the 1530 physicians contacted, 879 (57.5%) sent back the questionnaire before the deadline. Attitudes were measured with Likert-type statements. Results were obtained by univariate and multivariate analysis.
Results: 55.7% (CI=52.4-59.0) were highly interested in improving their knowledge about AIDS. However, only 13.0% (CI=10.8-15.2) thought that there was enough CME on AIDS going on in the Province. Multiple regression was performed on 6 variables: age, sex, language, geographical area (high, low HIV prevalence), type of practice (surgery, others) and source of income (fee for service, others). French-speaking women were slightly more inclined to increase their knowledge than other physicians. Older women from low prevalence area found the CME activities on AIDS lacking. It was also found that the desire to improve one's knowledge was strongly correlated with the statement that AIDS is a priority in the Province.
Conclusion: In Quebec, a large majority of physicians have expressed their desire to increase their knowledge about AIDS but felt that CME activities have been inadequate so far to enable them to do so. There is a definite need for CME organizations to address that problem. Our results enable us to identify the group of physicians most likely to benefit from these activities.

S.D.894 DESCRIPTION AND EVALUATION OF AN AIDS EDUCATION PROGRAM FOR NON-NURSING HOSPITAL HEALTH CARE WORKERS

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Objective: Development, implementation and evaluation of an AIDS education program for non-nursing health care workers in an active treatment hospital setting will be described.
Methods: Presentation will include: 1) method of design and distribution of AIDS education needs survey. 2) description of data collected pre and post education program. Results were calculated to percentages for pre education program and compared to post education program calculations.
Results: Knowledge and attitude survey information was collected from 650 non-nursing health care workers. An immediate post education program test was delivered to 540 employees. Knowledge improved significantly. Attitude change was inconsistent and varied between occupational groups. Questionnaires administered 2 months after program delivery indicate a significant lowering of knowledge scores back toward baseline and a continued inconsistency in change of attitude. Detailed data will be presented for pre and post program and 2 month questionnaires.
Conclusion: Ongoing education programs based on needs survey are required to maintain knowledge base and influence attitudes.

S.D.895 A MODEL FOR TRAINING COMMUNITY HEALTH CENTER (CHC) STAFF TO COLLECT RELIABLE AND VALID BEHAVIORAL DATA FROM CLIENTS AT HIGH RISK OF HIV INFECTION

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**Health Resource Services Admin., Rockville, MD, U.S.A.

Objective. To describe a model for training program staff to collect reliable and valid longitudinal behavioral risk data from clients at high risk of HIV infection.
Method. The need to evaluate the effectiveness and impact of HIV prevention programs has been well documented. Current funding trends and the relatively high cost of conducting program evaluation necessitate involving onsite program staff, rather than outside researchers, in data collection efforts. To assure the data are reliable and valid, a model was developed and utilized to train staff at 3 CHCs in high HIV seroprevalence cities which are implementing a pilot program for providing comprehensive prevention and treatment services onsite. The staff training is divided into four phases: persuasion, skill acquisition, testing, and quality assurance. Effectiveness of the training program was assessed through knowledge questionnaires, oral presentations, and observations of counselors during data collection. Inter-rater reliability is assessed by pairing raters and assigning each pair to conduct 15% of the scheduled interviews. One person conducts the interview, but both code the responses independently. Percent agreement between the 2 raters is used to compute reliability. Demographic charateristics, personality traits, and HIV related KABB of program staff were also collected. These will be correlated with client variables and behavioral risk data to identify factors which might explain the observed changes.
Results. Twenty-four persons participated in the initial 2 day training and are involved in ongoing data collection efforts. Interrater reliability averages 95% agreement. Preliminary findings indicate program staff can reliably collect longitudinal behavioral risk data.
Conclusions. This model can significantly reduce the cost of program evaluation by providing a vehicle through which reliable and valid longitudinal behavioral risk data can be collected. The authors will summarize reported changes in risk behaviors and discuss the potential impact of mitigating variables associated with this approach.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.896 BEHAVIORAL CHANGES THROUG NURSING PERSONNEL TRAINING-THE BRAZILIAN EXPERIENCE

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*Ministry of Health-National Division of STD/AIDS,Brasilia,Brazil

