

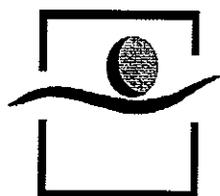
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MOROCCO

**30 Years of Collaboration Between
USAID and the Ministry of Health**

A Retrospective Analysis

STI/HIV/AIDS



Morocco

30 YEARS OF COLLABORATION BETWEEN USAID AND THE MINISTRY OF HEALTH

A RETROSPECTIVE ANALYSIS

STI/HIV/AIDS

**USAID/Morocco
Morocco Ministry of Health**

**MEASURE *Evaluation*/Tulane University
USAID Cooperative Agreement no. HRN-A-00-97-00018-00**

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OVERVIEW OF THE RETROSPECTIVE ANALYSIS

Purpose of the Series of Reports

This series of four reports details the productive collaboration between the United States Agency for International Development (USAID) and the Moroccan Ministry of Health (MOH) spanning a period of over 30 years. It focuses on four health areas in which USAID support has been the greatest: family planning, child survival, safe motherhood, and sexually transmitted infections (STIs)/HIV/AIDS.

Morocco has made tremendous strides in its health programs, as evidenced by steadily improving health outcomes over time. In part because of this success, USAID began a strategy of “withdrawal” from Morocco, which was slated to begin in the year 2000. Subsequently USAID decided to maintain a modest level of funding through 2004 to support the activities of a “mature program,” including sustainability and decentralization.

What was accomplished during the more than thirty years of collaboration between the MOH and USAID? This series of reports is designed to address that question. The specific objectives of this retrospective analysis are:

1. To document the evolution of the programs in family planning, child survival, safe motherhood, and sexually transmitted infection/AIDS under the Ministry of Public Health (MOH) – USAID collaboration;
2. To place the health initiatives in Morocco in a larger international context as a means of better understanding the evolution of programs in Morocco; To present measurable results in health status indicators that link directly to these health initiatives;
3. To identify keys to the success of specific programs that may represent valuable lessons learned for programs in other countries; and
4. To recognize the past obstacles and continuing challenges to the implementation of health programs in the four areas.

Many factors contributed to improvements in health status in Morocco over the past three decades: improvements in socio-economic conditions, exposure to ideas from other countries, investments from other donors, among other factors. Whereas this series of reports focus almost exclusively on the MOH-USAID collaboration, other factors and other parties share in the credit for the progress made to date. Notwithstanding, this series of reports has been prepared to demonstrate the sustained investment by USAID in the Moroccan health programs and the results achieved to date.

The current report covers the period from the early 1965 (when family planning first surfaced as a concern) to 2000, when Phase V funding ended. USAID continues to provide bilateral support to the MOH through an agreement (Assistance for Family Planning and Maternal-Child Health, Accord 608-0223) that aims at expanding the resource base and capacity for sustainable development in the period 1999-2005, but the

current activities are outside the scope of this retrospective analysis of the Moroccan program.

Audience for this Series of Reports

This series provides a comprehensive overview of the major events that occurred in relation to the four health areas in question. It will serve as a reference to MOH personnel, donor agency staff, international visitors, academics, and others with the patience and appetite for a relatively detailed account.

Methodology

A team of MEASURE *Evaluation* staff and independent consultants conducted the analysis for this series of reports. Team members conducted in-depth interviews with key informants and reviewed relevant program documents. The purposive sample of key informants included the following:

- Persons with substantial experience in the management of some aspect of the four health program areas;
- Personnel from both the central and regional/provincial level;
- Personnel from both the public and private sector;
- Personnel from non-governmental organizations (NGOs);
- Representatives of donor agencies; and
- Persons outside the program (researchers, economists, sociologists, demographers).

A complete list of all persons interviewed appears in Appendix A.

Limitations

The team encountered several constraints in conducting this retrospective analysis. First, all of the in-depth interviews — especially those relating to events in the distant past — were subject to recall bias. Respondents were most gracious in attempting to reconstruct events from over a decade ago, but there is an inherent bias in doing so.

Second, the key informants included persons closely involved in the program who tended to have a favorable outlook toward these health initiatives. The team did not attempt to identify and interview persons who might have provided alternative interpretations to this set of events, given the difficulty of drawing up any type of systematic list of such individuals. The team did, however, try to solicit information on both positive and negative aspects of the program from those interviewed, and most respondents were quite forthcoming.

Third, it was difficult and in some cases impossible to obtain financial information on components of MOH activities funded by other donors. Thus, the team was not able to

assess the financial contribution made by USAID relative to the total amount of international aid for each sector.

Fourth, the existing documentation was more extensive for some programs than others and for some periods than others. Although four reports were prepared, the descriptions of the programs herein do not do justice to the many triumphs and frustrations of designing and implementing these activities.

Summary of Findings – STI/HIV/AIDS

The first case of AIDS in Morocco was detected in 1986. Since that time, an estimated 800,000 Moroccans are believed to be HIV-infected. During the early days of the HIV epidemic in Morocco, the MOH's main activities focused on procurement and management of medications, which at the time was limited to drugs treating the opportunistic infections characteristic of AIDS patients. MOH prevention messages primarily focused on the most mobile populations and on health care providers. In the early 1990s, the MOH, with assistance from USAID, decided to implement the syndromic approach to STI case management in Morocco in an effort to improve the management of STI cases and control the HIV epidemic. This approach became the official STI treatment strategy and primary means of HIV prevention in Morocco.

Although HIV prevalence in Morocco is low, leading to less USAID funding for HIV prevention activities than for other programmatic areas (e.g., family planning), STI/HIV prevention has been an integral part of Morocco's reproductive health activities during the last two decades. While the bulk of STI/HIV/AIDS activities have been carried out by the MOH and other donors, USAID has supported this critical area and contributed to the development of the program.

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ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
AIDSCAP	AIDS Control and Prevention Project - FHI
ALCS	<i>Association de Lutte Contre le SIDA</i> - Association for the Fight Against AIDS
ALCS	<i>La Ligue Marocaine de la Lutte Contre les MST/SIDA</i> - The Moroccan League for the Fight Against STIs/AIDS
AMPF	<i>Association Marocaine de Planification Familiale</i> - Moroccan Family Planning Association
AMSED	<i>Association Marocaine de Solidarité et de Développement</i> - Moroccan Association of Solidarity and Development
CNOPS	<i>Caisse Nationale des Organismes de Prevoyance Sociaux</i> - National Social Contingency Fund
DELM	<i>Direction de l'Epidémiologie et la Lutte Contre les Maladies</i> - Office of Epidemiology and the Fight Against Illnesses
DHS	Demographic and Health Survey DP <i>Direction de la Population</i> – Direction (Office) of Population
DPES	<i>Direction de la Prevention et de l'Encadrement Sanitaire</i> – Office of Prevention and Health Training
DPSI	<i>Division de la Planification, de la Statistique, et de l'Informatique</i> - Division of Planning, Statistics & Computer Science
EEC	European Economic Community
EMRO	WHO Eastern Mediterranean Regional Office
FHI	Family Health International
FP	Family Planning
FP/MCH	Family Planning/Maternal & Child Health
FSTI	<i>Fonds de Solidarité Thérapeutique Internationale</i> - International Therapeutic Solidarity Fund GOM Government of Morocco
HAART	Highly Active Anti-Retroviral Therapy
HIV	Human Immunodeficiency Virus
HSV	Herpes Simplex Virus
IEC	Information, Education and Communication
INH	<i>Institut National d'Hygiène</i> - National Health Institute
IUD	Interuterine Device
JHPIEGO	Johns Hopkins Program for International Education in Reproductive Health, Gynecology and Obstetrics
KABP	Knowledge, Attitudes, Behaviors, and Practices Survey
MOH	Ministry of Health
MPH	Master of Public Health
MST/SIDA	STI/AIDS
NGO	Non-governmental Organization
OPALS	<i>Organisation Pan-Africaine de la Lutte Contre le SIDA</i> - Pan-African Organization for the Fight Against AIDS

