

AFRICA CHILD SURVIVAL INITIATIVE
COMBATting CHILDHOOD COMMUNICABLE DISEASES
(ACSI-CCCD)

AFRICA'S PROGRESS IN CHILD SURVIVAL
A FORUM IN DAKAR, SENEGAL
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REPORT



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ABBREVIATIONS

ACSI	Africa Child Survival Initiative
AFRO	Africa Regional Office (WHO, Brazzaville)
A.I.D.	Agency for International Development
AIDS	Acquired Immunodeficiency Syndrome
ARI	Acute Respiratory Infection
CAR	Central African Republic
CCCD	Combatting Childhood Communicable Diseases
CDC	Centers for Disease Control and Prevention
CDD	Control of Diarrheal Diseases
CEIS	Computerized EPI Information System
CEU	Continuing Education Unit
CHU	University Hospital Center
CQ	Chloroquine
DHS	Demographic and Health Surveys
DPT	Diphtheria, Pertussis, Tetanus
DTU	Diarrhea Training Unit
EPI	Expanded Programme on Immunization
EZ	Edmonston Zagreb Measles Vaccine
HIS	Health Information Systems
HIV	Human Immunodeficiency Virus
ICAAC	International Conference on Assistance to African Children
IEC	Information, Education, Communication
IHPO	International Health Program Office
IMR	Infant Mortality Rate
INTRAH	Program for International Training in Health
KAP	Knowledge, Attitude, and Practices
LBW	Low Birth Weight
LGA	Local Government Area (Nigeria)
MCH	Maternal and Child Health
MMRP	Mangochi Malaria Research Project
MOH	Ministry of Health
MQ	Mefloquine
NNT	Neonatal Tetanus
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
ORTU	Oral Rehydration Therapy Unit
PHC	Primary Health Care
TB	Tuberculosis
TT	Tetanus Toxoid
SSS	Salt and Sugar Solution
STD	Sexually Transmitted Diseases
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WCARO	West and Coastal Africa Regional Office (UNICEF)

EXECUTIVE SUMMARY

I. INTRODUCTION

The Forum, "Africa's Progress in Child Survival", was held in Dakar, Senegal from March 29 through April 2, 1993. The Forum was preceded by four workshop sessions on March 25-27. These workshops included a limited number of African participants.

The Forum and workshops were funded by the Africa Bureau of the United States Agency for International Development and organized by the Centers for Disease Control and Prevention (CDC) through the Africa Child Survival Initiative - Combatting Childhood Communicable Diseases (ACSI-CCCD) Project.

The purpose of the Forum was to review Africa's progress in child survival (CS) and to review lessons learned from over a decade of experience in implementing the (ACSI-CCCD) project and other child survival programs in Africa. Furthermore, the conference was organized to share the latest technical information on child survival interventions, to identify important challenges facing child survival efforts in the 1990s and to develop key recommendations for child survival program implementation in Africa during the 1990s.

Over 450 public health professionals, 85% of whom were African nationals attended the Forum. Participants represented 32 African governments and over 30 international and regional organizations including WHO, UNICEF, A.I.D., Peace Corps, PVOs and other A.I.D. cooperating agencies working in sub-Saharan Africa.

During the five day forum, 120 presentations were made; over 80% given by African nationals. The Forum's themes illustrated the range of child survival initiatives developed over the last decade - from the twin engines of immunization and ORT to acute respiratory infections (ARI), malaria, integrated case management of the sick child, HIV/AIDS, sexually transmitted diseases (STDs), tuberculosis (TB), safe motherhood, nutrition and family planning.

In addition, presentations also addressed several support strategies required for the delivery of expanded child survival services, including the use of data, quality assurance, training, health care financing and community participation.

II. BACKGROUND - CHILD SURVIVAL IN AFRICA

Efforts to improve child survival in Africa have had much success over the past decade. The infant mortality rate (IMR) continent-wide has declined from over 200/1000 to 101/1000 live births in 1990 through the use of affordable technologies and mobilization of a political commitment by African governments for child survival. However, despite overall improvements, Demographic and Health Surveys (DHS) data from 18 African countries continue to show a wide variation in childhood mortality rates among countries, ranging from 50/1000 in Botswana to over 300/1000 in Niger. Fourteen countries show a declining mortality trend and four show a stagnant or an increasing trend (Niger, Nigeria, Zambia and Uganda).

Of the approximately four million deaths that occur every year in Africa among children less than five years of age, an estimated 30% - 50% are attributed to malaria and ARI, which frequently have overlapping clinical symptoms. Other major causes of under-five mortality include measles, neonatal tetanus, dehydration and malnutrition. HIV/AIDS and TB are emerging as important diseases that will impact on child survival during the 1990s.

Factors associated with increased childhood mortality include a mother's lack of education, age (less than 18 or greater than 39), parity (greater than 5), and birth interval (less than two years). Mortality is higher in rural areas and among the urban poor.

III. LESSONS LEARNED FROM A DECADE OF CHILD SURVIVAL PROGRAMMING

Forum presentations outlined numerous lessons learned from implementing child survival activities in Africa over the past decade. Among the major lessons learned within major program areas are the following.

EXPANDED PROGRAM ON IMMUNIZATION (EPI)

EPI target disease epidemiology is different in large urban areas; urban disease control efforts require different policies and strategies.

Pediatric HIV infection is not a contraindication to the routine WHO/EPI immunization schedule. WHO recommends that BCG be given as close to birth as possible and not be given to infants with clinical AIDS.

Although immunization campaigns can be effective in increasing coverage in the short run, immunization levels will decline if sustainable, permanent service delivery systems from a fixed center and outreach services are not left behind.

Priorities for EPI are broadening to include surveillance of disease incidence, in addition to monitoring immunization coverage levels. An increased emphasis on surveillance of disease incidence, in addition to monitoring immunization coverage levels. An increased emphasis on surveillance can help program managers to focus program activities and resources and to develop strategies to control measles, eliminate neonatal tetanus and eradicate poliomyelitis.

CONTROL OF DIARRHEAL DISEASES

Exclusive breastfeeding between 0 and 4-6 months of age is one of the most effective strategies to prevent diarrhea. Furthermore, while ORT can be effectively used at home to treat/prevent dehydration, community use of ORT has not met expected targets and is often not compatible with a community's culture and beliefs about disease and treatment. Ethnographic and socio-behavioral research is useful in developing appropriate policies and program implementation strategies for CDD

and other child survival programs.

Persistent diarrhea and drug resistant shigella are also major causes of diarrhea morbidity and mortality. Nutritional management may be necessary to treat associated malnutrition.

ARI AND MALARIA

Sick children frequently have multiple, overlapping clinical problems and require comprehensive assessment, diagnosis and treatment. To be effective, case management programs require viable logistics systems that ensure an adequate supply of drugs and other resources.

Revolving drug funds are one possible option for ensuring that adequate drugs and other resources are available.

In many areas, chloroquine is no longer effective as a first line anti-malarial and its anti-malarial effectiveness should be routinely assessed. Alternate therapies should be adopted as necessary.

EMERGING DISEASES

Malnutrition and ARI are more common causes for hospitalization among HIV-infected children as compared to non-infected children. Children admitted with these conditions should be assessed for HIV infection.

TB has increased dramatically in Africa. HIV infection may account for an estimated 20% of this increase. Most cases can be managed by existing TB control strategies that are based on case finding and treatment, and that are appropriate, affordable and effective for Africa. Currently TB control efforts suffer from low compliance and limited resources.

Treating STDs is one of the most cost effective methods available to prevent HIV transmission. Furthermore, congenital syphilis, a factor in stillbirths and low birth weight, can be effectively prevented with prenatal clinic programs that provide STD diagnosis and treatment.

FINANCING HEALTH SERVICE DELIVERY

Making a contribution in cash or in kind in return for health services is not new to most of Africa; people are willing to pay for health services.

Fee for service programs can be effective when collected revenues are retained at the local level. However, intensive supervision and training are required for effective local management and use of these revenues.

IV. RECOMMENDATIONS FOR CHILD SURVIVAL PROGRAMMING IN THE 1990s

Conference presentations included recommendations to ensure that quality primary health care services remain widely available in Africa over the next decade. These recommendations are grouped under five broad areas of activity.

A. SUSTAIN AND EXPAND CURRENT ACHIEVEMENTS

MOH staff and their technical assistance partners should ensure that the significant progress that has been achieved in child survival over the past decade is sustained and expanded during the 1990s. As the lead primary health care program in many African countries, national governments and donors should give high priority to maintaining strong immunization programs that can provide high levels of protection and that can serve as vehicles for implementing new interventions such as family planning services and enhanced disease surveillance efforts. Furthermore, strong immunization programs are necessary to deliver new vaccines, such as those for malaria and AIDS, when they become available.

B. IMPROVE INTEGRATION OF CHILD SURVIVAL PROGRAMS

Increasing the integration of child survival programs will represent a major strategy for improving their effectiveness and efficiency in the 1990s. MOH staff and technical assistance partners should work together to improve the integration of PHC programs and to ensure that adequate resources are available for

implementing more integrated programs. Increasing the level of integration should also allow national programs to make the most effective use of scarce resources.

Integration during the 1990s will encompass two broad areas. First, managers must accelerate the implementation of diarrheal disease, malaria, TB and ARI control programs. However, they must do so in the context of more holistic efforts designed to improve the case management of sick children. The WHO/UNICEF initiative to improve the case management of the sick child represents a major global effort to standardize and coordinate those elements of case management common to the individual case management interventions. While technical and implementation gaps exist in the WHO/UNICEF sponsored initiative, it should serve as a catalyst for efforts to improve integration.

Second, managers must also seek to integrate the delivery of other high priority PHC services within the delivery systems which already exist for certain primary health care services. In many countries, the EPI is often the lead service delivery program in terms of staff training, logistical support and population coverage. The challenge will be to incorporate additional services, such as family planning, within the service delivery network that is already providing immunizations. Early evidence from a ACSI-CCCD supported pilot project in Burundi suggests that family planning services can be integrated with immunization service delivery without decreasing the coverage or acceptability of immunization services. This pilot effort should be reviewed as a model for similar attempts to integrate new services within immunization programs.

C. DECENTRALIZE RESPONSIBILITY FOR PROGRAM IMPLEMENTATION AND MANAGEMENT

Decentralizing the responsibility for program implementation and management to the district level will represent a key component of the overall strategy to deliver more efficient and more integrated child survival programs in the 1990s. Effective decentralization will require that MOH staff and their technical assistance partners provide district level managers with the skills

required to plan, implement, monitor and evaluate child survival programs. Training efforts must therefore focus on strengthening district level capacity to:

- Develop and manage health information systems that provide quality data and to use data to set policies and to monitor and evaluate PHC programs;
- Supervise staff and to implement effective approaches to continuing education;
- Manage programs at the district level
- Routinely monitor sensitivity to anti-malarial and antibiotics.
- Develop, as needed, urban-specific program implementation and disease control strategies.