Objective:To change the behavior of nurses who assist HIV positive individuals and AIDS patients in the public health system, decreasing discrimination and increasing quality.
Methods: The methodology used tries to:1.Reformulate the concept of live beings and their relation with contamination, sterilization, disease transmission and alterations due to the process of attack versus defence in the host;2.Reformulate the concept as a whole, relating it to HIV infection, physiopathology of AIDS, stigmatization and professional rejection;3. Study some aspects of magnitude, transcendence, risk-factors and epidemiological surveillance that subsidise decision making. The method is based on problematization, relying on the integration of teaching-working, in a process of reflexion-action, where the participants work actively in the construction of knoledge and in the transformation of reality at their working place. Such process requiers continous follow-up by the instructor, who facilitates solution findings. The activities of teaching-learning are organized in three sequential didactic units. At the end of the trainings, we have professionals who will be able to act as behavioral change multipliers.
Results: There have benn 3 national courses in the last 2 years, where 54 nurses have been trained througout the country. They have multiplied 8 other trainings at State level to 155 health professionals. Ten State courses and 1 national course are planned for the first semester of 1990, meant basically for nurse assistants in AIDS. Some behavioral changes have been noticed in nurse assistants of some health services in the Northeast of Brazil and in the main Reference Centers for AIDS in the country. These changes have mostly been related to willingness and loss of fear to assist patients and their families.
Conclusion: This methodology has brough positive results and has been found economically feasible Individual changes have also been a refles of behavioral changes in the whole nursing category.

S.D.897 ADEQUACY OF INFORMAL SUPPORT TO GAY MEN WITH AIDS AND THE PSYCHOSOCIAL CONSEQUENCES FOR THE CAREGIVER

Raveis, Victoria H.; Siegel, K.; Kletecka, C.; Segal, J.; Moynihan, R.; Memorial Sloan-Kettering Cancer Center, New York, New York, U.S.A.

Objective: To learn about the adequacy of emotional and practical assistance to gay men with AIDS and to understand the psychosocial consequences for the caregiver of providing this support.
Method: Conducted structured 1 1/2 hour, in-person interviews with 100 gay men with AIDS (diagnosed in the last 18 months) and their primary informal caregivers. Sample drawn from outpatients in two major NYC hospitals.
Results: The main sources of social support and informal assistance to gay men with AIDS, who are receiving treatment primarily as outpatients (2/5's have had a hospitalization in the prior 4 months), are their friends and lovers, followed by family members. At this point in their disease course, the large majority of the AIDS patients in the sample are still functionally independent (about half are currently employed) and their needs for practical assistance are low. However, those patients who do require assistance, reveal substantial unmet needs. One-third to 1/2 of patients with ADL and IADL needs report unmet needs. Analyses of the caregiver interviews reveals that providing informal care and assistance is adversely impacting on the caregivers' lives. A substantial minority of caregivers report experiencing physical strain, financial problems, employment-related burdens and changes in social activities. About 1/3 of the caregivers also score in the clinical range on two measures of psychological distress--CES-D (depression) and Rutter Malaise.
Conclusions: A substantial proportion of those patients with needs are at risk for having their needs go unmet. In addition, a significant proportion of AIDS caregivers appear to be at clinical risk for depression.

S.D.898 THE UNIVERSITY OF MIAMI/AIDS CLINICAL RESEARCH UNIT: A MODEL PROGRAM WHICH FACILITATES STAFF RETENTION AND DECREASES "BURNOUT" FOR AIDS HEALTH CARE PROVIDERS

Healy-Chidekel, Jane; Patrone-Reese, J; Almunia, M; Dow, M; Fischl MA.
University of Miami School of Medicine, Miami, Florida, USA.