PI	Prevention Indicator
PNLS	Programme National de la Lutte Contre le SIDA - National Program for the Fight Against AIDS
RH	Reproductive Health
RTI	Reproductive Tract Infection
SIDA	<i>Syndrome d'immuno-déficience acquise</i> - Acquired Immune Deficiency Syndrome (AIDS)
SIDA	Swedish International Development Authority
SMI/PF	<i>Santé Maternelle-Infantile/Planification Familiale</i> - Maternal Child Health/Family Planning
SOMARC	Social Marketing for Change Projects - Futures Group
SSE	<i>Service de la Surveillance Epidémiologique</i> - Service of Epidemiological Surveillance
STI	Sexually Transmitted Infection
TIR	Targeted Intervention Research
UNAIDS	Joint United Nations Program on HIV/AIDS
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
USAID	U.S. Agency for International Development
VCT	Voluntary Counseling & Testing
WHO	World Health Organization

STI/HIV/AIDS

I. INTRODUCTION

The first diagnoses of an immune deficiency syndrome in gay men were reported in the United States in 1981, and the condition was termed the acquired immune deficiency syndrome or AIDS.¹ In 1982, the human immunodeficiency virus (HIV) was implicated as the cause,^{2,3} yet almost 20 years later there is still no cure for HIV infection nor an effective vaccine. Worldwide, an estimated 5.4 million men, women and children were infected with HIV in 1999, and an estimated 34.3 million were living with HIV/AIDS. Approximately 18.8 million thus far have died as a result of AIDS, with 2.8 million of those deaths occurring in 1999.⁴

In Morocco, the first case of AIDS was detected in May of 1986 in a man infected by blood transfusion during surgery in France. Since that time, and as of the most recent surveillance report (June 30, 2000), 780 cumulative cases of AIDS have been reported in Morocco,⁵ and an estimated 8,000 Moroccans are HIV-infected. Similar to the epidemic in the United States and Western Europe, HIV-1 subtype B is the predominant form of the virus found in Morocco.^{6,7}

Historically, sexually transmitted infections (STIs) have received little attention, partly because of the socially embarrassing nature of these infections, and partly because of the limited morbidity associated with them. However, it has become increasingly clear that STIs and certain vaginal infections are associated with increased rates of HIV transmission and acquisition.^{8,9,10,11,12,13,14} As further evidence of this link, in 1993, a randomized community intervention trial in Mwanza, Tanzania, demonstrated that on a population level, STI treatment could be used to reduce HIV transmission by as much as 40 percent.¹⁵ Although another community randomized trial in Rakai, Uganda, showed no effect of mass STI treatment on HIV incidence,¹⁶ it is thought that the use of intermittent mass treatment rather than punctual treatment of symptomatic individuals, the mature phase of the epidemic, and the high prevalence of viral (and uncurable) STIs were responsible for the lack of effect. Morocco more closely mirrors Mwanza in that the epidemic is still in the nascent stage, and rates of curable bacterial STIs are higher than viral STIs. Thus, it is an appropriate setting for syndromic management of STIs as a measure of HIV control, and the decision to implement this approach was made in 1994.

STI/HIV/AIDS is an area of vital interest to USAID programs worldwide and is one of the four major program areas in the Population, Health, and Nutrition sector. Worldwide, USAID has committed more than \$800 million to HIV/AIDS programs to develop innovative approaches to HIV/AIDS prevention, and to build community capacity to slow the spread of the epidemic.¹⁷ Although HIV prevalence in Morocco is low, leading to less USAID funding for these activities than other program areas, STI/HIV prevention is an

integral part of Morocco's reproductive health activities. Any discussion of USAID's contribution to reproductive health in Morocco would be incomplete without addressing the role USAID has played in STI/HIV prevention. Even though the bulk of STI/HIV activities over the years have been carried out by the MOH and other donors, USAID has exercised considerable leadership and support for this critical area and has contributed significantly to the development of the program. Therefore, we include here an overview of all STI/HIV activities, and situate USAID's contribution within the larger context.

Chief partners in STI/HIV prevention in Morocco include various entities of the Ministry of Public Health (MOH), numerous non-governmental organizations (NGOs), and a variety of international organizations and donors (Figure 1). The bulk of the curative activities are carried out by the MOH with support from international organizations and donors, while most of the prevention activities are undertaken by NGOs. In contrast to family planning (where USAID has been by far the largest donor) and child survival (where it has also played a major role), USAID's contribution in the area of HIV/AIDS has been small relative to other donors. This section provides a historical overview of MOH activities in STI/HIV/AIDS to which USAID has made useful but limited contributions. These contributions are described more fully at the close of the chapter.

Figure 1. Principle Partners in STI/HIV Prevention Activities in Morocco

Ministry of Public Health	Service MST/SIDA- Programme National de Lutte Contre le SIDA Institut National d'Hygiène Service de la Surveillance Epidémiologique Service des Maladies Infectieuses – Hôpital Ibn Rochd, Casablanca Hôpital Ibn Sina, Rabat Centre National de la Transfusion Sanguine
Non Governmental Organizations (NGOs)	ALCS – Association de la Lutte Contre le SIDA AMSED – Association Marocaine de Solidarité et de Développement OPALS – Organisation Pan-Africaine de la Lutte Contre le SIDA Ligue Marocaine de Lutte Contre les MST La Société Maghrébine de la Recherche et la Lutte Contre le SIDA
International Organizations/Donors	USAID WHO UNAIDS European Economic Community (EEC) UNFPA UNDP World Bank

II. STAGES AND ACCOMPLISHMENTS

The STI and HIV epidemics in Morocco have evolved through four distinct phases. These stages defined the environment for planning and conducting prevention activities and are marked by several notable accomplishments.

- Pre-HIV Era
- Introduction of HIV/AIDS to Morocco
- Improved STI Case Management to Control HIV
- Treatment of HIV/AIDS

A. Pre-HIV Era

Anecdotal information suggests that syphilis was endemic when the French colonists arrived in Morocco in 1912. Although a treatment policy dramatically reduced the prevalence of endemic syphilis, sexual transmission continued and syphilis remained the most commonly diagnosed STI for many years. Despite the frequency of STIs, the Moroccan social environment is conservative and they were rarely discussed as a problem. Treatment and reporting were based on a combination of clinical and etiologic diagnoses, and cases were merely noted in clinical records. Prior to the AIDS era and the creation of the *Service des Maladies Sexuellement Transmissibles et du SIDA (syndrome d'immuno-déficience acquise) [MST/SIDA]*,^a STI control was only a small part of a variety of activities aimed at fighting infectious disease housed in the *Direction des Affaires Techniques*.^b In the 1980-85 five-year strategic plan for the MOH, STIs were barely mentioned among the pressing public health problems.