D. DEVELOP EFFECTIVE PARTNERSHIPS AT ALL LEVELS

Efforts to decentralize responsibility for child survival program implementation and management and to integrate service delivery programs will require the development of new partnerships at every level of the health system, including the community, facility, district, country and international level.

At the national level, health policies with clearly defined goals should be the basis for improved collaboration within the health sector. In the future, technical assistance partners and MOH staff should agree to work together on the health issues that individual countries have identified as high priority. They should keep in mind, however, the need to achieve the World Summit for Children targets and the need to effectively monitor progress towards these targets. MOH staff and their partners should then develop national health policies with clearly defined goals, disseminate these policies to district and community level health workers and provide the technical and logistical support necessary to achieve the policy goals and objectives.

At the community level, effective partnerships are particularly relevant to the implementation of cost recovery systems in Africa. Experience to date shows that when communities are active in implementing and managing fee for service programs and when the community retains a majority of the funds collected, the schemes are more successful.

Additionally, communities must be full partners in the implementation of case management programs that will rely to a great extent on the community's ability to recognize and treat sick children. Building community partnerships will be a central task of district level managers who will have, through efforts to decentralize program management, a greater responsibility for working with communities to adapt and implement child survival programs.

E. CONDUCT NECESSARY APPLIED RESEARCH

Implementing effective child survival programs during the 1990s will require that existing technical and operational problems be solved. MOH staff and their technical assistance partners must therefore ensure that the applied research necessary to solve key technical and operational problems is conducted. Priority topics requiring further research include:

- The role of traditional and socio-culturally relevant groups in AIDS prevention and control activities;
- The effect of user fees on utilization rates in the public and private sectors;
- Optimal malaria prophylaxis and prevention strategies;
- Community based prevention strategies and inexpensive antibiotic treatment for dysentery; and
- Culturally acceptable methods for treating diarrhea and dehydration at home.

CONCLUSIONS

Ministry of Health participants and representatives of the many organizations attending the Forum all concurred that the meeting very successfully highlighted past child survival accomplishments, outlined future challenges and provided countries with practical recommendations to improve child survival programs in the 1990s.

African delegates, however, expressed concern about the political, social and economic challenges facing Africa. Forum presentations emphasized that peace and political stability are prerequisites to effectively addressing child survival challenges in the 1990s.

Democratization is causing African governments to become increasingly responsible for the health of their children and there is a growing realization that the future of Africa's children cannot be sacrificed for today's

needs. This political will, combined with clear national health policies and goals can form the basis for increased collaboration between public and private providers, communities and their governments and between governments and donors. Proven child survival strategies can be made more effective and efficient by improving policies, decentralizing responsibility for program implementation, developing peripheral level management skills and by integrating child survival program services. However, Forum participants raised concerns about the financial and human resource required to integrate and strengthen child survival programs. Donors were urged to continue support for child survival programs and to work with African countries to develop and implement appropriate child survival programs.

REMARKS FROM JULIUS E. COLES, DIRECTOR, USAID/SENEGAL

The United States Agency for International Development (USAID) is proud to sponsor this Forum on Africa's Progress in Child Survival. This is an incredible gathering of more than 350 African and 100 international public health professionals. The fact that more than 250 abstracts were submitted from over 35 African countries is an impressive testimony to the progress that has been made and to the continuing commitment to the health and development of Africa's children.

I believe the story of child survival in Africa today is a story of great success and great challenges. The improvement of African child health during the 1980's is a remarkable achievement, brought about in part by a unique partnership between African ministries of health, international organizations, and donors like private voluntary organizations, WHO, UNICEF, and A.I.D., partners that jointly recognized child survival as a priority. All are to be heartily congratulated for the significant achievements made in child health during the 1980's.

In 1981, A.I.D.'s Africa Bureau began the Africa Child Survival Initiative Combatting Childhood Communicable Diseases (CCCD) project. For more than 12 years, the project has served as one of A.I.D.'s primary programs to support child survival in Africa. The project has been implemented by the Centers for Disease Control and Prevention (CDC) in 13 countries. The principal strategy has involved focusing on strengthening health systems and interventions that addressed major causes of child mortality such as vaccine-preventable diseases, diarrhea, and malaria. Furthermore, the project has supported numerous activities at the regional level in Africa, including sponsoring six conferences like this one, supporting large-scale operations research projects, and supporting WHO regional training activities.

These concerted efforts have produced significant results in a short time.

Africa's DPT3 coverage was 57% in 1991, demonstrating that more than half of Africa's infants are seen by health care workers at least three

times during their first year of life. For the first time, the number of measles cases and deaths prevented in Africa was greater than the number that occurred. Evidence also suggests that immunization program quality has increased markedly.

Access to clinic-based treatment of diarrhea with ORS was 57% in 1991, up from 22% in 1985.

A major study of malaria in pregnancy, supported by the ACSI-CCCD project in Malawi, has provided answers to important biologic and programmatic questions of broad interest to African countries. Furthermore, Malawi used the results to change its first-line drug for malaria treatment and prevention in pregnant women.

While affirming these successes, we also acknowledge that our work in child survival is not finished. The United States continues to place great importance on preventing infant and child deaths and improving the situation of African children. This remains a critical humanitarian and developmental concern to A.I.D.

We understand that the advancement of developing countries is highly dependent on the health, education, and productivity of their future generations. In 1991, A.I.D.'s Africa Bureau supported health and child survival activities in 39 countries. In 1992, USAID committed \$400 million for child survival, health, nutrition, education, family planning, and AIDS programs in sub-Saharan Africa.

In the 1990's, A.I.D. will address four major challenges:

The first challenge will be to sustain the significant progress that has been achieved in child survival over the past few years. Gains must be protected and at the same time, successful programs must continually adjust their activities in order to remain effective. A.I.D.'s Africa Bureau is concerned by some recent evidence that suggests that the hard-won gains in immunization coverage may have started to slip. The Africa Bureau is committed to working with its partners to determine the reasons for stagnant or declining

immunization coverage levels and to identify resources and approaches necessary to reverse the downward trend. Immunization programs must stay strong in order to provide high levels of protection as well as continue to represent vehicles for implementing new programs like family planning and disease surveillance. Strong immunization programs will be needed to deliver new vaccines as they become available, including those for malaria and AIDS.

In addition to maintaining past achievements, A.I.D. during the 1990's will support a strategy to strengthen health systems and to address emerging problems that are seriously affecting infants and children. Epidemiologic data document that rapidly expanding populations, inadequate nutrition, sexually transmitted diseases, and AIDS are issues essential for child survival and health for the 1990's to address. The second major challenge for child survival in the 1990's will be to integrate these numerous vertically focused child survival interventions within a context of a strengthened primary health care delivery system. Success in this effort is important, as it will contribute not only to the survival of children, but to the development of effective, efficient, and sustainable health care delivery systems.

To meet this second challenge, A.I.D. technical assistance during the 1990's will provide support for the policies and skills necessary to implement integrated programs and advance primary health care. Integrated programs will require increased management and technical skills in policy formulation and planning and improved strategies in training, supervision, and continuing education to assure quality.

A third major challenge will be to identify strategies to successfully address the emerging priority health issues. We must develop strategies to deal with the pressures of rapidly expanding populations and educate populations about HIV/AIDS and about how to prevent infection. We also have to develop strategies to effect the behavior change necessary for long-term control of AIDS. Attempts to change behavior are difficult and will require sustained efforts and patience.

The fourth challenge will be to find resources to support priority health programs at their current levels. This may include increasing the role of the private sector,

supporting the Bamako Initiative, and promoting revolving drug funds. Donors must carefully coordinate their assistance to ensure that gains are not lost and to support the development of country policies and strategies to sustain these ongoing and new interventions.

At a time when resources are scarce and needs are great, building upon proven successes in child survival represents a sound investment and a wise policy. It is important for us to use the record of proven success to strongly advocate for child survival. Increasing advocacy at all levels within our countries and within the donor community is necessary and represents a further challenge we face today. Our common commitment to the goals of the World Summit for Children provides a sound basis for this advocacy, which should attempt to secure adequate funding for public health and child survival programs within our respective countries. We must remember that good health information is a prerequisite for advocacy. The U.S. will work with African health professionals to increase access to health information and assure adequate training in epidemiology, disease surveillance, computer science, and data use.

In the 1990's, A.I.D. will broaden the perspective of child survival to include child development. We will accomplish this goal by complementing our child survival activities with programs in child development and protection and women's health and education. These two programs will address early childhood care, basic education, care for children in difficult circumstances, women's access to family planning, and women's health, nutrition and education.

Child survival programs offer one of the effective and efficient ways to make a lasting impact on Africa's health and productivity. These programs will help to strengthen national capacity to promote health by mobilizing the public and private sectors to meet priority health needs and by building the health systems to face future challenges. Efforts to consolidate and sustain current programs and incorporate new interventions must be pursued with the same intensity that originally launched the child survival programs. Finally, we must be willing to adapt programs on the basis of ever-changing child survival needs and circumstances.

During this week, let us all learn as much as possible

from each other, for this Forum is really about learning and sharing our experiences in child survival. I hope that we emerge with renewed health. I can tell you that A.I.D. is very interested in hearing about your priorities for improved child health in Africa in the 1990's. A.I.D.'s Africa Bureau will use what is learned here to continue its work as a strong partner in Africa's efforts to ensure the survival and good health of its citizens, and especially its children.

**REMARKS FROM HONORABLE ROBERT KOTT,
CHARGE D'AFFAIRES
AMERICAN EMBASSY**

I am pleased to welcome you to Dakar, Senegal, to participate in the Africa Child Survival Initiative - Combatting Childhood Communicable Diseases (ACSI-CCCD) Forum.

As most of you are aware, fiscal year 1981 marked the beginning of the Africa Bureau's Combatting Childhood Communicable Diseases (CCCD) Project. This activity over the years has focused on specific, cost-effective measures addressing targeted specific childhood diseases. Recognizing the emotional and financial costs of extremely high infant and child mortality in the developing world, the U.S. Congress created a new foreign assistance appropriation in fiscal year 1985 entitled Child Survival. Since its inception, the child survival program has become a vital part of the United States Government's overall strategy for economic growth and development in Africa.

Since these early days, great strides have been made in child survival programs throughout the world. This conference will report on many of the accomplishments in the areas of policies, programs, and projects. These accomplishments have also been documented in children who now receive life-saving interventions through immunizations, oral rehydration therapy, malaria prevention and treatment, and better nutrition. Achievements have also been documented in

family planning and tetanus programs designed to benefit women. Because of these efforts, families throughout the world can better protect the health and lives of their children.

We believe it is crucial that this conference on child survival serve not as an isolated event, but rather as the beginning of a continuing process. Lessons learned at this conference must be carried back to each country represented here for follow-up actions during the remainder of the 1990's. The magnitude of the task ahead for all of us and the responsibility placed on all of us to further reduce infant and child deaths demand our continued action.