OBJECTIVES: To evaluate the implementation of a stress-reduction program on staff retention and burnout among the nursing staff in an AIDS Unit.
METHODS: Twenty-four nurses were evaluated over a 2 year period (January 1988 - January 1989). A retrospective review of personnel records regarding employment dates, resignation dates, and reasons for resignation were evaluated. A stress-reduction program was implemented in January 1988 and consisted of voluntary weekly staff support groups, bimonthly group outings (movies, beach outings, barbecues, pool parties, zoo outings), annual retreats, educational outreach program (pamphlet and poster development), community educational program, monthly birthday celebrations, on site social worker, and psychiatric consultant. The nursing staff's participation in the stress-reduction program was evaluated by frequency of attendance in the listed activities and retention rates.
RESULTS: Twenty (83%) of 24 nurses continued employment in the AIDS Unit from October 1984 - September 1989; a mean of 24.5 mos. Four (17%) nurses resigned for the following reasons: relocation for personal reasons (2), transfer for personal reasons (1), and transfer for promotion (1). One hundred percent of the nursing staff participated in 4 or more activities.
CONCLUSIONS: The data confirm that administration's explicit concerns and commitment to creating an environment that is healthy for staff will increase staff retention, decrease burnout and improve overall harmony.

S.D.899 RELATIONSHIP BETWEEN BURNOUT, SOCIAL SUPPORT AND COPING IN NURSES WHO CARE FOR PEOPLE WITH AIDS.

Driedger, Susan M.; Cox, D.
Simon Fraser University, Burnaby, British Columbia, Canada.

Objective: The effects of social support on burnout and coping behaviour in nurses who care for People with AIDS (PWAs) are examined.
Methods: A sample of 80 female Registered Nurses completed the House and Wells Social Support Questionnaire, the Maslach Burnout Inventory, and the Ways of Coping Questionnaire. The experimental group (AIDS-high) consisted of 34 nurses who care for PWAs on a daily basis in the course of caring for patients who require acute non-surgical care. The control group (AIDS-low) consisted of 40 nurses who provide pre- and post-operative care for patients requiring surgery.
Results: The 2 groups were not significantly different according to the univariate statistics, however, a regression analysis revealed significantly different patterns of results between groups. Lack of experience was significantly predictive of burnout in AIDS-low nurses (p .05) but not in AIDS-high nurses. Contrary to predictions, burnout was not significantly associated with social support for either group. Preliminary analyses reveal differences in the coping behaviour of these 2 groups.
Conclusions: In this study, 1) the use of social supports did not differ between AIDS-high and AIDS-low nurses, 2) the use of social supports was not associated with burnout, and 3) AIDS-high(medical) nurses cope with a stressful situation differently from AIDS-low(surgical) nurses. It is suggested that hospital policies influence nurses' attitudes more than do the specifics of caring for PWAs.

S.D.900 THE PSYCHOSOCIAL IMPACT OF AIDS ON HEALTH CARE PROVIDERS: CRITICAL ANALYSIS OF THE LITERATURE AND IMPLICATIONS FOR POLICY

Eakin, Joan M* and Taylor, KM*
*Department of Behavioural Science, University of Toronto, Ontario, Canada

Objectives: The aim of this project sponsored by the WHO/H&W (Canada) was to prepare an annotated bibliography of the literature on the psychosocial impact of AIDS on health care providers, to critically assess this literature, and to identify its policy implications.
Methods: 446 journal articles were annotated and indexed, and 125 were analyzed by topic, conceptual perspective, methods, results, and policy implications.
Results: Methodological problems and lack of theoretical and comparative perspectives reduce the usefulness of this literature. The relationship between attitudes and behaviour is often assumed rather than demonstrated. Emphasis is primarily on individual-level variables; organizational, professional, and health care system factors are often neglected.
Implications: Future research could be strengthened by 1) increased objectivity within a context-sensitive methodology, and by 2) the explicit conceptualization of issues in more generic terms. Policy and intervention should address broader social and structural determinants of provider response.

S.D.901 IDENTIFYING STRESSORS IN HIV-RELATED HEALTH WORKERS (HCW) TO TARGET SUCCESSFUL INTERVENTIONS.

Earl, W.; Rogers, Mari; Cohn, D.; Denver Disease Control Service, Denver, CO., USA

Objective: To identify stressors that diminish job efficiency in HCW who serve HIV-infected clients and to target interventions.
Methods: Four areas of potential staff distress were identified: (1)Structural (STR); (2) Management Style (MCT); (3) Difficulties in HIV care delivery (HCD); (4) Personal Adjustment Style (PAS). The Staff Distress Profile (SDP) yielded 24 items by factor analysis. Each item required 2 responses on parallel likert scales: (a) to measure perceived level of distress (>2="constant distress") and (b) to measure interference with job tasks (bothersome >10%). Interventions lasted for 10 weeks.
Results: 134 HCW from 4 sites were analyzed by treatment (Rx) and non-treatment groups. Groups were matched by age,sex,occupation, and education.