B. Introduction of HIV/AIDS to Morocco

In May of 1986, the first case of AIDS was reported in Morocco. Prior to that time, the Ministry of Health had created a *Comité de Surveillance*^c in 1983 to monitor the AIDS situation and prepare for the first cases. Approximately six months after the first AIDS case was detected, the Ministry of Health created the *Comité National de Lutte Contre le SIDA*.^d This committee was composed of 12 Ministry of Health personnel with a range of expertise, including infectious disease experts, immunologists, laboratory scientists, representatives of the national blood transfusion center, and military physicians. The primary activities were procurement and management of medication, which at the time was limited to drugs for the multitude of opportunistic infections characteristic of AIDS patients.

In February of 1988, the *Service MST/SIDA* was created within the *Direction de la Prévention et de l'Encadrement Sanitaire (DPES)*^e [the precursor to the present-day *Direction de l'Epidémiologie et la Lutte Contre les Maladies (DELM)*]^f, with the following objectives: (1) document AIDS cases and create a surveillance system; (2) initiate HIV testing in blood transfusion centers; (3) create immunology laboratories (CHU Casablanca, Military Hospital); (4) prepare a guide for clinicians on identification and treatment of STI/HIV; and (5) create IEC materials for health professionals and the

^a STI/HIV Department

^b Division of Technical Affairs

^c Surveillance Committee

^d National AIDS Prevention Committee

^e Division of Prevention and Health Training

^f Division of Epidemiology and Communicable Disease Control

general public. The first educational seminar was conducted in 1988 among emigrants returning to Morocco for their annual vacation and focused on providing them with basic information about AIDS. Health personnel were stationed at the borders and handed out informational pamphlets as Moroccans living abroad entered the country. The first World AIDS Day in Morocco was celebrated in December of that same year and included Luc Montagnier (one of the discoverers of the HIV virus). Messages were targeted to political decision makers to encourage efforts for HIV prevention and control.

During the early days of the HIV epidemic in Morocco, IEC efforts were focused on the most mobile population (Moroccan emigrants) and on health care providers. The message to health care providers was "*Protégez-vous du SIDA*" (Protect yourself from AIDS). Due to taboos about discussing sexuality, multiple partners, and condom use, messages to the general public were limited to "*Informez-vous sur le SIDA*" (Find out about AIDS). Moroccan hemophiliacs did not receive contaminated clotting factor concentrates, and thus, infection of hemophiliacs has never been a problem.¹⁸ Intra-venous (IV) drug use is not widespread in Morocco, and a very small number of HIV infections occur in this population (approximately 6.5 percent of all reported cases in 2000).¹⁹

C. Improved STI Case Management to Control HIV

Three major sources provide STI care in Morocco: (1) the public health sector, (2) the private sector, and (3) directly through pharmacies. Most individuals seeking care in the public health sector are seen in primary health care centers, with more difficult cases referred either to gynecologists, or specialized dermatovenereologists in central reference centers. When medication is available in the public health sector, it is provided free of charge to patients. However, stock-outs are frequent and patients are often given a prescription to fill at the pharmacy when the stock has been depleted. Although STI care is available for both men and women in the public health sector, men rarely use the primary care facilities and prefer to seek care directly from the pharmacy or in the private sector. It is estimated that up to 75 percent of all STI cases are treated in the private sector. In an effort to increase service utilization in the public health sector and to improve STI case management, the MOH decided to assess and implement the syndromic approach to STI case management in Morocco.

Box 1. Syndromic Management of Sexually Transmitted Infections

A syndrome is defined as a set of easily elicited symptoms and easily recognized signs associated with a limited number of well-defined etiologies. Major STI syndromes include urethral discharge, genital ulcers, abnormal vaginal discharge, and lower abdominal pain. Typical etiologies include gonorrhea or chlamydia for urethral discharge; syphilis or chancroid for genital ulcers; bacterial vaginosis, candidiasis or trichomoniasis, and occasionally gonorrhea or chlamydia for abnormal vaginal discharge; and gonorrhea or chlamydia for lower abdominal pain. In syndromic management a flowchart including signs, symptoms, and an STI risk assessment guide a clinician through a decision tree to a final treatment, based on the syndrome rather than a defined pathogen. Expensive laboratory tests are not employed and patients can be treated immediately, which reduces secondary transmission and complications from untreated infections. The use of flowcharts standardizes diagnosis, treatment, referral, and reporting, allowing for improved surveillance and program management. Limitations include lack of utility for asymptomatic infections; relatively low sensitivity and specificity compared to laboratory testing for some infections; and false positive diagnoses leading to potential social problems and unnecessary use of drugs.

Adapted from STI Care Management. King K. Holmes and Caroline A. Ryan, *In Sexually Transmitted Diseases*, Third Edition. King K. Holmes, P. Frederick Sparling, Per-Anders Mardh, Stanely M. Lemon, Walter E. Stamm, Peter Piot, Judith N. Wasserheit, eds. McGraw-Hill, New York, 1999, p 655-656.

● **Groundwork to Introduce the Syndromic Approach to STI Case Management**

With the release of the Mwanza trial results, indicating the effectiveness of syndromic management of STI in reducing HIV incidence, a feasible HIV control strategy was made available for the first time. In 1994, USAID contracted with FHI under the AIDSCAP project to lay the groundwork to implement the syndromic approach to STI case management in Morocco (see Box 1). The AIDSCAP project conducted three major baseline studies:

1. An algorithm validation study,
2. An ethnographic study, and
3. An evaluation of the quality of STI care.

Algorithm validation and STI prevalence study. As a necessary first step, a pilot study to evaluate the algorithms recommended by WHO for syndromic management of STI was conducted.²⁰ At the same time, this study collected the first multi-site prevalence data on sexually transmitted infections in Morocco, as well as some of the first Morocco-specific risk factor data. Laboratory capacities were strengthened, both at the provincial level in the three pilot provinces, and at the national level (*Institute National d'Hygiène*^a (INH))

^a National Institute of Hygiene.

where a national STI reference laboratory was established. Results from the study were presented at the XI International Conference on AIDS in Vancouver in 1996^{21,22} and in a peer-reviewed journal.²³ As a result of the pilot study, the WHO algorithms for vaginal discharge and lower abdominal pain were modified and adapted to the Moroccan context. A first draft of a manual to train health care provider in syndromic management of STIs was also produced in collaboration with the MOH, and served as the foundation for the training materials developed under the EEC project (described below).

Ethnographic study. The second study conducted under the AIDSCAP project was a targeted intervention research (TIR) study (see Box 2). This ethnographic study gathered information on perceptions of and health care seeking behavior for STI from members of the general population, as well as from health care providers. Using the information gathered on patients' vocabulary for and perceptions of reproductive tract infections (RTI), provider training was augmented to include sessions integrating common language and traditional beliefs for more effective communication with patients. This study was presented at an international conference on STIs in Seville, Spain in 1997,²⁴ in book-form for Moroccan physicians (in French),²⁵ and in two peer-reviewed journal articles.^{26, 27}

Box 2. Targeted Intervention Research (TIR) on Sexually Transmitted Illnesses

Targeted Intervention Research is small-scale social science research conducted specifically to answer programmatic questions. In-depth individual interviews gather information on the community's perspective on sexually transmitted illnesses and STI care services. The objectives of a TIR study are to:

- Understand the issues surrounding illness management, gender-related access to treatment, partner notification, and post-treatment behavior;
- Train STI service providers to communicate more effectively with STI patients;
- Improve service delivery considerations such as cost, quality of care, and provider-client interaction; and
- Develop effective communication interventions to increase demand for STI services.