The large number of participants gathered here for this conference from all walks of life--government officials, NGOs, grass-roots organizations, women's organizations, universities and participants from African countries will ensure a lively and spirited debate in addressing the vital issues before this conference. Results from this forum will be of considerable value for future child survival efforts in Africa.

We, the United States Mission to Senegal, again welcome you here to share your professional experiences in this vital area of development.

**REMARKS FROM HONORABLE ASSANE DIOP,
MINISTER OF PUBLIC HEALTH AND SOCIAL ACTION OF SENEGAL,
ONE PEOPLE - ONE PURPOSE - ONE FAITH**

On November 25, 1992 in this same room, with His Excellency, President Abdou Diouf presiding, and in the presence of certain African Heads of State, the International Conference on Aid to African Children was held

At this meeting, organized under the aegis of the Organization of African Unity (OAU) in the context of the follow-up of the World Summit for Children, we heard a cry of alarm from young representatives of African countries drawing the attention of the international community to their fate. To ensure the survival of children, these objectives for the Year 2000 were reasserted:

- To reduce infant mortality by a third;
- To reduce by half, the rate of maternal mortality, severe or moderate malnutrition in children less than 5 years old;
- To provide all with a supply of drinking water and adequate systems of disposal of excrement;
- To universalize basic education and to ensure that at least 80% of school-aged children complete the primary education cycle; and
- To improve protection of children living under particularly difficult circumstances: to bring the illiteracy rate in adults to less than half the rate in 1990, with the emphasis on the literacy of women.

The dangers that threaten children and the distress which strikes them are greater in Africa than in any other continent. Of the nearly 13 million children who die each year in the world, a third are Africans, yet African children represent only slightly more than 10% of the world population of children. This rate is unfortunately increasing constantly despite the sustained progress made by Africa in the fight against infant mortality.

There is, then, much to do to accomplish the goals of the World Summit for Children. We must all respond to the moral obligation to accelerate improvements in health care for the children in Africa. Without progress, and with the increasingly critical economic situation, the world will experience sooner or later the distress of an entire generation that was not helped at the time assistance was most needed.

In order to mobilize the technical and financial resources to accomplish these objectives, it will be necessary to redistribute existing resources for the benefit of priority health care programs and to assign new resources, without prejudice, whether they are of national origin, including public credit institutions; or from non-governmental organizations (NGOs), communities, or foreign aid.

We are conscious of the interdependence of the countries of the world and recognize that the solutions to the underdevelopment of Africa, as well as the specific measures to solve the problems of African children, require basic changes in the policy of African governments and a renewed commitment on the part of the international community.

But the main task is up to the African countries themselves. They must indicate through their national action programs and other initiatives of the social sector, that they are resolved to make the necessary choices to reform the health care system, in the interest of equity, profitability, and full participation of the communities and households.

At the dawn of the twenty-first century, Africa must now build the foundation of a more dynamic and lasting pattern for its future development. In this context, the forum on the progress in survival of African children comes at a good time.

This privileged opportunity to exchange the respective experiences of our States will allow us to evaluate objectively the causes for the successes or failures of programs underway in our countries in order

to formulate recommendations for the decision makers on measures to improve survival of children. Although the rate of infant mortality is decreasing in the majority of developing countries, in Africa it is still very high, considering the possibilities for prevention and treatment that currently exist. This high rate of infant mortality is essentially due to diseases that can be avoided, such as malaria, diarrhea, and respiratory infections. Malnutrition constitutes the almost invariably present determining factor. Furthermore, results of several studies suggest that this mortality is proportional to multiple pregnancies close together and to the age of the mother.

In Senegal, infant mortality has decreased in the past 10 years, from 116/1000 to 84.6. This decrease is due in part to improvements of basic health care services, to the satisfactory vaccine coverage rate (80% and more by antigen), to the combined fight against diarrheal diseases and respiratory infections, and to a great number of programs. These programs should be as high in priority as the programs that preceded them and that are intended to reduce the risk factors that can damage health and survival of children: the program for prevention of maternal mortality, the family planning program, and the nutrition program. Nevertheless, these programs, which should contribute significantly to reducing maternal and infant mortality, are slow to achieve results because of the pro-birth tendency of the population and the difficult socioeconomic context.

His Excellency, the Ambassador, the Regional Director of WHO for Africa, the Representative of UNICEF in Dakar, the Director of USAID in Dakar, Honorable

guests, Dear participants, Ladies and Gentlemen: The survival of African children is a challenge inherited by all governments of the countries of the sub-Saharan region. Even if the infant mortality figures are decreasing, they still hide the reality. Several examples throughout the world show that, on one hand, the definition of infant mortality itself is subject to different interpretations, and on the other hand, the statistics collected under the conditions of developing countries are often not sufficiently reliable.

Furthermore, other problems occur or persist, which risk compromising the progress observed in past years. These difficulties are economic (weight of the debt and climatic risks) and political (democratic transition with the social unrest and ethnic wars generated). Those who suffer most are the children. The AIDS epidemic magnifies their suffering. In effect, 90% of the pediatric cases of HIV infection are African. To this one must add the AIDS orphans exposed to premature mortality.

In spite of the considerable progress we have succeeded in making, major challenges remain. These challenges call for more national and international solidarity. Also, without prejudice to the recommendations that will come from our work, I believe it is more urgent than ever to develop and strengthen integrated, multisector approaches, which intelligently allocate resources and which are centered in communities.

Expressing again to you my recognition of the honor and trust shown for my country for the organization of this important meeting and wishing complete success in your work, I declare that the "Forum of Health Care Professionals on the Progress Made in the Field of Survival for Children in Africa" is now open.

OVERVIEW OF CHILD HEALTH IN AFRICA: PROBLEMS, PROGRESS, CHALLENGES

Gottlieb L. Monekosso, Regional Director,
WHO/AFRO,
Brazzaville

INTRODUCTION

It is a real pleasure to be able to attend this important child survival forum, here in this beautiful city of Dakar. Honorable Minister of Health of Senegal, I would like to seize this opportunity to extend my warmest congratulations to His Excellency, President Abdou Diouf, on his brilliant reelection. We look forward to a continuation of his dedicated leadership in the fight to bring social justice and improved welfare to all the peoples of Africa. I would like to join the speakers before me in extending our sincere appreciation of the Government and people of Senegal for the warm welcome and usual generous hospitality.

I wish next to render special thanks to the organizers of this meeting for affording me this opportunity of addressing this forum on an issue upon which the very future of our continent depends. I am particularly pleased that our Regional Office in Brazzaville has on this occasion been very closely involved in the preparations for the meeting, in a spirit of genuine collaboration that has characterized our relationship since the inception of the Project in the mid-eighties. Extending participation at this forum beyond the countries in the ACSI-CCCD Project, should help stimulate the acceleration of child survival activities throughout the Region.

This forum provides further opportunity to review progress achieved towards improved African Child Survival. Occurring just a few months after the International Conference on the Assistance to

the African child, held by OAU and UNICEF in this same city, this forum should provide further impetus to implement the National Programmes of Action of the World Summit for Children. Given the choice of topics for the meeting agenda, as well as the quality of the speakers and participants, I have no doubt that the Forum will contribute to a better understanding of the major challenges that lie ahead in our joint quest to attain the goals for Child Survival by the Year 2000.

My presentation will focus on current health of the African child; present a rapid overview of progress so far achieved in improving survival of the African child; explore approaches for overcoming some of the major obstacles; and offer perspective on future partnerships, including the role of the World Health Organization.

Life-threatening Diseases and Conditions in Childhood

The protracted, severe economic recession affecting the Region, compounded by widespread civil strife and natural disasters including AIDS, has begun to impose stagnation or actual reversal of earlier gains.

Despite a relative scarcity of reliable community-based data, the main causes of infant and young child mortality in Africa are now well known and include:

Perinatal and Neonatal Causes are estimated to be responsible for nearly 50% of infant mortality and 30% of under-5 mortality in Africa. The highly unsatisfactory condition and status of women in the Region, exemplified by low level of literacy, disadvantaged economic opportunities, poor

LIFE THREATENING DISEASES AND CONDITIONS IN CHILDHOOD

1. PERINATAL AND NEONATAL MORTALITY

- 50% of infant mortality and 30% of under five mortality occur in the first month of life.

2. DIARRHEAL DISEASES

- 5 episodes of diarrhea per year and per child under five.
- 800,000 deaths among children under five years of age.

3. ACUTE RESPIRATORY INFECTIONS (ARI)

- 2 to 8 episodes of ARI per year and per child under five.
- 1.5 million children under five death each year.

nutrition, and high rates of uncontrolled fertility in a milieu of unsatisfactory coverage with effective health

services, particularly prenatal and delivery care, all contribute to this unacceptable rate of early infant death. Yet the newborn has so far been almost completely left out of the Child Survival Revolution, and this, despite the availability of appropriate and affordable technology to prevent or manage the most common causes of perinatal and neonatal mortality that remain: low birth weight, sepsis neonatal tetanus, birth asphyxia with or without delivery trauma, hypothermia, and hypoglycemia.

The serious sequelae of perinatal asphyxia, trauma, sepsis, jaundice, and hypothermia, on those neonates that survive, while unquantified for Africa, must constitute a major burden of lifelong physical and intellectual handicaps in the region. Diarrheal diseases are a leading cause of childhood mortality and morbidity. An African child may present up to five episodes of diarrhea per year. The under-5 mortality rate due to diarrhoea varies from 11 to 60 per 1000, causing an estimated 800,000 deaths each year. These diseases are also major contributors to malnutrition and are most pronounced in the undernourished. The problem is particularly complex since diarrhoeal diseases are associated with poor personal hygiene, lack of or inadequate food hygiene, poor socioeconomic conditions, and general ignorance of the gravity of these diseases among the population affected.

Acute Respiratory Infections (ARI) are estimated to account for more than a quarter of all episodes of illness

and death in children in developing countries. In many parts of the Region, ARI are clearly the leading cause of under-5 mortality. While there has been widespread increase in awareness of ARI as a problem, it is only

recently serious commitment has been made to accord it the priority it deserves. Children under 5 years of age present two to eight episodes of ARI during any 1 year. Poverty resulting in overcrowded, polluted, and otherwise unhygienic homes creates conditions in which susceptibles are already weakened by lowered resistance, as a result of malnutrition and recurrent episodes of a variety of infections.

Malaria remains a serious public health problem in Africa, where over 90% of the annual number of cases worldwide is generated. Malaria is one of the leading causes of infant mortality. Even when malaria is not fatal, it has a considerable effect on the health status of African children because it increases their vulnerability to other diseases and hinders their development. During the last decade, the epidemiology of malaria has changed in many areas of Africa. Chloroquine-resistant *P. falciparum* spread practically all over the Region. Malaria appeared in some of the originally malaria-free areas due to introduction of new

agricultural technologies (e.g. irrigated rice cultivation). In other areas where incidence of malaria was relatively low, severe outbreaks with high mortality took place. This was observed at high altitudes (in Madagascar, Burundi, Rwanda, Zaire, Zimbabwe,

4. MALARIA

- 90% of the annual reported incidence in the world is generated in Africa.
- One million deaths per year
- Economic lost of US \$1,8 billion

5. VACCINE PREVENTABLE DISEASES

- 15 per 1000 live births of neonatal crippled with crippled with rural areas
- Half a million deaths each year due to measles
- More than 50,000 cases of children crippled with poliomyelitis

6. MALNUTRITION

- 12% of neonates are low birth weight.
- 50% of preschool children affected by protein-energy malnutrition.