		Before Rx (n=68)		After Rx		P1	No Rx (n=66)		P2
(1)STR	a	1.8	± 0.9	1.8	± 1.2	ns	2.4	± 1.7	ns
	b	10.0	± 3.8	9.9	± 3.3	ns	11.6	± 4.3	ns
(2)MGT	a	2.1	± 2.5	1.5	± 0.9	.05	2.5	± 1.8	ns
	b	18.4	± 12.3	8.8	± 8.4	.001	18.86	± 13.9	ns
(3)HCD	a	12.9	± 4.4	8.1	± 1.7	.001	10.8	± 10.5	.001
	b	19.1	± 5.5	7.9	± 5.6	.001	15.6	± 2.3	.001
(4)PER	a	2.8	± 3.3	0.9	± 1.0	.001	1.6	± 3.5	.05
	b	14.6	± 4.4	10.0	± 2.9	.05	13.9	± 4.9	ns1

P1=difference between T1/T2 (3 months). P2= between groups without Rx
Conclusion: Stressors can be identified and interventions targeted to decrease workplace stress for HCW who serve HIV-infected clients.

S.D.902 AIDS IN THE WORKPLACE: IMPACT ON STAFF WHEN CO-WORKERS BECOME PATIENTS

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Departments of Nursing* and Medicine**, Department of Veterans Affairs Medical Center and The University of California, San Francisco, California, USA

Objectives: The San Francisco VA Medical Center is located in an area of high prevalence for HIV. 18.2% of Medical Center (MC) employees are male veterans, who are therefore eligible for care here. Since 1981, 49 employees have been diagnosed with non-occupationally related HIV disease; of these, 17 have received care at the MC. There have been 18 HIV-related deaths among employees. MC policy permits employees to remain working for as long as they feel able. Thus, staff must sometimes cope with HIV and its consequences among their colleagues.
Methods: Staff-support strategies have included: (1) Providing education that focuses on confidentiality, transmission, psychosocial issues, and community resources; (2) Forming on-the-job support groups; (3) Identifying specially trained staff available to employees for counseling; (4) Formally recognizing staff deaths at memorial services in the MC chapel; (5) Producing a panel for the Names Project Quilt on which employees could inscribe names of staff and patients.
Results: Over 90% of employees have attended HIV educational programs. Nine support groups have been established. Conduct of these groups during working hours is viewed favorably by participants. In standardized questionnaires, members report more ease and less ambivalence dealing with peers with HIV disease. 60 staff members participated in the Names Project quilt.
Conclusions: When hospital staff become ill from HIV, the loss experienced by peers must be addressed. Providing opportunities for staff to receive information and to discuss fears improves attitudes and reduces anxiety.

New Challenges for the 1990's

S.D.903 BLACK AND LATIN REPRESENTATION AT THE INTERNATIONAL AIDS CONFERENCES

Lawson Candace, Weinstein M, Brown A, Fullilove R, Fullilove M, Hulley S; Multicultural Inquiry and Research on AIDS, Bayview-Hunter's Point Foundation and UCSF Center for AIDS Prevention Studies (CAPS).

Objective: To examine trends in the representation of U.S. Blacks and Latins as speakers and in the research presented at the Third, Fourth and Fifth International AIDS Conferences.
Method: All behavior science abstracts published at the last three AIDS conferences were analyzed to determine minority focus, type of study, and risk behaviors investigated. Abstracts were considered minority focused if they were organized around race or ethnicity, mentioned ethnic groups in the findings, or included an ethnic group in the title. In addition, surveys of the ethnic distribution of speakers at each of the conferences were taken.
Results: Black and Latin representation among speakers declined from 8% at the Third to 5% at the Fifth Conference. The research abstracts which include minorities in their findings have increased from 12% to 18%. However, the information presented is largely descriptive; studies which organized their findings around race/ethnicity comprise approximately 6% of the abstracts for all three conferences.
Conclusion: While minority issues are increasingly being presented at the International AIDS Conferences, minorities are still underrepresented. Given the disproportionate impact of this epidemic on minority populations, minority issues should be given higher priority on the research agenda. Further, research should move beyond mere description to more in-depth investigation of the factors that place minorities at excess risk.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