Adapted from: The Manual for Targeted Intervention Research on Sexually Transmitted Illnesses with Community Members. Deborah L. Helitzer-Allen and Hubert A. Allen, Jr., AIDSCAP, 1994.

Evaluation of the quality of STI care. The final baseline study conducted under the AIDSCAP project was an evaluation of the current state of STI care in the three primary services delivery points: public health centers, private physicians, and pharmacies. Data were collected to calculate WHO Prevention Indicators 6 & 7 (PI 6 & 7) from health centers, and a modified PI 6 & 7 was calculated to evaluate the care delivered by private physicians and pharmacies (see Box 3). In 1997, PI 6, measuring appropriate medical assessment and treatment, was 13.9 percent for men and 2.7 percent for women. PI 7, measuring appropriate counseling messages, was 2.1 percent.²⁸ The low proportion of

providers who correctly assessed, treated, and counseled STI patients empirically demonstrated the necessity for specialized training in STI care, and provided the necessary information to target the training curriculum to existing needs. Results from this study were presented at the XII International Conference on AIDS in Geneva in 1998,^{29,30} and the methodology was presented in an article published in a peer-reviewed journal.³¹

Box 3. WHO Prevention Indicators (PI)

PI 6: STI Case Management (care)

- Number of individuals presenting with STI in health facilities assessed & treated appropriately (according to national standards)
- Number of individuals presenting with STI in health facilities

PI 7: STI Case Management (counseling)

- Number of individuals presenting for STI care in health facilities who received basic advice on condoms & partner notification
- Number of individuals presenting for STI care in health facilities

From: World Health Organization/Global Program on AIDS: Evaluation of a National AIDS Programme: A Methods Package for Prevention of HIV Infection. Geneva, Switzerland: World Health Organization/Global Programme on AIDS; 1994

● Expansion of the Syndromic Approach to STI Case Management

Based on the results of the AIDSCAP pilot studies, the Ministry of Health elected to adopt the syndromic approach to STI case management as the official STI treatment strategy and primary HIV prevention activity. In 1996, the MOH contracted with the European Economic Community (EEC) to fund the expansion and implementation of the syndromic approach, utilizing the revised algorithms, into 15 provinces. Parallel proposals were also submitted to UNFPA (13 provinces) and UNDP (10 provinces). In a ground-breaking initiative, the MOH arranged donor collaboration to pool the funds provided by the three separate donors. Taking advantage of economies of scale and eliminating duplicative efforts, they were able to expand coverage of the syndromic approach to STI care into all but a few provinces with no further increase in funding. WHO agreed to fund implementation of the approach into the remaining provinces to provide full coverage, and as of July 2000, the MOH effectively implemented the syndromic approach in all 67 provinces in Morocco. In addition to physicians, SMI/PF nurses were also trained in the syndromic approach, enabling them to identify infections in women seeking family planning, and maternal and child health care.

The MOH established an annual internal review process to monitor the implementation of this approach. The first internal review took place from October-November 1999 and utilized a novel methodology. Rather than sending out personnel from the Service MST/SIDA, the evaluation teams were composed of the key individuals involved in the program at the provincial level. These teams traveled to neighboring provinces and evaluated the program as it was implemented by their colleagues in the other provinces.³² In addition to yielding data for the mid-term evaluation, this strategy allowed provincial personnel to see how others had implemented the same program, and it promoted idea-sharing and discussion of common problems.

The first seven provinces to implement the syndromic approach were the subject of the internal review. Overall, 82 percent of the physicians and 80 percent of the SMI/PF nurses had been trained at the time of the review. The number of reported STI cases in these provinces increased overall by 28 percent from 1998 to 1999 (36 percent increase in urethral discharge cases, 32 percent increase in genital ulcer cases, 22 percent increase in vaginal discharge cases). This change, however, was attributed to increased service utilization, resulting from better quality care, and/or to better reporting, rather than to a true increase in the absolute number of STI cases. This hypothesis is further supported by the fact that the greatest increases occurred in male STI syndromes, a group that has historically sought care infrequently in the public health sector. Notably, the MOH now reports STI cases by syndrome rather than by etiology in all provinces. Evaluators also reported difficulty in treating partners, insufficient supply of medication, and stock-outs of condoms for STI prevention, with no recourse made to the generous supply available under the FP activities in the same health center. Some health centers had set up specialized STI appointments and were asking patients to return at another time, rather than treating them on their first contact with the health care system. Additionally, many physicians appeared to have difficulty posing sensitive risk factor questions (e.g., number of partners, new partners, suspicion that partner is unfaithful), and, consequently, many reported systematically performing speculum examinations for all patients, despite a branch of the decision tree that uses risk factor information to arrive at a treatment decision in the absence of a physical exam. Personnel from the SMI/PF Division participated fully in workshops to disseminate these results, further assuring the involvement of and coordination between divisions of the MOH working with reproductive health.

Despite the significant achievement of implementing the syndromic approach to STI care nationwide, certain areas require fine-tuning. Providers reported a categorical refusal by patients to use condoms on many occasions. In some cases not all the physicians in a single health center were trained (e.g., new recruits or transfers) or accepted the syndromic approach. Some health care professionals remain convinced that etiologic diagnosis is more appropriate and believe that Morocco is sufficiently developed to use a more sophisticated approach, despite the fact that the necessary diagnostics are not currently available at the primary health care level. This results in conflicting treatment philosophies, causing problems in the management of drug supplies/stocks. Finally, the algorithms require further adaptation. Concerns have been raised about the format of the

combined vaginal discharge/lower abdominal pain algorithm, and the lack of an obligatory speculum exam. The *Service MST/SIDA* plans to revise the algorithms in collaboration with university gynecologists in the coming year after the second prevalence study scheduled under the EEC project has been completed.

Since WHO made its initial recommendation to implement the syndromic approach for STI case management, numerous studies have been conducted to assess the efficacy of this approach. The consensus to date is that the syndromic approach is effective for managing urethral discharge in men, genital ulcers in men and women, and vaginal discharge in women. In general, however, studies of the accuracy of the treatment algorithms in detecting cervical infections have shown low specificity and low positive predictive value.^{33,34} The ability of the vaginal discharge algorithm to detect cervical infections depends heavily on the prevalence of cervical pathogens. In the Moroccan setting, where the prevalence of gonorrhea or chlamydia is only 5-6 percent among symptomatic women, the clinical signs that suggest cervical infection will rarely be specific, and substantial over-treatment probably occurs. However, until rapid and inexpensive diagnostic tests are developed and become available, the syndromic approach remains the most cost-effective approach to treatment for populations without access to advanced diagnostic techniques.

D. Treatment of HIV/AIDS

At the beginning of the AIDS era in Morocco, treatment focused on fighting opportunistic infections. AZT was introduced in Morocco in 1990,³⁵ but due to problems with acquired resistance, AZT monotherapy was stopped in 1995. In 1996, Highly Active Anti-Retroviral Therapy (HAART) was introduced at the World AIDS Conference in Vancouver, providing the first medication to slow the course of disease without inciting rapid development of resistance. Shortly thereafter, in 1998 it was made available to AIDS patients in Morocco through the NGO *Association de la Lutte Contre le SIDA*^a (ALCS) and the *Service des Maladies Infectieuses* at the Ibn Rochd Hospital in Casablanca.³⁶ Currently HAART is funded by three sources: (1) MOH, (2) French donors FSTI [*Fonds de Solidarité Thérapeutique International*], and (3) CNOPS – the national insurance for government employees. The FSTI provides two of the three drugs, and the third is provided through the combined efforts of the MOH and the CNOPS. HAART is the recommended antiretroviral therapy in Morocco. Patients receive HAART free of charge either through MOH or under the partnership between MOH and FSTI. Individuals infected with HIV who are also CNOPS members (government employees) receive benefits that cover all costs of antiretroviral treatment. MOH annual budget for the purchase of anti-retroviral medication is 2.7 million FF (approximately \$335,000 USD).³⁷ However, already in 2000, these three financial sources were not sufficient in providing support for all eligible patients.