7. MATERNAL MORTALITY

- 1000 to 2000 per 100,000 live births of maternal mortality rate in some areas,
- No indications of decrease.

8. HIV/AIDS INFECTIONS

- Many women of childbearing age are infected (seropositivity prevalence rates: 2 - 30%)
- One third of children born to HIV-infected women will be infected
- Transmission through breastfeeding threatens the basis for child care and development

9. MALNUTRITION

- 12% of low birth weight due to maternal malnutrition
- Micronutrient deficiency is the second cause of nutritional disorders in Africa.

Ethiopia) or at desert fringe (Botswana, Namibia). Increased virulence and high case fatality rates, not accounted for by drug resistance, are increasingly being reported in the Region.

Vaccine-preventable diseases remain important causes of morbidity, mortality and disability. Neonatal tetanus remains the main cause of neonatal deaths, because of its high case fatality rate and its high incidence. In the rural areas, neonatal tetanus incidence may be well above 15/1000 live births. Measles accounts for more than half a million deaths a year, despite all efforts to immunize the young children. Several outbreaks are reported each year throughout the region and the case fatality rates in some rural areas have been as high as 20% to 50%. Poliomyelitis continues to cripple more than 50,000 children a year. Although significant reductions have been noticed in some countries, several others continue to report high prevalence of this preventable disease. For the children below five years of age, prevalence may still be as high as 8 per 1000.

Malnutrition Nutritional deficiencies prevail among children in the Region. One of the main causes is food insecurity: in 12 countries of the Region, 30% of the population is considered as food insecure. Food availability is low, not exceeding on average 2,200 Kcal per capita per day. One African out of every three does not meet adequate food requirements and this proportion, in absolute value, has decreased by 27% over the last decade.

Undernutrition is endemic in the African continent. Poverty is the basic cause of undernutrition. Maternal malnutrition results in low birth weight: 12% of neonates are low birth weight which represents nearly twice the figure observed in the industrialized world. Protein-energy malnutrition affects more than 50% of preschool children, and it is estimated that 50% of deaths are due to protein energy malnutrition.

In order of importance, micronutrient deficiency is the second cause of nutritional disorders in Africa. The major micronutrients concerned are iodine, vitamin A, and iron that does not exclude the other micronutrients such as vitamin C and thiamine.

Maternal Mortality. It has long been recognized that the health and survival of the infant are

inextricably linked with the health of the mother. This has been repeatedly reaffirmed by various studies, including that reported by Greenwood et al in The Gambia, showing that not a single liveborn offspring associated with maternal death survived the first week of life. Similarly, according to a study in the Kawale District of Kenya, of all the live births issuing from maternal deaths, only 27% survived infancy.

Thus, adequate prenatal/delivery care and child spacing services have major contributions to make in any African child survival initiative; yet maternal mortality in Africa remains the highest found anywhere in the world, and has shown no indication of falling rapidly. Indeed, there is much evidence to suggest a far worse situation than was hitherto believed, with areas recording maternal mortality ratios of 1000 to 2000 per 100,000 live births, and more.

In the Region, HIV/AIDS Infection is essentially a sexually transmitted disease. The rate of infection in women of childbearing age has exploded in both urban and rural areas of the Region, with seropositivity rates ranging from 2% to 30%; rates between 2% to 23% have been reported in antenatal mothers.

It is further estimated that one third of children born to HIV-infected women will themselves be infected, and that of the few who live to their fifth birthday. The remaining uninfected, two thirds seem condemned to early and certain orphanhood, with both parents lost from AIDS. Mother-to-child transmission rates reported for Africa have again been generally higher than in other Regions.

The recent confirmation of transmission through breastfeeding threatens to confound the entire basis for child care and development in Africa. While the negative impact of AIDS on socioeconomic development is already quite evident, its influence on population growth and particularly on infant mortality remains open to debate, even if some have projected that AIDS could produce up to a 30% increase in current rates of under five mortality in Africa.

The Health Crisis

The African countries have entered the last decade of this century in the grips of a deepening health crisis, which is recognized as both a consequence of and a

contributor to Africa's current economic, social, and political crisis. Environmental, behavioral, and population problems are being compounded by diminishing incomes and worsening dietary and immune deficiencies.

The 1980's have witnessed recurring health emergencies throughout the continent as a result of drought-induced famine, infestation with locusts, and the seemingly interminable outbreaks of civil conflicts and wars. Epidemics of diseases that had earlier been under reasonable control such as cholera, yellow fever, and meningitis have reappeared with a vengeance, and foci of sleeping sickness and even plague are again assuming epidemic proportions in parts of the continent. These health problems, added to the now fully blown AIDS pandemic, place severe additional strain on health services that were themselves in an already very sick state.

Per capita income for sub-Saharan Africa is estimated to have declined by more than 25% over the past decade. This decline, in combination with rapid rates of population growth and economic structural adjustment measures adopted by many countries in the Region, has resulted in increased levels of poverty and social deprivation in most of the Region.

While the impact of the economic crisis has not been uniform for all countries, public expenditure on health in the poorest countries dropped by as much as 60% to 70% in real terms. The social sectors have so far borne the disproportionate part of these cuts, with the percentage of GNP spent on health lower now than in the 1960's. Average annual rate of growth of per capita public expenditure on health, which was 3.2% during the late 1970's, had fallen to 1.9% at the height of the economic crisis.

Even in these difficult circumstances, resource flow has continued to favor central level institutions, becoming progressively more feeble at the operational or district level. This has resulted in deterioration in staff morale, decreased service coverage and quality of care, frequent shortages in basic essential supplies, isolation and lack of supervision of peripheral staff, and degradation of existing physical health infrastructure.

Africa is experiencing the highest rate of population growth in the world and a general deterioration in most health indicators and systems as new and more virulent

forms of the major endemic diseases are gaining new ground. We have elsewhere described the main elements of what can only be called the African Health Crisis, including proposals for its resolution.

Interventions for Child Survival

Technologies:

Public health interventions to combat the main causes of infant mortality have proved to be effective and affordable. In general, they are well accepted by providers and beneficiaries. The EPI vaccination schedule proposes a full course of antigens that will protect the child before the diseases can attack him. Proper case management a key element in prevention of death from diarrhea, malaria, and acute respiratory infections. On the other hand, a series of preventive measures needs to gain acceptance among child caretakers in order to reduce the morbidity burden. Growth monitoring, breastfeeding, family planning, and prenatal care are major health technologies that serve in organizing interventions for improved child survival and development.

Commitment at the Highest Political Level

On several occasions, decision-makers at the country level and the international technical and donor community have declared their strong commitment to the protection of the most vulnerable groups, namely children and pregnant women. Various resolutions have been adopted, including those calling for the acceleration of EPI, proclamation of 1986 as African Immunization Year, Global Eradication of Poliomyelitis, and Neonatal Tetanus Elimination. Others include Women's Health and Safe Motherhood and Health of the Newborn. The OAU Summit endorsed the "declaration on health as a foundation for development" at its 23rd ordinary session in 1993, as well as reaffirming full commitment to the goals of the 1990 World Summit for Children.

In principle, this task ought not to be too difficult. During this week, we have another opportunity to go further in detail and review lessons learned from past experience in combatting childhood communicable diseases. Yet, it should be clear that we shall have to deal with the continued devastating role of HIV infection in reducing the gains so far realized in child survival.

Progress Realized

Infant Mortality Patterns

Infant mortality rates were declining in all regions of the world, including Africa between the 1950's and the late 1980's. In Africa they have dropped almost by half (47%); from an average mortality rate of 191/1000 in the early 1950's, the rate fell to 101/1000 in the late 1980's. However, the IMR in Africa are 30% higher than global estimates and seven times higher than the rates in the more developed regions.

Safe Motherhood and Care of the Newborn

As already indicated, most of the gains in African Child Survival have resulted from improvements in survival after the neonatal period. The rapid reduction of infant and under-5 mortality rates remains a priority goal not only for WHO and UNICEF, but for all countries and international partners in development.

The decision to increase action to improve health of the newborn as an integral component of safe motherhood has been adopted by the World Health Assembly. This already constitutes a major strategy within the current AFRO regional medium-term programme for MCH/Family Planning.

Expanded Programme on Immunization

EPI was launched during the second half of the 1970's. Most national immunization programmes used the organization of service delivery systems pioneered by the smallpox eradication campaign. BCG and Measles vaccines were the two antigens used during the first EPI campaigns. In the late 1970's and early 1980's, one could observe the development of a systematic approach for the delivery of EPI antigens, taking into account the fact that optimum protection from some of these antigens requires several doses.

More than a decade since the introduction of EPI, several lessons have been learned and the following positive and negative aspects deserve attention:

EPI training has provided an excellent opportunity for programme managers at various levels as well as peripheral health workers to learn basic skills in

PROGRESS ACHIEVED FOR CHILD SURVIVAL

1. INFANT MORTALITY PATTERNS

- Decrease of infant mortality rate from 191/1000 in the early fifties to 101/1000 in the late eighties.

2. EXPANDED PROGRAMME ON IMMUNIZATION

- Systematic immunization programmes have reached more than two thirds of the African children.
- Immunization coverage increased from less than 20% in 1985 to 57% in 1992 for DPT3.
- 9 countries reporting "Zero Incidence" of Polio the past few years and 5 others reporting significant reduction of Polio incidence.

3. CONTROL OF DIARRHEAL DISEASES

- ORS access rate increased from 22% 1985 to 60% in 1992 and ORT utilization from 8% to 55%

programme management. Setting targets, monitoring progress, and evaluating achieved results are the main areas of programme management that have been effective in ensuring the expansion of the programme. This training framework partly explains why in many countries, EPI served as the entry point for the development of the overall Primary Health Care System.

The commitment of donor agencies and governments in support of national

immunization programmes has provided an impetus for necessary change in national health care delivery systems, particularly in preventive care and community involvement. External support has thus contributed towards higher levels of national political commitment and at the same time increased the motivation of health workers. However, external support and high-level declarations of commitment have often seemed to contradict the limited resources allocated within national health budget in support of such preventive and health promotion activities. The consequences of this contradiction are beginning to be felt, as donor fatigue becomes manifest and national programmes flounder.

The African Immunization Year, which began in 1986 as part of the programme of action for implementing the African health development framework, was a major undertaking that continued until 1989 and led to a quantum leap in overall health development in the Region.