S.D.904

Hayes, Robbie*; Sawyer, Janice**; Keyser-Smith, Jennifer***
R.O.W. Sciences, Inc.*

Strategies for the 1990s: AIDS Prevention Among Ethnic Minorities

The presentation design will include a brief presentation of the findings of 36 focus group discussions that were conducted in six regions of the United States, under contract to the National Institute on Drug Abuse (NIDA) and the National Institute on Mental Health (NIMH). The purpose of convening these focused discussions was twofold. First, the discussions provided an opportunity to ascertain the knowledge, beliefs, and attitudes among selected ethnic minorities and Caucasian populations regarding AIDS and AIDS-related issues. Concurrently, discussions with a wide range of population subgroups permitted the identification of strategies that were perceived to be potentially effective in providing AIDs information and education to these communities. There is a great need to become more knowledgeable about and sensitive to ethnic variations in AIDS-related beliefs and protective behaviors. The presentation of the focus group findings will establish a baseline understanding for the interventions and training initiatives for the 1990s. Additionally, the design will involve a combination of didactic and experiential methods to provide conference attendees with a process and model for developing culturally-specific information and strategies for key AIDS-related education and counseling services.

Objective: To identify specific strategies to educate and inform ethnic minorities, injector drug users, and adolescents about prevention of HIV exposure and infection.
Methods: Conducted 36 focus groups through the U.S. specifically targeting adults, adolescents, women, men, rural, urban, gay-bisexual, Caucasians, African-Americans, Haitians, Cuban-Americans, Mexican-Americans, and Puerto Ricans. Developed and conducted training to further test strategies and address skill and knowledge deficiencies.
Results: The focus groups and resulting training provided an opportunity to develop specific strategies for reaching ethnic minorities now and in the 1990s.
Conclusion: Traditional communication methods and channels are not being used effectively. Non-traditional approaches must be considered and used to meet the education needs of ethnic minorities to decrease the spread of HIV.

S.D.905

A SHELTER-BASED HIV PREVENTION PROGRAM FOR THE URBAN HOMELESS POPULATION

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Objective: To develop a comprehensive shelter-based HIV prevention program for the urban homeless population and to enable service providers to the homeless to maintain a consistent HIV prevention effort within their facility.
Methods: The intervention included 4 phases: 1) observation and analysis of the homeless population and service providers; 2) HIV education for shelter staff and volunteers; 3) training of designated staff HIV educators for each facility; and 4) development of alternative media for the targeted population including an HIV-related board game for the homeless client.
Results: The program has operated for 10 months with in-house HIV prevention programs initiated in 6 shelters servicing approximately 70% of the identified homeless population. Clinic staff and caseworkers have seen a marked increase in the number of client originated requests for HIV information and condoms. HIV workshops for clients were not conducted in any shelters prior to the intervention. Subsequently, 11 workshops are conducted monthly in 4 shelters by shelter staff and volunteers. Also, 2 shelters have integrated HIV prevention information into their normal client counseling sessions.
Conclusion: Due to the multiplicity of problems and issues for which the homeless client regularly accesses shelter settings, HIV prevention efforts are effective when integrated into existing services of the shelter system.

S.D.906

SURVIVOR SYNDROME IN THE GAY COMMUNITY

Wayment, Heidi A.*; Kemeny,M.E.**; Silver,R.C.***
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**UCLA School of Medicine, Los Angeles, California, USA, ***Department of Social Ecology, UC Irvine, Irvine, California, USA.

Objective: Gay men who know they are HIV seronegative can be considered "survivors" following the work of R.J. Lifton (1980). The aim of this study was to determine factors which would predict various manifestations of the "survivor syndrome" among HIV negative members of the gay community.
Methods: Subjects were 129 homosexual and bisexual men participating in the UCLA Multicenter AIDS Cohort Study (MACS) who know they are HIV negative. Structural equation modeling was used to assess the relationship of 6 psychosocial and behavioral variables to 3 manifestations of survivor syndrome: survivor guilt, fatalistic vulnerability, and psychic numbing.
Results: HIV- gay men who reported having had more sexual partners prior to 1985 were more likely to feel guilty about their HIV status than those who had fewer sexual partners. Subjects with a greater percentage of close friends at various stages of HIV infection (i.e., HIV+, ARC, AIDS) were more likely to report perceptions of vulnerability to AIDS than those who had a lower percentage. Satisfaction with social support from gay friends appeared to protect HIV- gay men from experiencing survival guilt and vulnerability to AIDS. Other indirect relationships among the predictor variables will be discussed.
Conclusion: Some HIV- gay men are manifesting a survivor syndrome which is predicted by factors similar to those documented in other communities responding to significant loss of life.