Care for HIV/AIDS patients is organized around two “poles of excellence” or reference centers. One center in Rabat, the *Service de Médecine A*, Hospital Ibn Sina, oversees patients from the northern provinces of the country. The second center is located in

^a People Fighting Against AIDS

Casablanca in *the Service des Maladies Infectieuses*,^a Hospital Ibn Rochd, and oversees all patients in Casablanca and south.³⁸ HAART is initially prescribed and delivered in one of the two reference centers, and subsequent doses are delivered at regional centers. In Morocco, HAART is recommended for individuals who are symptomatic and have a CD4 count of less than 350 or those who are asymptomatic and have a CD4 count of less than 200. There are currently 113 persons on triple drug therapy, all monitored through ALCS (which also pays for transportation and exams, and coordinates appointments for HIV-infected individuals). Of these, 63 (56 percent) are fully paid for with the aid of FSTI funds. The 50 others are paid for by insurance (CNOPS) and/or the patients themselves (e.g., the MOH pays for two of the three drugs, and the insurance/individual pays for the third - between 2100-3500 DHS or approximately \$200-\$350 USD).

At the time of this analysis, viral loads were not being measured in MOH laboratories at the INH, but rather in a private laboratory, with the costs being subsumed by ALCS. However, the INH was only waiting for a supplier contract to be negotiated before commencing and is scheduled to begin performing viral load tests by October, 2000. The MOH and ALCS are currently participating in an evaluation study by UNAIDS on the feasibility of triple-drug therapy in developing country settings, and they presented preliminary results at the 13th World Conference on AIDS in Durban.³⁹

III. DEFINING ISSUES FOR THE MOROCCAN STI/HIV PROGRAM

STI/HIV prevention programs are necessarily a function of the environments in which they operate. For Morocco, three characteristics of the epidemiologic and cultural context define the program:

- **Relatively Low HIV Prevalence**

The prevalence of HIV in Morocco is low relative to other areas of the world. Among blood donors, it was 0.02 percent in 1999, and in the group at highest risk (TB patients), it only reached 0.94 percent.⁴⁰ Numerous experts had predicted that a sharp increase in the number of cases was likely, given the relatively high STI rates. Nevertheless, this has not yet come to pass and the reasons remain unknown.

- **Relatively High STI Prevalence among Symptomatic Women**

Although a recent study showed that the prevalence of STI among women attending family planning and antenatal clinics was not greater than 5 percent,⁴¹ data from the AIDSCAP study indicate that approximately 23 percent of women presenting to primary health care centers with RTI symptoms had at least one curable RTI (excluding viral conditions such as herpes simplex virus, HSV, and HIV infection).⁴² This prevalence was only somewhat lower among symptomatic women in family planning clinics (17 percent), and it indicates a significant level of morbidity, as well as evidence of high-risk sexual behavior.

^a Infectious Disease Service

- **Conservative Society and Cultural Taboos**

Morocco's Muslim culture acts in two opposing fashions. The conservative social mores discourage extra-marital sexual relations, which may contribute to the low rates of HIV transmission. However, these conservative social values also discourage open discussion about sexuality, condoms, and STI/HIV in general. Although the DELM is progressive in their agenda for STI/HIV prevention, they are hampered by this conservative social environment. For example, prostitution is not legally recognized, homosexuality is illegal, and public discussion of condoms as an STI/HIV prevention method (rather than for family planning) is not allowed. By extension therefore, prevention messages cannot be openly targeted to these issues.

IV. MEASURING PROGRESS

National AIDS Control Programs exist to decrease the spread of HIV, increase care for those infected, and minimize social and economic impact on affected communities and families. To accomplish these goals, most programs focus on the proximate determinants of STI/HIV infection and target four major areas: (1) knowledge, attitudes, and sexual behavior; (2) program performance and context; (3) availability and quality of health and other services; and (4) HIV and STI prevalence.^{43,44} Several indicators have been developed to measure and track success over time in these areas. Selected indicators for the Moroccan STI/HIV Program are presented below in Table 1.

Overall, the age at first intercourse, as measured by age at marriage, has increased over time. New AIDS cases have steadily increased, but not at an alarming rate. Knowledge of AIDS has increased over time, although HIV and STI knowledge has been infrequently measured on a population level (in a 1991 DELM study and in the 1997 PAPCHILD survey). Inclusion of such questions in future DHS modules should be encouraged.

Reported STI rates have increased over time, however, as mentioned earlier, probably reflect increased care seeking in the public health care sector rather than true increases in absolute numbers. Rates of syphilis in pregnant women are an excellent indicator of STI prevalence in the general population and changes over time are a good measure of the effectiveness of interventions aimed at reducing STI/HIV transmission. In Morocco, syphilis in pregnant women doubled from 1996 to 1998, but appears relatively constant since 1998. However, the syndromic approach has only recently been introduced and it is too early to expect to see a reduction in syphilis among pregnant women as a result of the program. Anecdotal evidence suggests that the number of IUDs inserted has increased, due to SMI/PF nurses identifying and treating STIs.

Table 1. Selected Indicators for the Moroccan STI/HIV Program

	(Year Measured) INDICATOR							
	1993	1994	1995	1996	1997	1998	1999	2000
Knowledge, Attitudes, Sexual Behavior								
Percent of women age 15-44 who have heard of AIDS	(1991) 62%				83%			
Percent of women 15-44 who know that condoms protect against AIDS					11.1%			
Percent of women 15-44 who know at least one STI					83.5%			
Median age at marriage (age at first sex)	(1987) 18.5 yrs.	(1992) 18.8 yrs.	20.2 yrs.					
Program Performance and Content								
Condoms available for distribution nationwide under STI/HIV program	1,000,000	1,000,000	2,002,000	1,000,000	0	1,500,000	1,500,000	0
Availability and Quality of Health and Other Services								
Proportion of physicians trained in the syndromic approach to STI case management	N/A	N/A	N/A	N/A	N/A		82%	
Proportion of SMI/PF nurses trained in the syndromic approach to STI case management	N/A	N/A	N/A	N/A	N/A		80%	

	1993	1994	1995	1996	1997	1998	1999	2000
Number of Voluntary Counseling and Testing Centers available	4						7	7
Proportion of provinces furnished with STI drugs under the syndromic approach to STI case management	N/A	N/A	N/A	N/A	4%			100%
HIV and STI Prevalence								
HIV Prevalence from Sentinel Surveillance							0.02%	
New AIDS Cases	44	77	57	66	92	92	165	
Total number of STI cases reported	101,065	142,505	150,541	156,772	189,112	212,240	276,750	
Syphilis in pregnant women				0.64%		1.6%	1.49%	

V. KEYS TO THE SUCCESS OF THE MOROCCAN STI/HIV PROGRAM

The Moroccan STI/HIV program has experienced numerous successes, which can be attributed to 11 major initiatives:

- **Official Recognition of STI/HIV and Willingness to Give It Priority**

The DELM has been very progressive in their willingness to discuss culturally sensitive topics such as STI/HIV, sexuality, and condom use and to make them the focus of public health programs. Statistics on the number of AIDS/STI cases are readily available and accessible to the NGOs working in the field, and no attempts are made to hide the fact that STIs occur and represent a significant public health issue in Morocco's Muslim environment. A module on STI/HIV was included in the 1997 PAPCHILD survey, providing concrete evidence of the increasing priority given to STI/HIV control.⁴⁵ Nevertheless, despite these activities, publicity and promotion of condoms remains limited in Morocco.