Realizing that systematic immunization programmes have reached more than two thirds of African children,

Member States adopted in 1988 and 1989 resolutions calling for neonatal tetanus elimination, polio eradication and measles control. Despite the leveling off in regional immunization coverage, substantial progress is being made in approximately one third of the countries. These countries are starting to initiate specific eradication and elimination strategies, including vigorous surveillance of the targeted diseases and vaccination of the groups and district at higher risks.

Although the economic situation is not improving, Member States have decided to commit national funds for the support of EPI, including the purchase of the total or part of the vaccines needed in the programme. The international community should encourage this initiative and provide, as in the past, the technical and logistical support necessary for attaining the programme objectives.

Control of Diarrheal Diseases

Given the devastating role of diarrheal diseases in child mortality, the effectiveness of Oral Rehydration Therapy in the management of diarrheal dehydration has provided real hope for PIIC, considering the cost and level of technology required with alternative strategies.

This public health intervention, however, has not been as easy to expand as had been previously hoped. Despite careful planning and training of programme managers, ORS packets are still not readily available in most health facilities, health workers appear frustratingly slow in adopting the new practices for care of children with diarrhea, beliefs and practices of the population remain deep-rooted in many countries, resulting in relative ineffectiveness of our social marketing strategies for diarrhea prevention and case management.

Nevertheless, during the past decade, the estimate of access to ORS in the Region has increased from 22% in 1985 to 60% in 1992. At the same time, estimates for ORT utilization have improved, from 8% to 55% in 1992. The programme has defined key indicators of progress and quantified its targets for 1995, given the

Year 2000 objective of reducing by half diarrhea mortality and diarrhea morbidity by quarter.

Control of Malaria

The long hiatus between the point of realization that the global malaria eradication programme had failed and the adoption of a programmatic approach to tackle malaria resulted in several thousands of children dying of complications of malaria. WHO strategies of malaria control, as defined by Conferences in Brazzaville in 1991 and Amsterdam in 1992 rely upon antimalaria drugs as the cornerstone of the malaria mortality reduction strategy.

Strategies to reduce mosquito-to-person contact, including use of insecticide-impregnated bednets, are also being investigated and advocated. Measures to limit transmission, including residual spraying of insecticides, are necessary in epidemic zones and in other areas where resources are available and the measures are shown to be cost-effective. Selective chemoprophylaxis of groups at special risk, disease surveillance, and early warning of epidemic situations constitute other components of the regional programme.

Nutrition

The first line of defense against undernutrition is breastfeeding. Great effort is therefore being directed towards encouraging the practice and protecting it by controlling the marketing of breast milk substitutes and infant foods and promoting proper infant feeding practices. Half of the countries have already adopted or are about to adopt a breastfeeding code, and as many have developed a programme of weaning food production. The Baby Friendly Hospital Initiative launched in 1991 jointly by WHO and UNICEF aims at serving as a catalyst for promoting breastfeeding. The virtual elimination of vitamin A and iodine deficiencies as public health problems constitutes important nutritional goals for the Year 2000, a challenge all the more justified as control measures are technically simple, relatively cheap, and amenable to implementation through community-based structures.

OVERCOMING MAJOR OBSTACLES

Structural, Economic and Social Constraints

Structural constraints to achieving community impact will be overcome by decentralization of authority and responsibility from the central to the local via the intermediate level. Decentralization of child survival programmes is only possible if the intermediate and local levels are well organized and can absorb the new activity.

It is important to ensure the integration of programmes at the local level, in order to provide only one health care package made up of promotional, preventive, and curative services. The process of integration calls for collaboration between several programme managers at the central level and should ensure that the components of their programmes become a single programme (the district health care package) at the local level.

Unfavorable national economic circumstances resulting in very low health budgets and a shortage of hard currency are severely felt by the health services. Normally, health authorities in such circumstances would 1) ensure equitable allocation to priority areas in the health budget; 2) find alternative ways of financing community health activities; and 3) establish, through national dialogue, permanent mechanisms for financing medical care.

Social constraints to achieving health for all include the apathy and fatalism that go with poverty, lack of fulfillment of health-related basic needs, and absence of national mechanisms for health promotion. These obstacles would be overcome by promoting social mobilization for health, providing health-related basic needs, and establishing a national mechanism for public health education.

FUTURE CHALLENGES

Programme Acceleration

Of the many challenges that lie ahead, perhaps the most crucial is to accelerate the annual rate of reduction in infant and child mortality. While the overall infant mortality rate in the region has fallen by 30% over the past three decades, the annual average rate of reduction

has remained a modest 1%, when a sustained rate of reduction of between 5% and 8% is needed if the Year 2000 Goals are to be met.

A possible approach (adopted by the 1992 Annual Meeting of Regional Directors for Africa of WHO and UNICEF) is to undertake a programme for the immediate revitalization of existing health services through integration of all child survival programmes for the delivery of the most efficient and effective package of community-based interventions.

Specific components of such a programme will include expansion and consolidation of achievements already realized in such areas as EPI and other communicable diseases control interventions; integrated maternity care, including care of the newborn; integrated training at the district level; development and institutionalization of appropriate management information systems for improved program performance; and application of the broader concept of the Bamako Initiative to assure meaningful community participation and equitable financing of health services.

Sustainability of Achieved Progress

At the country level, sharing the burden of child health interventions among people, government, and external agencies should remain a central theme of national health policies. People would have a right and a duty to participate in health activities, governments would have primary responsibility for enabling people to be healthy and remain so, while external partners would assist people and their governments in achieving health goals.

At the international level, donors' commitment and coordination are key in the needed support for implementing national plans of action aimed at achieving the child survival goals of the 1990's. EPI is a good example of a programme that deserved the attention of donors and the government. The current concerns of the declining or leveling off in coverage must be addressed properly by the international community. Although countries should strive to find the needed budget support for the long-term immunization activities, the international partners should refrain from withdrawing their support suddenly. Instead, they should ensure that current results are maintained because a decline could deter future social mobilization.

Decentralized Management of Child Survival Programmes at the District Level

Many African countries have experience in implementing the African Development Framework, also known as the African Three Phases Scenario, which emphasizes the district-oriented approach for programme planning, implementation, monitoring, and evaluation. In order to reach the 1990's goals and objectives, the implementation of various programmes for child survival should be accelerated. The most effective way to ensure that the communities most in need are not left out and actually receive adequate support is to assess the situation in each district and to provide resources according to identified needs.

Integration of Child Survival Activities

Resources are likely to remain scarce in the future. Therefore, in all circumstances, increasing efficiency in the use of resources should be the top priority. While developing or revising programme strategies, our concern should be how to get the maximum impact with limited resources. We are looking forward to the further development of the guidelines for implementing the "Sick Child Approach," promoted by WHO and UNICEF with full collaboration of many other agencies, including USAID. Substantial gains will likely be realized once planning, training, supervision, health education, logistics support, and other programme components are undertaken jointly by the current vertically oriented programmes.

Role of the WHO

WHO provides technical cooperation with Member States for reinforcing the implementation of the African Health Development Framework. WHO Country Teams, staffed by National Programme Officers, will provide assistance to the Ministry of Health in promoting community health initiatives, ensuring the provision of

a package of health care services at the district level. They will assist districts in facing challenges like neonatal tetanus elimination, poliomyelitis and guinea-worm eradication, the AIDS pandemic, or major ecological disasters.

WHO should continue to advocate for the elaboration of sound national policies in relation to child survival and development interventions. This should include greater efforts in sensitizing top political leaders on our continent and the provision of needed assistance for increased national capacity in the management of PHC programmes and activities.

Finally, WHO is eager to continue working towards greater involvement of the community in implementing health activities. Given the traditional solidarity in Africa, we are sure that success for any health initiative will only be attained if the people themselves are fully involved.

CONCLUSIONS

In conclusion, despite some improvement in child survival attained during the 1980's, the situation of the African child may be worsening in the 1990's in the face of the serious political and economic situation confronting the Region and the devastating role of the HIV/AIDS epidemic. Urgent responses are called for, and durable solutions are needed. Responses and solutions must involve the communities in the management of health activities. Having learned lessons from our experience during the last decade, let us accelerate the implementation of the various child survival programmes, in particular EPI, the control of diarrheal diseases, malaria, and ARI, in an integrated manner.

I am confident that this audience will provide us with further ideas for our joint endeavor to achieve the goals of the World Summit for Children.

THE HEALTH OF THE AFRICAN CHILD: DELIBERATIONS OF THE WORLD SUMMIT ON THE CHILD AND THE YEAR 2000 GOALS

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I would like to thank A.I.D. and CDC for giving UNICEF an opportunity to participate in such a large and important gathering of health professionals in Africa.

Africa is a special priority for UNICEF. Each year for the last several years (and we expect into the near future), UNICEF will be dedicating a greater proportion of our financial resources and of our manpower toward Africa. In this very room about 4 months ago, Mr. Grant led a large UNICEF delegation in participating in the International Conference for the African Child, in which most of the heads of state from sub-Saharan Africa and heads of donor agencies and their representatives identified needs of the children of Africa and the resources required in order to meet those needs.

I was asked to relate the World Summit for Children to Child Survival in Africa. I would boldly contend at this time that the success of Child Survival during the past decade is the foundation providing the inspiration for the World Summit for Children. This Summit, which was convened in September 1990, had representation from more than 131 countries. At that time it was the largest summit ever held. But looking back at the early 1980's, we see a pie chart showing the main killers of children: diarrhea, ARI, the immunizable diseases, and, in this region of the world, malaria. At that time the governments of the region, UNICEF, WHO, A.I.D., and the CCCD project began to focus on oral rehydration therapy, diarrheal disease, and immunization. The A.I.D. Director called immunization and oral rehydration therapy the "twin engines," the two major child survival programs in which we need to move ahead and through which we could build our work in child survival. Efforts also extend back to 1985 in Burkina Faso, a government-inspired immunization campaign called "Operation Commando". In Senegal in 1986, President Diouf launched a pioneering immunization campaign that was followed in 1987 by the African

Immunization Year. During that year we learned to develop our health care systems; we learned how to make the cold chain work even on the backs of camels. We learned how to do social mobilization and advanced in the area of multi-sectoral collaboration in health, a prospect that was in the works in Alma Ata but not yet in practice. So by 1990, the global 80% goal of universal child immunization had been reached. And according to my recollections, approximately 20 countries on the continent of Africa achieved their 1990 goals. Through the confidence, goal direction, ability to mobilize religious leaders, teachers, and district and local government, children were brought to be immunized. This experience showed that we could move to a broader agenda.

With this foundation world leaders gathered at the United Nations in New York to organize the World Summit for Children. This summit is no longer the largest ever held in the world; it has been eclipsed by the Rio Earth Summit. This shows that there are several issues around which world leaders can be brought together and about which they are likely to agree. (Fiscal policy is probably not one of them!) But the environment was a winner in Rio, and issues for children was clearly a winner in New York. The World Summit for Children, which was built upon the successes of the health sector, is a political and social contract with the children of the world. It brought agreement on a new ethic: children are first priority. Children are to receive priority in good times and bad, with the understanding that children cannot wait. They cannot wait for recessions to stop, they cannot wait for prices of commodities to rise, they cannot wait for wars to stop. According to this ethic, children are the first priority in setting goals.