S.D.907

LIVING HEALTHY WITH HIV

KARL, SCOTT B.; ECK, ENID K.
SOUTHERN CALIFORNIA PERMANENTE MEDICAL GROUP
LOS ANGELES MEDICAL CENTER, LOS ANGELES, CALIFORNIA, U.S.A.

OBJECTIVE: To develop a patient education program for asymptomatic HIV + patients in a health care setting that seeks to empower patients to take control of their health, exercise sound principles in maintaining or improving their level of health, and to gain knowledge about the benefits of early intervention in the HIV disease process.
METHODS: A four part modular class series for asymptomatic HIV + patients of the Kaiser Permanente Los Angeles Medical Center was developed. Topics include: Coping & Resources, Overview of HIV Infection, Safer Sex, Immunologic Load, and Understanding Treatment. The presentations for each segment encompass a wide range of experiences and learning modalities. The four week program repeats every other month to better accommodate smaller groups, leaving ample time to answer questions and facilitate group interaction. Each class concluded with a written evaluation.
RESULTS: The class series has been well attended and received. From the evaluations participants identified specific knowledge gained, behaviors they are committed to changing, and greater levels of self care and competence in monitoring and reporting symptoms appropriately. 100% stated they would recommend the class series to a friend.
CONCLUSION: With rising numbers of those afflicted with HIV and the costs of their care, it will become increasingly important to shift emphasis to outpatient preventatively directed medical care and early intervention. A patient education program for asymptomatic HIV + patients is another resource to inform, to motivate, and to encourage patient wellness.

S.D.908 TRADITIONAL CHINESE MEDICINE AND TREATMENT OF AIDS.

Peng Li, He Jihua.
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AIDS, which is also known as "Super cancer," has been concerned by the people all over the world. However, no means of prevention and treatment is presently available. The authors have been researching the theory and the achievements made on immunology of traditional Chinese medicine (TCM) and have been studying the recent advances on AIDS and the informations about the treatment for AIDS by TCM in the world. Treatment of AIDS generally includes three aspects, that are anti-viral, anti-opportunistic infectious and strengthening the body immunofunction. The authors suggest that TCM can simultaneously deal with the three aspects mentioned to improve the body the body immunofunction and, as a result, prolong the life-span of AIDS patients. But, data from laboratories are not enough, especially studies on actions of HIV and controlled clinical treatment observations are lacking. All these remains to be further studied.

S.D.909 A UK PROGRAMME TO INVOLVE YOUNG PEOPLE ACTIVELY IN THE EVALUATION AND PLANNING OF AIDS/HIV INFORMATION PROJECTS FOR THEIR PEERS

Hutton, Ceri*, Jay, M*, Kelmanson, A* *National AIDS Trust (NAT), London, UK

Objective: to systematically increase the involvement of young people in policy development for AIDS/HIV information campaigns directed at youth.
Methods: to mark World AIDS Day 1989, whose theme was AIDS and youth, the NAT organised a one-day information event in London called "Living for Tomorrow". Participants, aged 16-18, were drawn from public and private schools. The programme included live theatre and video presentations on HIV/AIDS as well as expert panels and personal contributions from people with AIDS. Participants were asked for immediate assessments of different types of presentation and to produce follow-up evaluations. The UK Minister of Health, Virginia Bottomley, was present to respond to questions and proposals for government AIDS Campaigns.
Results: the World AIDS Day event was a successful pilot and planning for an extended programme has followed.
Conclusions: 16-18 year olds are aware of their need for practical, straightforward, and well-presented information on AIDS/HIV. "Adult" organisations should consider working closely with young people to make health education programmes more credible and effective. The NAT has been encouraged to build on the experience gained on World AIDS Day 1989 to establish a nationwide series of out-of-school HIV/AIDS information forums for young people. The programmes, organised by the NAT, will invite participants to assess current HIV/AIDS information and to present their views and ideas to policy makers at all levels in the health/education system, while building a network of articulate young people concerned with and informed on the issue.