- **Model for Collaboration Between Donors and Partners**

The collaboration established by the Programme National de la Lutte contre le SIDA (PNLS) between donors is a first for Morocco, and a model for other countries. This ground-breaking initiative expanded existing funding so that the syndromic approach could be implemented nationwide for significantly less money than originally projected. Donor collaboration has also been extended to project activities, with all donors meeting together twice a year with the MOH to review progress and plan future activities. Together the MOH and the donors arrive at a consensus for STI/HIV prevention priorities and activities on a country-wide level. This collaboration has provided a new level of consistency and standardization to donor-funded activities in an environment where, previously, services varied from province to province depending on the donor working in a particular province.

- **Steps Taken Toward Sustainability**

Since the inception of the EEC project to expand the syndromic approach to STIs (1998), the MOH has purchased all medication for the syndromic approach to STI treatment through a World Bank loan. Although this strategy increases the level of national debt, it is evidence of steps taken toward sustainability and represents independence from donor funding.

- **Private Sector Involvement**

Although no statistics are available on the proportion of STI cases treated in the private sector or directly at pharmacies, the *Service MST/SIDA* estimates this to be as much as three quarters of all cases. To address this, the *Service MST/SIDA* prepared training/information sessions on the new MOH treatment recommendations for STI and

syndromic approach for private physicians. The sessions were well attended and owe a large part of their success to the participation of two well-respected professors from the medical school as “trainers.” Similar sessions for pharmacists are planned, but have yet to be implemented.

Drug manufacturers in Morocco are also responding to the new treatment recommendations for STIs. Currently, ciprofloxacin, recommended as a single-dose therapy in the treatment of abnormal vaginal discharge, is sold over the counter in packages of 10 capsules for approximately 200DH (about \$20 USD). This packaging scheme provides too many doses and the cost is prohibitive. Pharmaceutical companies have expressed interest and willingness to provide alternate packaging for ciprofloxacin in a two-capsule box (one for the patient and one for the partner). Although an official agreement has yet to be signed, several companies have submitted bids to produce this alternate packaging.

- **State-of-the-Art Therapies**

In those provinces where the syndromic approach to STI treatment has been in operation for some time, the number of patients who return with STI conditions that did not respond to treatment has been markedly reduced.⁴⁶ The standardized treatments of the syndromic approach are based on antimicrobial sensitivities of STI pathogens, and patients are now getting the appropriate treatment the first time they are seen, rarely returning with persistent infections or complications. Perhaps even more impressive is the fact that Morocco offers HAART to HIV-positive individuals. Very few countries, including many industrialized nations, have been able to instigate this level of treatment. In Morocco, the MOH and ALCS negotiated for reduced taxes, secured donations from French NGOs, and developed the political will necessary to encourage insurance companies to cover the extra costs.⁴⁷ Although the MOH does not currently have the resources to offer HAART to all who are infected, they have accomplished a major breakthrough in establishing the infrastructure for antiretroviral therapy, benefiting those individuals who can fund the therapy on their own. This effort is possible only because of the low HIV prevalence in Morocco. Should this prevalence increase even slightly, the demand for this very costly therapy will quickly outstrip the government’s capacity to provide it free of charge.

- **Effective Sentinel Surveillance Program**

The sentinel surveillance program for HIV infection began in 1993, as a joint effort between the *Service de la Surveillance Épidémiologique (SSE)* and the *Service MST/SIDA*. Sentinel sites include Rabat, Casablanca, Tetouan, Tanger, Agadir, Marrakech, Meknès, Fès, Oujda, and Safi. Surveillance consists of continual monitoring of HIV among blood donors, in addition to annual, anonymous screening of three groups in each site: pregnant women, STI clients, and one additional high risk group specific to the geographic area (examples include tuberculosis patients, taxi drivers, hotel industry personnel). All sentinel surveillance sites are urban, with the exception of one rural site (Sidi Zouine) in the province of Marrakech. Consistent sentinel surveillance studies have allowed the SSE to monitor the progression of the HIV

epidemic in those high risk groups where the first indicators of a significant change in incidence are most likely to be seen.

- **Decentralization of HIV Testing**

Early in the epidemic, HIV testing was available only in the national blood transfusion center. In 1993, ALCS and the MOH collaborated to provide voluntary counseling and testing (VCT) in four large urban centers (Rabat, Casablanca, Tanger, Agadir). However, access to anonymous testing remained limited for many people unable to afford to travel to the available centers. Through the ALCS VCT has now been expanded further into regional centers in Fès, Meknès, and Oujda, expanding access and visibility for the program.

- **Effective Collaboration with NGOs**

The collaboration between ALCS and the MOH has served as a model for the overall MOH-NGO relationship. NGOs focus their efforts on prevention, while the MOH maintains the responsibility for medical care of individuals infected with STIs and HIV. For example, ALCS provides its offices and volunteer physicians for the voluntary counseling and testing centers, and the MOH provides the supplies and medication in the case of seropositivity. *The Organisation Pan-Africaine de la Lutte Contre le SIDA^a (OPALS)* has provided the impetus and volunteer staff to open a neighborhood STI treatment clinic, and the MOH provides the building and a small supply of STI medication. AMSED has begun to collaborate with the MOH in capacity building for NGOs working in STI/HIV prevention and participates in annual meetings held with NGO representatives and the MOH. This collaboration is, however, still in its infancy, and further efforts to involve and utilize the human resources available through NGOs should continue to be pursued.

- **Strong Foundation for Implementation of Syndromic Management**

The syndromic approach to STI case management in Morocco was implemented on a strong foundation of operations research. The necessary studies were conducted (prevalence of pathogens, algorithm validation study, ethnographic study, baseline assessments of quality of care, and qualitative assessments of providers' knowledge and attitudes of STI) prior to the expansion of the approach throughout the country. Data from these studies made a strong case for the appropriateness of the approach, as well as provided the necessary baseline information to correctly adapt the approach and focus the training curriculum on issues relevant to Morocco.

^a Pan-African Organization for the Fight Against AIDS

- **Creation of Intersectoral Committees**

In an effort to expand participation in STI/HIV prevention activities beyond traditional STI/HIV NGOs and MOH personnel, intersectoral committees have been created at the provincial level. These committees plan STI/HIV prevention activities and include all groups with access to and a mission to work with at-risk populations. The intersectoral committees include representatives from the Youth and Sports Ministry, the Ministry of Artisans, Ministry of Education, and NGOs focusing on sports, arts, and student activities, who can incorporate STI/HIV prevention messages into their programs.