Setting goals is not a new activity. Goals have been set in the 1960's and 1970's, and global goals were set in the decade of the 1980's. But the World Summit for Children introduced seven major goals for children, which include, as we see here: under-5 mortality reduction by one third, reduction in maternal mortality

by one half, reduction in malnutrition, universal access to water and sanitation, basic education of children to 80%, and reduction in female illiteracy by one half. These seven goals are supported by 26 supporting goals, which included EPI, CDD, and ARI.

The other key element of the World Summit for Children was the commitment made by the governments of the world to national plans of action. The leaders went home with a promise that they would create national plans with their governments. More than 100 countries have carried out this promise, including Japan, the United States, and most of the countries of Western Europe. Obviously, the World Summit for Children was not only intended to address the needs of children of the developing world; it was truly a global summit with great impact on how children are treated throughout the world. The national plans motivated by the Summit served as a blueprint for how countries would modify the global goals in the context of their national priorities.

A third key element of the World Summit for Children was the commitment to monitor. In prior decades goals were set and put on paper in declarations, many times they were forgotten until after the target date had passed. The leaders of the world agreed to have a mid-decade review with the Secretary General of the United Nations. I would like to tell you how the World Summit for Children goals are being monitored in Mexico. President Salinas is one of the six sponsoring Heads of State for the World Summit for Children. Every 6 months President Salinas reviews with his Cabinet the progress being made in Mexico toward achieving each goal. He has invited the Director General of UNICEF, and most recently the Director General of WHO, to sit with his Cabinet in these biannual meetings. Following these meetings a press conference is held in Mexico City, at which the ministers describe to the people of Mexico what they have achieved, and what is planned for the next 6 months. Such visible monitoring might be useful in many of the countries of Africa, making national leaders truly accountable to their people.

After having only a few goals, particularly universal child immunization, as targets for 1990, the increase to 27 goals for the year 2000 has perplexed many governments. Several countries as well as UNICEF and WHO are trying to institute a set of mid-decade goals. You may recall that many of the Heads of State who were standing so proudly in the photograph I recently

showed you are not Heads of State anymore. In fact, nearly half are no longer in place. What political leaders like to do is to set goals, which are quite long-term goals, for which they may not be accountable, or they may not be in power long enough to be held accountable for those goals. So this is why milestones are quite important - to be able to see how we are doing, to perhaps change course, or speed up what we are doing, and to drop what is not working and try again.

The second important event related to the World Summit for Children and its success is the ratification of the Convention on the Rights of the Child. This convention, passed by the General Assembly in 1989, was ratified faster than any other convention in the history of modern times. A total of 116 countries have ratified this convention. I might add that one major country that ratified the convention just a few months ago was sued soon after ratification by a group of children for failing to provide the services required. The Convention on the Rights of the Child also helps us highlight an issue that is important in many regions of the world, and is critically important in Africa: the special needs of the female child. The plight of the female child is characterized by discrimination, by having the last call to service and the first call to work.

The World Summit for Children also spawned a major advance in the area of education. In Bangkok, Thailand in 1990, a major conference was held on education, which would be the equivalent of the Alma Ata Conference for Health, at which priorities for education were outlined and strategies to achieve the education sector goals followed very closely the blueprint for health. Education is important for us, as there is a very strong link between female literacy and child survival. We in the health sector must support advances in female literacy and education, particularly education of the female child.

What are the challenges we face in the near future? Dr. Monekosso has outlined these very clearly, so I will try to be brief. Our own feeling in UNICEF, is that information for action, or surveillance and epidemiology, is key for immunization. But I submit to you that information for action, in the context of the World Summit for Children, is just as important in malaria, diarrheal disease control, ARI, and AIDS, as it is in the area of immunization. One of our highest priorities for the balance of the decade of the 1990's

must be strengthening surveillance, getting information for action to those who deliver services, keeping action related to the collection of data for use by the health sector, but also for use by the political powers at national, district, and provincial levels. These data are critical in monitoring the World Summit goals.

Some slippage has occurred in the immunization coverage in Africa. Some countries that were moving ahead very well through 1990 have slipped back, according to 1991 data. We need to build on the system we have, and to move ahead, as will be described in this meeting, in determining how to deal with a sick child and how to strengthen our preventive health measures. We need to build on past success to keep the political momentum. Again, we need to guarantee vaccines for the children of Africa. The Ministers of Health in Africa are an inspiration to us at UNICEF. They have declared that the countries of Africa, regardless of the difficult economic situation, are committed to beginning to be self-sufficient in vaccines. UNICEF is committed to support this priority in several ways: to continue to provide vaccines as needed on a donated basis, but also to help countries begin to buy their own vaccines through what we call a Vaccine Independence Initiative, which allows for the purchase of vaccines with local currency. UNICEF accepts the local currency for the

vaccines and uses this currency for local costs in country. This initiative has been funded to set up a revolving fund that allows vaccine to be procured and delivered before payment through a grant from USAID.

In addition to the priority of immunization, UNICEF is committed to diarrheal disease control, and malaria prevention and treatment in the context of the sick child. We can see that all of Africa is not the same. Part of Africa is able to move ahead to specific disease interventions and immunization, other parts need to strengthen their programs, others need to work on getting the systems in place so they can rely less on campaigns and mobile teams, and have more cost-effective immunization programs. Polio eradication is possible in parts of Africa even now. We highlight this because we feel very confident that Africa will not always lag behind; Africa can be a winner. Although we have the capacity to move ahead, a gap remains between where we need to be in the future and where we are today. Dr. Monkosso has just described many of the constraints on progress, but also the challenges we face. A commitment to progress has been made by our political leaders at the World Summit for Children and most recently in the International Conference on Assistance to African Children here in this room. Let us work toward it.

HEALTH OF THE AFRICAN CHILD PROGRESS AND CHALLENGES

CO-CHAIRS:

Deogracias Barakamfitye, WHO/AFRO, Brazzaville;
James Shepperd, A.I.D. Washington

SPEAKERS:

1) Gottlieb Monkosso WHO/AFRO, Brazzaville;
2) Terrell Hill, UNICEF, New York

SUMMARY OF THE SESSION'S MAJOR ISSUES

The future of Africa depends on child survival.

Health is, however, in a crisis state, a condition aggravated by recurring health emergencies, declining GNPs, decreasing public expenditures on health, and increased allocation of resources to central institutions. High child mortality is a consequence as well as a contributor to Africa's current economic, social, and political crises.

Annually, an estimated 4 million African children die before their fifth birthdays. These deaths result from a range of socioeconomic, behavioral, and disease risks affecting mothers and children. Major causes of infant and child mortality are perinatal and neonatal conditions, neonatal tetanus, pneumonia, diarrhea, measles, and malnutrition.

SUMMARY OF LESSONS LEARNED

The World Summit for Children represents a global commitment to the world's children, a political and social contract with the children of the world. Over 100 countries have completed national plans of action. Regular monitoring of targets, such as the biennial ministerial reviews of national progress toward targets in Mexico, is important.

With affordable technical strategies and strong political commitment, progress is being made, as evidenced by: 1) a decrease in infant mortality (from 191 in 1950-1955 to 101 in 1985-1990, 2) an increase in DPT3 coverage from 20% in 1985 to 57% in 1992, and 3) increased access to ORT from 22% in 1985 to 60% in 1992.

Availability of timely, valid data is essential to effective management: problem identification, planning, implementation, monitoring, and evaluation.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Sustain and expand results achieved by specific programs, e.g., EPI, as well as the political commitment mobilized in favor of Child Survival.

Accelerate implementation of other interventions such as oral rehydration therapy, and improved case management of certain infectious diseases such as ARI and malaria, especially through introduction of integrated management of the sick child.

Increase and sustain technical and financial support by international and bilateral technical assistance partners.

Improve coordination of external support.

Decentralize management to the district and community level.

Increase the competitiveness of the health system to support the continued service and morale of health staff.

Advocate in economic terms (e.g., cost-effectiveness) the reasons resources should be allocated to the health sector.

HEALTH AND SURVIVAL OF THE AFRICAN CHILD

CO-CHAIRS:

Olu Babaniyi, CCCD, Nigeria;
Ronald Waldman, WHO, Geneva

SPEAKERS:

1) George Bicego (DHS, USA); 2) Gora Mboup (DHS, USA)

SUMMARY OF THE SESSION'S MAJOR ISSUES

There is no single measure of child survival, and many of the countries of sub-Saharan Africa have imprecise measures of the survival of their children. Survival data can be obtained through the Demographic and Health Surveys (DHS), which provide a broad-scale perspective on recent and current mortality. In addition to measurement of levels and age patterns of child mortality, the DHS data provide information on trends in child mortality and on risk factors for death. To date, 20 sub-Saharan countries have had DHS, and the results of 18 of those surveys are available. Information on neonatal, postneonatal infant mortality, childhood mortality, and under-5 mortality are presently available for these countries, and were reviewed in this session.

Of the 18 countries, 10 are located in West Africa and 8 in Eastern and Southern Africa. In general, mortality is lower for East and Southern African countries as a group, than for West African countries. There is as much as a sixfold difference in the range of childhood deaths, with Botswana registering a level of 50/1000 at the low end of the range, and Niger, with 300/1000, with the highest level for the surveyed countries. In general, West African countries have a smaller ratio of infant-to-child mortality than East and Southern African countries. However, there are inconsistencies in this pattern across countries, and we cannot yet provide a sound explanation for the differences. Six of the 8 West African countries show declines in mortality, with 2 (Niger and Nigeria) experiencing upward trends. The Eastern and Southern African countries have a mixed pattern; at least two countries indicate upward trends. These patterns are difficult to interpret, as AIDS, economic stagnation, and political strife complicate the

situation. In general, the overall pattern is a decline in average mortality, with the largest declines in the 1-4 year age group.

The most persistent risk factor identified for childhood mortality is the education of the mother, with about 3 times the risk of mortality for less educated mothers. Increased risk of mortality is associated with birth intervals less than 24 months, with younger (<18 years) and older (>39 years) mothers, and with births of parity greater than 5. In general, higher mortality is associated with higher fertility. A higher sex ratio (male:female) was only identified for neonatal mortality. A consistently higher risk of mortality is associated with rural than with urban strata. The risk of death is 20%, 35%, and 50% higher for the neonatal, postneonatal, and childhood age groups, respectively. Mortality is higher for the urban poor than for any other sector.

Total fertility rates (TFR) range from 5 to 7.8 among the countries surveyed. Declines in the TFR were identified for three countries in East and Southern Africa - no declines, or statistically insignificant declines, were noted for the West African countries. Contraceptive prevalence varied dramatically across countries; in general, modern contraceptive methods are used much less in west African (3% upper range limit) than in East African (37% upper range limit) countries. However, there is great variability among the types of modern contraceptives used, and in the West African countries, there is much greater reliance on traditional methods of contraception. In general, the need for modern contraception is high, based upon desired numbers and spacing of births; high levels of need for contraception are being met in many Eastern and Southern African countries, but not in West Africa.