S.D.910 INFLUENCING CHOICES OF MEDICAL STUDENTS TO HIV-RELATED CAREERS

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JSI Research and Training, Boston, MA

OBJECTIVES: There is some evidence that medical students are choosing careers in areas of medical practice where, it is thought, they would avoid the psychological and economic burden of HIV care. We wanted to process their feelings about an HIV practice and demonstrate how such a practice can be emotionally rewarding and economically viable.
METHODS: Under a Federal grant, we developed programs that focused on the clinical and psychosocial aspects of HIV infection. It was a program objective to influence the career decisions of medical students while they were in early stages of professional development: 1.) a four-part session at a university in rural New England focusing on the psychosocial aspects of HIV infection with one session devoted to the effects of an HIV practice on physicians in general and the presenter in particular; 2.) the creation of a scholarship program to allow one medical student to do an elective in the practice of a primary care provider with an active HIV practice; 3.) patient interviews in a small group setting with subsequent analysis especially of psychosocial issues. A pre- and post-session evaluation instrument was used to measure changes in knowledge, attitudes and behavior after programs 1 and 3. A daily log of the students' impressions was kept for program 2. This log served as a basis for weekly meetings with the elective advisor.
RESULTS: We documented a change of knowledge, attitudes and behavior in this medical student population toward a more caring and empathetic stance. We also saw how students were able to see the positive aspects of a primary care career in AIDS work and to keep the negative aspects in perspective.

S.D.911 CLINICAL MANAGEMENT GUIDELINES OF HIV INFECTION AND AIDS, AN ALGORITHM APPROACH

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Gottlieb, L.***; Susskind, O.***; Margolis, C.Z.****; Tarantola, D.*
*Global Programme on AIDS, World Health Organization, Geneva, Switzerland.
**University of California, San Francisco, California, USA, ***Harvard Community Health Plan, Boston, Massachusetts, USA, ****Ben Gurion University, Beer Sheva, Israel

With the increasing number of AIDS cases and illness associated with HIV infection, the clinical management of these patients becomes an expanding component of national AIDS programmes. Clinical management guidelines as developed by WHO provide a frame for a consistent and logical approach for the diagnosis and treatment of HIV infection and AIDS. They can be described as "appropriate care guidelines" taking into consideration the available resources. Being generic in format, they provide source material for countries wishing to develop national guidelines for clinical management of HIV infection and AIDS. These guidelines should assist health care personnel in the diagnosis, medical management and counselling of HIV infected persons and persons with AIDS. They will provide psychological support to health care personnel being faced with decision making in a mostly fatal disease. By identifying diagnostic tests and appropriate treatment they can improve resource allocation and planning, additionally the guidelines can serve as a teaching aid. The clinical management guidelines are partially presented in an algorithm format which will facilitate the process of adaptation and evaluation.

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Th.A.68, Th.A.292, F.A.249, S.A.2, S.A.329, 1126, 2185
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Th.C.757, Th.D.823, Th.D.833, Th.D.834, Th.D.886, F.D.57, F.D.871, S.C.644
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Th.C.41, Th.C.606, Th.C.616, Th.D.125, Th.D.803, Th.D.804, Th.D.806, F.C.545, F.C.568, F.C.569, F.C.575, F.C.630, S.C.219, S.C.605, S.C.665, S.C.666, S.C.667, S.C.670, S.C.671, 1144, 3049, 3115, 3176, 4005
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Th.B.362, Th.C.97, Th.C.99, Th.C.110, Th.C.565, Th.C.572, Th.C.573, Th.C.575, Th.C.577, Th.C.578, Th.C.630, Th.C.631, Th.C.709, Th.C.738, Th.C.760, Th.C.766, Th.D.775, Th.D.778, Th.D.785, Th.D.863, Th.D.887, F.B.455, F.B.465, F.C.44, F.C.549, F.C.566, F.C.567, F.C.587, F.C.591, F.C.594, F.C.598, F.C.600, F.C.604, F.C.645, F.C.689, F.C.727, F.C.728, F.C.736, F.C.738, F.C.746, F.C.750, F.C.763, F.D.878, S.B.517, S.B.519, S.C.569, S.C.574, S.C.581, S.C.585, S.C.658, S.C.672, S.C.673, S.C.675, S.C.676, S.C.690, S.C.747, S.D.834, 2052, 2129, 3020, 3038, 3048, 3055, 3152, 3165, 3176, 3178, 3188, 3191, 3194, 4050