- **Vaccination of Newborns Against Hepatitis B**

Hepatitis B is transmitted through blood products, from mother to child, and by sexual activity. It has received increasing attention worldwide as a preventable STI, and Morocco is an area of intermediate endemicity.⁴⁸ Despite the proven efficacy of the Hepatitis B vaccine and WHO recommendations to include it in the EPI program,⁴⁹ only half of the countries in the WHO Regional Office for the Eastern Mediterranean (EMRO) have implemented routine vaccination of newborns.⁵⁰ In a progressive pilot project, the MOH began vaccinating newborns against Hepatitis B in 1998. Hepatitis B vaccination was included in the infant vaccination series nationwide in 1999, placing Morocco among those countries poised to reduce Hepatitis B transmission.

VI. USAID'S CONTRIBUTION TO MOROCCO'S STI/HIV PROGRAM

USAID's level of funding for STI/HIV activities has been significantly less than that for the three other areas included in this retrospective analysis. In the early 1990's, small sums were made available to several NGOs (ALCS, *La Ligue Marocaine de la Lutte Contre les MST/SIDA*) for behavioral studies, seminars, and some IEC activities. USAID funding has also been instrumental in setting up training in diagnosis and treatment for RTI in FP reference centers, providing extended training to MOH personnel in the form of advanced public health degrees (MPH) and laboratory and technical training, funding participation at international AIDS conferences, and supporting the new regional epidemiology labs to enhance epidemiologic surveillance in Souss Massa-Draâ and Tanger-Tetouan. However, the bulk of USAID's funding for STI/HIV occurred through the AIDSCAP project (conducted from 1994-1997). Since that time, the European Economic Community, UNFPA, UNDP, and WHO have contributed funding and technical assistance to scale up the implementation of the syndromic approach to the entire country.

Box 4. Activities Funded By USAID

- First study on HIV/AIDS (KABP study) funded by USAID
- First television spot for World AIDS day funded by USAID
- Condom provision from 1986-1999
- Equipped laboratories in Family Planning Reference Centers for RTI diagnoses (through JHPIEGO)
- AIDSCAP Project to conduct baseline assessments necessary for the introduction of the syndromic approach to STI case management, including:
 - Equipping and training personnel for a National STI Reference Laboratory,
 - STI prevalence study,
 - Algorithm validation study,
 - Ethnographic study on STI perceptions, and
 - Baseline assessment of the quality of STI care (WHO indicators PI 6 & 7).
- Extended training for MOH personnel
- Capacity building for NGOs financed through AMSED
- Creation of regional epidemiology labs in Agadir, Tetouan
- Participation in international/African AIDS conferences funded by USAID

USAID has also contributed significantly to the fight against STI/HIV in Morocco through the provision of condoms to the MOH since 1991 (approximately 9,000,000 condoms at an estimated cost of \$462,000). Finally, USAID has supported the AIDS Alliance since 1995, which provides technical assistance to the Moroccan NGO AMSED. This NGO has focused its efforts on capacity building and skills training for a variety of smaller NGOs working in the area of STI/HIV prevention, enabling them to more effectively conduct their activities. The majority of AMSED's financing for HIV/AIDS activities (98 percent) is from USAID (1,800,000 DHS or \$176,500 USD), financed mostly through Asia/Near East Bureau rather than Morocco mission. The balance of their funding comes from the PNLs [1.5 percent (27,000 DHS or \$2,650 USD)].

VII. CHALLENGES FOR THE MOROCCAN STI/HIV PROGRAM

No STI/HIV program is exempt from areas which have made the work challenging, or could be improved upon. The Moroccan STI/HIV program faces the following challenges:

- **Non-Specific IEC Messages for the General Population**

Because of the strong cultural taboos, messages have been confined to generalities (protect yourself, inform yourself), rather than to explicit messages about how STI/HIV transmission can be prevented. Aside from televised messages each year on World AIDS

Day, there is no evidence of a comprehensive media strategy (e.g., television, radio), and most IEC messages rely on printed materials (either brochures or posters). However, because literacy is low (overall 58 percent of women are illiterate),⁵¹ and posters/brochures account for only 3 percent of information sources about AIDS among married women, other communication vehicles may be more effective in reaching the general population. Despite the fact that the proportion of women having heard of AIDS increased between 1991 and 1997 (62 percent vs. 83 percent), only 13 percent of women recognized vaginal discharge as an STI symptom and only 21 percent knew how to prevent HIV infection.⁵²

- **Social Marketing of Condoms Not Directed to STI/HIV**

The social marketing for Protex condoms, carried out by SOMARC (FUTURES Group), is viewed as a model of success in family planning circles, because the manufacture and sale of Protex condoms is currently maintained without any subsidies. However, the condoms are marketed and sold purely as a family planning method. The closest the message comes to indicating their ability to protect against STI/HIV is the phrase stating “use them for the well-being and security of your family.” They are termed “laazil t’bi” in Arabic, which roughly means the “medical isolator,” further obscuring their protective benefit for STI/HIV.

- **Minimal Donor Support for STI/HIV Activities**

Because of the low HIV prevalence in Morocco, donor enthusiasm is low and many agencies prefer to direct their support to other countries where the epidemic is more severe. This is especially true for NGOs. Currently, USAID’s only funding for STI/HIV in Morocco is the capacity building effort through AMSED. USAID is not providing any support to the government of Morocco through the MOH. Therefore, most donor support comes from the EEC, with smaller amounts from UN agencies (UNFPA, UNDP). ALCS receives the majority of its donor funding from French NGOs whose primary objective is to support southern NGOs. However, these funds are considered insufficient by the NGOs and the MOH to fully implement all the activities they deem necessary (e.g., expanded HAART therapy, expanded IEC efforts).

- **Focus on the Clinical Management of STI/HIV**

Most of the activities of the MOH focus on clinical management of HIV and STI. These illnesses are still very stigmatized in Morocco, resulting in delays in care seeking, difficulties in conveying information, and inadequate treatment of partners. A great deal of fear still surrounds HIV-infection, and many HIV-positive individuals have very little psycho-social support. ALCS has begun creating venues for psycho-social support, especially with their program to provide anti-retroviral therapy to HIV-infected individuals. However, this is still on a very limited basis (only in Casablanca), and they are only able to reach a small number of people.

- **Limited Scope of Physician Training in Moroccan Medical Schools**

Morocco maintains two major medical schools (Rabat and Casablanca) and has recently opened a third (Marrakech). Students are trained to work in resource-rich university hospital environments. However, the majority of physicians do not remain in these university centers, but rather are assigned to work in primary health care centers, with extremely limited resources. The procedures and protocols taught at the University level often cannot be applied. Physicians do not receive sufficient training in how to circumvent these problems, and, once in the field, they often have difficulty adapting to the reality of clinical practice in the Moroccan public health care system.

Of perhaps greater concern is the fact that medical schools do not teach the syndromic approach to STI case management. Thus, new physicians who graduate from medical school and are placed in primary health care centers have not received any training in the national strategy for STI care. The MOH has planned some make-up training sessions to address the problem of new recruits. However, this is a short-term solution and systematic inclusion of the syndromic approach in the medical school curriculum will be necessary.

- **No General Awareness of the Strategy to Replace Condoms Provided by USAID**

Discussions with the PNLS and other NGO staff indicated that they were not aware that USAID will no longer be providing condoms. Further, no one could describe a transition strategy. In addition to supplying health centers with condoms, the MOH also supplies virtually all the condoms distributed by NGOs. Although some NGOs mentioned that it may be possible to get limited condom supplies from other donors, most expressed concern that it would never be in the quantity nor with the regularity that USAID provided condoms. Discussions with USAID personnel revealed, however, that the MOH has planned for this at the level of the DP and the DELM, and the MOH will be securing a World Bank loan to purchase future stocks of contraceptives, including condoms.