SUMMARY OF LESSONS LEARNED

Following in the tradition of the World Fertility Surveys, the DHS provide information on national fertility and mortality levels, patterns, and trends. For many sub-Saharan countries the DHS are an important source of reliable information on child survival. Although many of the risk factors for mortality

identified in the DHS are known from other studies, the consistency in the association of the same risk factors with increased mortality across countries and regions clearly identifies the need to address those common risk factors. In view of the World Summit for Children objectives for the Year 2000, the DHS are an important means of gathering information to monitor progress towards many of the objectives. For many countries DHS may continue to be the principal method for measuring attainment of some of the objectives at the end of the century.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

The DHS play an important role in providing national, regional, and international perspective on levels, patterns and trends in child survival. Recently more

attention has been given to the possible role of expanded DHS within larger countries to allow for measuring regional differences in population characteristics. Until reliable vital registration systems are developed, the role of surveys will continue to be important. The relatively high cost of DHS limits the potential for large scale expansion of their scope and frequency, but with appropriate modification, they will probably be an important means by which to monitor the World Summit for Children objectives during the next decade. An issue deserving further consideration is the role of the male in reproductive health and maternal and child mortality. A considerable amount of data on many variables is collected in the DHS, and requests for tabulations, reports, and data sets indicate that the data are not being used to the extent possible at the national, regional, and international levels.

USE OF DATA IN POLICY FORMULATION, PLANNING, IMPLEMENTATION, AND EVALUATION

CO-CHAIRS:

Ronald J. Waldman, WHO, Geneva;
Shiva Muragasampillay, Ministry of Health, Zimbabwe.

SPEAKERS:

1) Okey Nwanyanwu (presenting for Peter Kazembe, Ministry of Health, Malawi); 2) Antoine Kabere (WHO/AFRO, Brazzaville); 3) Paul Arthur (Ministry of Health, Ghana and the London School of Hygiene and Tropical Medicine); 4) Gaston Djomand (Projet RETRO-CI, Côte d'Ivoire), and J. Nyamongo (National Laboratory Services, Kenya); 5) Michael Miggade (Makerere University, Uganda); 6) Dayl Donaldson (Harvard University, USA) (presenting for Julia Walsh).

Blood transfusions and HIV transmission - use of data from multicenter studies to assess the conditions for transfusions needed to save lives and to determine screening practices to prevent HIV transmission;

Nutrition - use of DHS data to facilitate finalization of the National Food and Nutrition Policy and Strategy in Uganda; and

Use of data to evaluate the success of non-project assistance by an international donor agency in providing incentives for reforming health policies to raise the priority of primary health care.

SUMMARY OF THE SESSION'S MAJOR ISSUES

This session demonstrated the effective use of data by Ministries of Health in formulating health policy, and in planning, implementing, and evaluating public health program strategies. The six presentations demonstrated different types of policy decisions that had been taken to solve different and important problems in child survival. These decisions were based on health data obtained from different sources, and collected and analyzed using different methods. The session addressed the following health problems and data-based problem-solving approaches:

Malaria - use of sentinel *in vivo* resistance data (periodic surveys and specific research studies), in-patient hospital mortality data, and other health data to develop a national case-management policy;

Diarrhea - use of quantitative household survey data to plan complemented by qualitative data to monitor and assess national CDD programs as part of focused program reviews;

Vitamin A deficiency - use of data from cross-sectional and longitudinal studies, and multiple large-scale field trials conducted in different geographic areas and countries to formulate program policies (interventions, delivery systems);

SUMMARY OF LESSONS LEARNED

The following lessons were learned:

Decision-makers at all levels of the health system - senior policy makers at the national level, decision-makers at provincial, district levels, health care workers in the clinic - need to actively identify information needs and to feel responsibility for using data.

To be viable, health information systems need to produce data that will be used by health care workers and decision makers at local levels, as well as at provincial and national levels. There is a need to develop sustainable health information systems beginning with collection and use of data at peripheral levels, with information then sent to central levels. Information flow and use must occur in both directions - from the periphery to central offices, and from central offices to the periphery.

Supervision is recognized by Ministries of Health as an important component of health systems that in providing essential data for improving case management and the program effectiveness, and in helping to ensure data quality. However, supervisory activities, including training in supervision as well as conducting supervisory activities on an ongoing basis frequently

receive too little attention. Mechanisms and responsibility for funding and implementing ongoing supervisory activities need to be identified.

Health problems frequently are multi-causal in nature. If the appropriate types of data are collected and analyzed to identify different problems (including political, social, cultural, economic, demographic, as well as morbidity and mortality), multi-sectoral solutions to problems can be identified and incorporated into plans of action. Health information systems need to include a variety of data sources, providing qualitative as well as quantitative data needed for decision making.

Ministries of Health can develop beneficial relationships with academic centers, allowing the research community to provide information needed for policy formulation and implementation.

Presentation of high-quality and compelling information, governments can be sensitized to the need for addressing blood safety and developing and implementing programs aimed at improving the appropriate use of screened blood.

Changing the process of decision making requires creating an environment in which decision makers appreciate the importance of data and in which data-based decisions can be made.

Policy decisions based on the best available data are a good beginning, but the challenge then is to implement those decisions.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Undertake activities and interventions at all levels of the health system to:

- Close the gap between individuals and institutions responsible for using data and those responsible for producing health data;
- Build the capacity of data users to actively identify information needs and then to understand how to use the data; and
- Build the capacity of data producers to focus attention on providing essential high-quality data.
- Focus attention on using data effectively at each level of the health system to formulate policy and programmatic decisions and implement those decisions.

IMPROVING AND MAINTAINING THE QUALITY OF PRIMARY HEALTH CARE SERVICES

CO-CHAIRS:

David Nicholas, Quality Assurance Project, USA;
Antoine Kabore WHO/AFRO, Brazzaville

SPEAKERS:

1) David Nicholas , (Quality Assurance Project, USA);
2) Rose Macauley (REACH, USA); 3) Mounir Touré
(Ministry of Health and Social Action, Senegal); 4) Peter
Gokir (Jos State Ministry of Health, Nigeria); 5) Munkatu
Mpese (Ministry of Health, Zaire); 6) Lucille Imboua
Coulibaly (Treichville University Teaching Hospital, Côte
d'Ivoire).

SUMMARY OF THE SESSION'S MAJOR ISSUES

Quality assurance is defined as a set of activities carried out to set standards and to monitor and improve performance so that health care is as effective and safe as possible. There are two major aspects of quality assurance: quality assessment and quality improvement.

The assessment of quality requires the establishment of standards and their communication to health workers. Monitoring of service quality can then be based on these standards, and implemented either by supervisors or by health workers themselves. Examples presented during the session included facility-based assessments of health worker performance in Nigeria and elsewhere. Supervision can play an important part in quality assessment, but results from operations research in Senegal suggest that few supervisors actually make use of supervisory visits to observe health worker performance.

The improvement of service quality includes:

- Identifying and prioritizing problems;
- Defining problems clearly;
- Identifying who should participate in solving the problem;

- Analyzing why the problem occurs;
- Choosing and designing a solution;
- Implementing the solution; and
- Evaluating the results.

Approaches to quality improvement presented and discussed in the session included the development of a continuing education system in Nigeria that combines workshop-based training with supervision to achieve changes in health worker and supervisory performance; an approach to institutionalizing operations research in Zaire that supports multiple problem-solving exercises and resulting improvements in service design and quality; and facility-level use of routine patient intake data at a Diarrheal Treatment Unit in Côte d'Ivoire to identify needs for additional services, to select participants for training, and to define operational research needs.

Total quality management approaches emphasize the needs of the client, the importance of the service delivery process rather than the individual worker, the role of data in monitoring quality and identifying and solving problems, and the advantages of a team approach to service improvement. Results provided in this session suggest that these principles apply at all levels of the health system, and can lead to significant improvements in the quality of primary health care services.

SUMMARY OF LESSONS LEARNED

Methods for assessing the quality of PHC services are available and feasible for use in African settings. Special surveys in communities and facilities, as well as focus groups, can provide useful data for program planning, but are less sustainable than the use of routine program activities (such as supervision) for quality assessment.

Supervision holds promise as a routine method for both quality assessment and quality improvement, but supervisory skills and systems need to be improved.

One promising strategy for quality improvement is the development of continuing education systems that provide ongoing needs assessment, training, follow-up, and supervision to health workers.

The availability and use of data is a critical part of quality assurance, and program quality can be improved through systematic use of data at all levels of the health system

Systems approaches that incorporate field-based follow-up, supervision, and effective management to ensure the availability of medicines and equipment are more likely to result in improved service quality than are discrete, "one-stop" approaches.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Additional applications of quality assurance approaches should be systematically developed and field-tested.

Preliminary evidence suggests that training activities should be broadened to include effective supervision, follow-up, and the development of more comprehensive approaches for the continuing education of health workers.

Further support should be provided for strategies designed to increase the collection and use of data at the peripheral and facility levels as a means of improving service quality.

INTEGRATING CARE OF THE SICK CHILD

Jim Tulloch, WHO Geneva

Pneumonia, diarrhea, measles, malaria, and malnutrition account for four out of every five deaths in children less than 5 years old in developing countries. Annually in Africa, 1.5 million children die of acute respiratory infections, another 0.8 million of diarrhea, and 0.5 million from measles. One million deaths are attributed to malaria, mostly in children; 50% of preschool children have protein energy malnutrition.

Throughout the 1980's, these disease problems have been tackled at global and often at national level by single disease control programmes. This "vertical" approach, as it is usually called, has extended to the field in training, communication, and evaluation activities and, to a lesser extent, in information systems and drug supply. Recent years have seen increasing pressure for a more efficient approach. AID's CCCD project, the sponsor of this conference, was among the first to call for an integrated approach to childhood disease.

At about the same time research findings were pointing to the way in which the major illnesses of children may be inextricably linked. Research conducted with support from CDC, WHO, and the MRC in the Gambia, shows that malaria and pneumonia often share many common clinical features. Overlap in the treatment approach has also been defined. Recently, our colleagues in the Expanded Programme on Immunization (EPI) have taken a greater interest in measles case management. They recognize that even with high vaccination coverage levels, some children will get measles and some of those will die if not adequately treated for diarrhea or pneumonia. In addition, there has been a growing sense of urgency for greater focus in nutrition counseling to help reduce mortality from infectious childhood diseases, especially but not only diarrhea.

For all of these reasons WHO and UNICEF have initiated development work on an integrated approach to case management for the sick child focusing on diarrhea, ARI, measles, malaria, and malnutrition, but also covering associated eye and ear problems and anemia. While many health workers may already practice integrated care, in most countries the difficult task of

"integration" is now left to the individual health worker. He or she must bring together the knowledge and skills, often acquired in disease-specific training courses, at the time of treating a patient.