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Th.B.496, Th.C.584, Th.C.588, Th.C.723, F.C.703, F.C.705, F.C.728, S.C.679

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Th.C.587, Th.C.590, Th.C.592, Th.C.702, F.C.215, F.C.222, F.C.551, F.C.558, F.C.559, F.C.564, F.C.667, F.C.686, F.C.755, S.C.543, S.C.551, S.C.552, S.C.561, S.C.741, S.C.743, S.C.751, S.C.761, 2094, 3011, 3080, 3093, 3153, 3156, 3169

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Th.A.336, Th.A.338, Th.A.350, Th.A.356, Th.A.357, S.A.77, S.A.79, 1048, 1049, 1050, 1059, 1131
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Th.A.338, Th.A.350, Th.A.356, F.A.211, S.A.258, S.A.260, 1058
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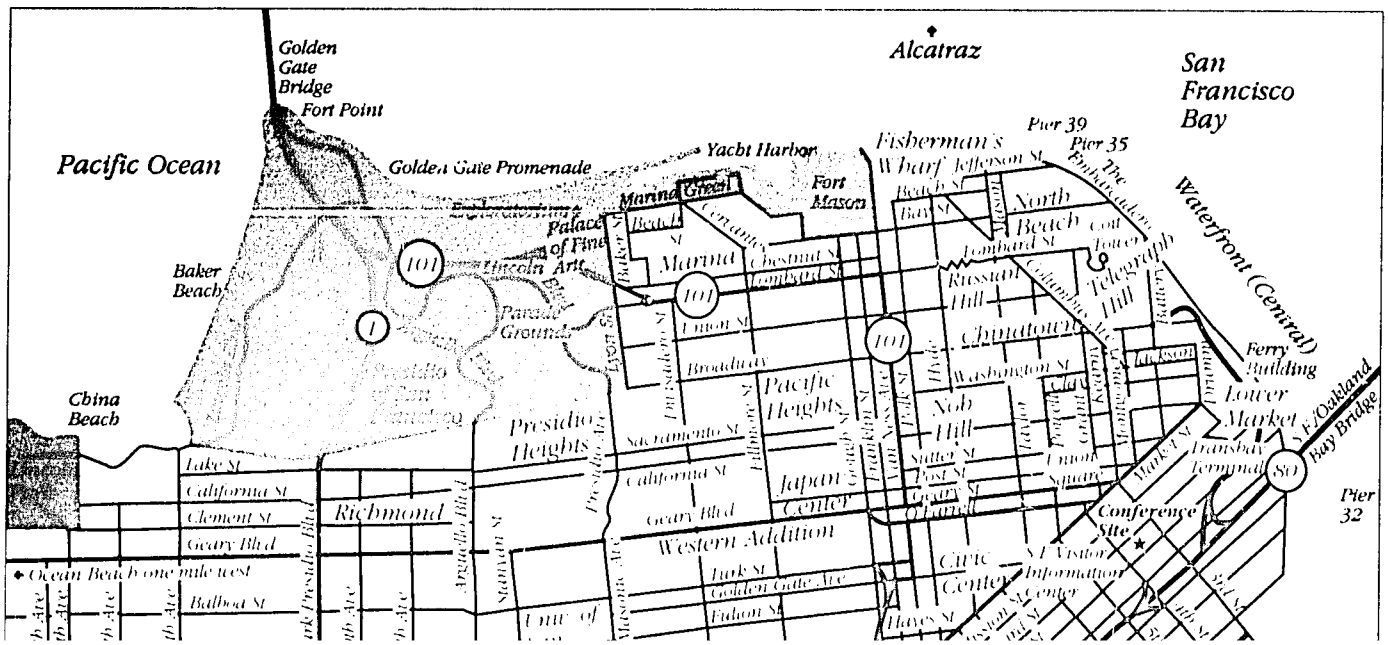
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