VIII. ISSUES FOR THE FUTURE

In the continuing evolution of Morocco's STI/HIV prevention strategy, future activities will build upon work already completed. In particular, the PNLS should:

- **Use Behavioral Data to Develop IEC Materials and Interventions**

Several studies conducted in Morocco have produced results that contain valuable information for development of IEC messages and interventions.^{53,54,55} Future activities should focus on applying these data to develop and conduct interventions, adapt IEC materials for specific populations, and enhance prevention efforts. Special effort should be devoted to using non-written IEC methods, appropriate for non-literate or low-literate

populations. Many NGOs maintain close relationships with the general population and specific at-risk populations, and would be ideal collaborators in such an effort.

- **Add Men to the Focus of Prevention Activities**

Currently, Moroccan culture focuses blame on women for sexually transmitted diseases.⁵⁶ Additionally, because women make up the majority of the clientele in primary health care clinics and family planning services, they are easily accessible to interventions. Men more often seek care in the private sector and are more difficult to reach. To better promote effective STI prevention, messages regarding monogamy, condom use, and safe sex should be expanded to also target men. As a step in this direction, the MOH began to work in 1998 on messages delivered to men through imams (religious leaders) at the mosques in collaboration with the Ministry of Islamic Affairs.

- **Focus on “Vulnerable Populations”**

The MOH is working increasingly with NGOs to access what they have defined as vulnerable populations. This includes marginalized populations who have limited means to access care such as women, adolescents, prisoners, prostitutes, and rural populations moving to urban areas. This effort has been conducted in collaboration with UNAIDS, with some funding by UNDP. Peer educators have been trained and have begun working with these marginalized populations. Further collaboration with NGOs should prove fruitful in this area.

- **Expand Outreach to the Private Sector**

The MOH has begun a remarkable effort to expand the syndromic approach and treatment guidelines to the private sector. Informational sessions for private physicians were well-received and should be continued. Because a significant proportion of the population goes directly to pharmacies for STI treatment, similar information/training sessions for pharmacists, such as those planned under the EEC project, would be highly beneficial in disseminating the standardized therapies associated with the syndromic approach. Development and implementation of this initiative will be most successful with the full collaboration and participation of the pharmacists themselves.

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APPENDIX A

Key Informants Interviewed

This list contains all the key informants that were interviewed for the retrospective analysis reports (family planning, child survival, safe motherhood, and STI/HIV/AIDS).

USAID/Morocco

Ms. Susan Wright, HPN Officer
Ms. Helene Rippey, Senior Technical Advisor
Ms. Zohra Lhaloui, Project Management Specialist

Ministry of Health (MOH)

Direction de la Population (DP)

Dr. Mostafa Tyane, Director
Dr. Najia Hajji, Chief of Family Planning Division
Dr. Hamid Checkli, Chief of Child Health Division
Dr. Ali Bensalah, Chief of Maternal Health Division
Dr. Mohamed Abouakil, Service Delivery
Dr. Tsouli, Maternal Health Division, INAS Laureate
Mr. Abdelylah Lakssir, M&E Specialist
Dr. El Arbi Rjimati, Child Health Division
Dr. Mohamed Braikat, Head of National Immunization Program
Mr. Mohamed Bigmegdi, National Immunization Program
Mr. M. Brahim Ouchrif, Administrative Services
Ms. Rerhryaye Touria, Secretary, Child Health Division

Direction de la Planification et des Ressource Financières Service d'Etudes et d'Information Sanitaire (SEIS)

Dr. Mohamed Laziri, Director
Mr. Mustapha Azelmat, Chief Engineer and Survey Specialist

Direction de la Epidémiologie et la Lutte Contre les Maladies

Dr. Jaouad Mahjour, Director
Dr. Ahmed Zidouh, Chief of the Epidemiology Surveillance
Dr. Kamal Alami, Chief of STD/AIDS
Dr. Hamida Khattabi, Epidemiologist
Dr. Abderrahmen Filali Baba, Chief of Leprosy (former Chief of STD/AIDS)

Direction des Hôpitaux et des Soins Ambulatoires

Dr. Saida Choujaa-Jrondi, Director
Dr. Darhkaoui, Chief Ambulatory Health

Direction des Ressources Humaines – Division de la Formation

Mr. Achaati, Chief of the Training Division

Ms. Temmar, Midwife Trainer and Responsible for Basic and Continuing Training Program

Dr. Mohamed Zaari Jabiri, Head of Continuing Training Program

Institut National d'Hygiène

Dr. Rajae El Aouad, Chef of Immunology

Sefrou Region

Dr. Riouch, Sefrou Delegate

Marrakech Region

Dr. Mohamed Ben Chaou, Regional Coordinator

Dr. Moulay Lakbir Alaoui, Chief Doctor of SIAAP, Marrakech-Menara

Mr. Mohamed Aniba, Major of SIAAP, Marrakech-Menara

Dr. Zenjali, Physician, El Massira I Health Center

Ms. Ben Jebli Feturio, PSGA Educator

Casablanca Region

Dr. Jaafar Heikel, Delegate, Casablanca – Anfa

Médecin Privé

Dr. Mohamed Zarouf

JSI/Morocco:

Dr. Theo Lippelveld, Chief of Party

Ms. Boutaina El Omari, IEC Program Manager

Dr. Redouane Abdelmoumen, Public Health Specialist

Ms. Malika Lassri, Private Sector Program Manager

FNUAP

Dr. Belouali, Coordinator

CNFRH

Prof. Alaoui, Director

Institut Pasteur Maroc

Dr. Abdellah Benslimane, Director

Dr. Souad Sekkat, Immunology Unit

Ligue Marocaine de la Lutte Contre les MST/SIDA

Dr. Sekkat, President (also former Chief of STDs at the Military Hospital)

ALCS

Dr. Hakima Himmich, Chief of Infectious Diseases

Dr. Amine Boushaba, Prevention Program Coordinator
Dr. Adib Baakly, AIDS Care Program Coordinator
Ms. Sara Garmona, Prevention Program with Prostitutes Coordinator

AMSED

Dr. Malak Ben Chekroun, President
Dr. Issam Moussaoui, Project PASA Coordinator

OPALS

Dr. Nadia Bezaoui, President (former STD/AIDS Chief)

Union Européenne

Mr. Massimo Ghidinelli, Technical Assistant, STD/HIV/AIDS Program

Association Marocaine pour la Planification Familiale (AMPF)

Mr. Graigaa, Director
Ms. Bennamar, Board Member

Commercial Market Strategies (CMS)

Dr. Mohamed Ktiri, Country Director
Ms. Houda Bel Hadj, Chief of Program
Mr. Mohamed Jebbor, Country Manager

Catholic Relief Services (CRS)

Ms. Fouzia Soussi, Administrative Chief

USAID/Washington

Ms. Michele Moloney-Kitts
Dr. Miriam Labok
Mr. William Trayfors
Mr. Carl Abdou Rahmaan
Mr. Gerald Bowers
Ms. Joyce Holfield
Ms. Dale Gibbs

John Hopkins University/Center for Communication Programs

Ms. Sereen Thaddeus

WHO/Egypt

Dr. Mechbal, Representative