A fully integrated approach would have programs collaborating in the use of integrated guidelines and training materials. Such an approach would not be limited to training but would also involve supervision, monitoring, evaluation, and logistics.

Whether an integrated approach is seen as new and exciting or as simply catching up with what is already being done in many places, we believe it can improve the efficiency and quality of care.

What we would like to share with you today is not a set of guidelines that are fully developed and ready to implement. This is the start of a developmental process with which we need your help. The areas of diarrhea and ARI case management have been the first to define in the simplest possible terms the minimum effective approach to treatment feasible in the prevailing conditions. Components of treatment have been expressed on case management charts that serve as training aids and a reference. Around these training modules a wide range of program tools have been developed.

For the integrated management of childhood illness, we are proceeding the same way to develop first a training course for health workers in first-level facilities. A case management chart that will form the technical care of this course will cover assessment of the child and classification of the illness. A second chart summarizes treatment instructions, and the third provides details on how and what to advise the mother (or other caretaker). Training modules to be developed will focus on teaching the knowledge and skills needed for clinical management of cases as summarized on the charts. Other modules will deal with organization of work in health facilities.

The initial assessment of the sick child involves checking for danger signs that indicate the need for urgent referral or admission. Then four questions are

asked about all children to ensure that the principal presenting complaint does not lead the health worker to a premature and incomplete diagnosis that overlooks a second or third condition.

Those four key questions cover the symptoms of coughing, diarrhea, fever, and ear pain or discharge. Then the nutritional status is checked for all children, using simple visible criteria (and weight where possible). The immunization status is also checked in all children. For any 'yes' answer to the key questions, further questions are asked, and the health worker is to look, listen, and feel for various diagnostic signs. Each of the illnesses is then classified using a standard color-coded triage system. Nutritional status is also classified for all children

According to the color-coded triage system, for all the conditions red means urgent referral or admission to hospital, yellow means treatment at the first-level facility, and green means to send the child home with home care advice. We believe this standard approach to all conditions will greatly facilitate health worker training and practice.

The case management process is then completed with two further steps: treat the child and advise the mother. The training modules will emphasize skills development and, as much as possible, hands-on experience. Training on advising the mother will teach and practice a four-step process. One of the very important steps focuses on identifying signs that indicate it is necessary to return to the health worker.

The full range of topics to be covered by the "organization of work" training modules has not yet been defined, however, they will certainly cover the essential skills needed to ensure an adequate regular supply of the seven essential drugs needed for this approach. They will also cover planning of services to deliver care efficiently, simple goal setting that considers the population served and the expected demand for services, and monitoring, especially of the quality of care.

The following preventive interventions are covered by this approach to the sick child. First, immunization is given to ensure that the opportunities are not missed. Secondly, the mother is given nutrition advice: on breastfeeding, improved weaning practices, and feeding

during convalescence. Finally, vitamin A supplementation is indicated where appropriate. These are very important aspects of case management.

We are at the beginning of a process involving research and materials development. There has already been excellent collaboration within WHO, particularly the programmes responsible for the control of measles, malaria, diarrhea, ARI, and nutrition, but also with other relevant programmes as well. Collaboration is also close with UNICEF, CDC, and other partners. I would like particularly to acknowledge the support from USAID and the agency (A.I.D. Washington) input into this process.

Development of case management charts is proceeding and will include thorough field testing. Once the integrated guidelines and training materials are available, we hope by the second half of 1994, implementation of integrated training will begin in some countries in which the national authorities feel it is appropriate and timely. WHO and perhaps other agencies involved hope to work with countries in the adaptation and use of the materials. As with all materials, revisions will be necessary based on experience in using them. The materials will then be available for wider implementation, eventually leading to efficient integrated training of health workers in all countries in which there is a need.

At each step along the way, carefully conducted research will be needed. Initial steps to define a global research agenda are underway. Research to verify that the chart process works is already planned with the participation of the CDC. Assessments made by health workers trained to use the charts will be compared with those made independently by a skilled clinician.

In this development process there is a tension between those who want the materials to be available immediately and those who want to proceed slowly until we know what works. One aspect is certain; the case management charts on their own will change little. We should not attempt to use them until we have fully developed, fully field-tested training materials.

But we should not wait until these materials are developed to proceed with the control of diarrhea, ARI, measles, malaria, and malnutrition. For some of these conditions, complete guidelines exist, strategies have

been developed, activities have been planned, and in some countries indicators have been defined and measured. Our first moment of responsibility after leaving this conference is to accelerate and intensify those efforts. WHO and the other agencies present stand ready to play their role.

I would like to conclude with one further thought about an integrated approach to the sick child. We believe such an approach will be more efficient and more cost-effective, but it will not save money overall if we do it right. What I mean is that more money has to be devoted to child survival, not less. Coming here from

Geneva, I was reading in the newspaper that one developing country, not in the region, is purchasing 24 military aircraft at \$50 million each. It is incredible how much the world is prepared to spend making strong men feel stronger. I believe our first responsibility is to the most vulnerable of the world's population, the children. And they are particularly vulnerable when they are sick. The management of sick children deserves more of the world's resources than it currently receives.

We, all of us, are their voice when it comes to discussing the allocation of resources. For them we have to continue to speak up for more support.

DIARRHEA

CO-CHAIRS:

Suzanne Prysor-Jones, Academy for Educational Development, USA;
Antoine Kabore, WHO/AFRO, Brazzaville

SPEAKERS:

1) Adenike Grange (Lagos University Teaching Hospital, Nigeria); 2) Richard M'Manga (International Eye Foundation, Malawi); 3) Adama Kone (PRITECH-Sahel, Senegal); 4) Lazare Manirankunda (Ministry of Health, Burundi); 5) Flavien Ndonko (Pan African Association of Anthropologists, Cameroon);

SUMMARY OF THE SESSION'S MAJOR ISSUES

Approximately 60% to 70% of the African population has limited or no access to health facilities, and thus to facility-based oral rehydration therapy. Appropriate use of home-fluids and foods can prevent dehydration in up to 90% of cases of diarrhea. Recipes such as ORS and SSS rely on materials not often available. In Nigeria, gari, a popular fermented cassava drink made from available and acceptable ingredients performed better than WHO-ORS in treating dehydrated children with diarrhea.

Exclusive breastfeeding from 0 to 4-6 months of age has been shown to be protective against several diseases, including diarrhea and ARI. In rural Malawi, 60% of infants received supplementary foods by 2 months of age. The prevalence of diarrhea was six times higher among children who received supplementary foods compared to those who received no supplementary foods. Reasons for premature introduction of foods were insufficient quantities of breast milk and traditional beliefs that breast milk alone was not an adequate diet for young infants.

Persistent diarrhea (PD) has been found to be an important cause of diarrhea-associated mortality in several developing countries. The prevalence of PD in Mali, Senegal, and Niger ranged from 6% to 22%; 77% to 90% of children with PD were malnourished. Epidemic dysentery has emerged as a major problem in many African countries, affecting all age-groups and causing high morbidity and mortality. In Burundi,

seasonal epidemics of dysentery occur and are due to *Shigella dysenteriae* type 1, completely resistant to all available effective oral antimicrobials in the country, including cotrimoxazole and nalidixic acid, the first and second line therapies. The case-fatality ratio of persons with dysentery after treatment with cotrimoxazole was 6% to 10%. Specific risk factors for acquiring dysentery in Burundi included not having soap in the house and not washing hands before preparing food.

Traditional beliefs and practices play an important role in acceptance and use of oral rehydration therapy. In a rural community in Cameroon, mothers first gave herbal drinks and enemas in the home, and then if there was no improvement, the child was taken to a traditional healer or health center. Often, all sources of care were used. Mothers use a sophisticated classification scheme with well-established traditional criteria to determine the source and type of treatment, which was often inconsistent with the biomedical model of diarrhea.

SUMMARY OF LESSONS LEARNED

Most cases of diarrhea can be treated effectively at home with cereal-based oral rehydration solutions. These solutions perform as well or better than WHO-ORS in treating mild dehydration, and can be made from locally available and acceptable ingredients. Specific criteria for identifying appropriate home-fluids include cost, availability, acceptability, efficacy, safety, and ease of preparation.

Although most women in Africa breastfeed for appropriate durations, early introduction of supplemental foods is very common and contributes to excessive rates of diarrhea among young infants. Exclusive breastfeeding between 0 and 4-6 months of age is one of the most cost-effective ways to prevent diarrhea, but will involve changing traditional beliefs and practices and provision of lactation management education to optimize breast milk production.

Treatment of epidemic dysentery due to *Shigella dysenteriae* type 1 infections is complicated by high levels of resistance to recommended antibiotics, particularly cotrimoxazole, and can result in high mortality. Resistance patterns can change rapidly and

require periodic monitoring so that treatment policies can be reviewed and changed, if needed. Although modes of transmission are multifactorial, specific behavioral risk-factors for acquiring dysentery were identified and can form the basis for preventive actions.

Persistent diarrhea is less common than acute watery diarrhea, but is much more likely to result in serious illness and death. The high correlation between persistent diarrhea and malnutrition indicates that this syndrome is primarily a nutritional disease and that effective interventions will require strategies that effectively prevent and treat malnutrition.

Promotion of oral rehydration solution is often not compatible with longstanding models of disease and treatment ingrained in the medical culture of the community. These widely and strongly held beliefs can inhibit use of ORT and are often not addressed by health care workers, resulting in poor acceptance and use of ORT.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

The variability of staple cereals used in different communities results in a proliferation of many different types of home-fluids, which makes it difficult to standardize national policy and issue specific recommendations. The feasibility and impact of implementing strategies at a national level that focus on increasing use of home-fluids to treat and prevent dehydration need to be carefully assessed.

Increasing the proportion of mothers who exclusively breastfeed could greatly reduce the incidence of diarrhea

among infants. Challenges programs face in reducing early introduction of foods will involve further understanding and changing traditional beliefs that motivate mothers to introduce supplemental foods prematurely.

Training health workers in nutritional management of malnourished children with persistent diarrhea is needed, in addition to training in treatment for dehydration. Difficulties include the need for development of specific feeding guidelines and recommendations for follow-up and continued treatment in the home. Qualitative and ethnographic studies, and household trials should be conducted to identify appropriate messages for caretakers and appropriate guidelines for home-based management.

There is an urgent need for identification of cheap and effective antimicrobials to reduce the high mortality associated with epidemic *Shigella dysenteriae* type I infections. The capacity of laboratories (to identify infections and appropriate antimicrobials) needs to be strengthened nationally and regionally. The growing cost of treatment emphasizes the need for more selective use of antimicrobial therapy, and identification and implementation of community-based strategies to prevent acquisition of dysentery.

A better understanding of the strong and widespread traditional beliefs that motivate mothers to seek alternative sources of care outside the public health sector, are needed. Health education messages can then be developed to address conflicts with traditional beliefs, and thereby to increase acceptance and use of oral rehydration therapy.

CONTROL OF ACUTE RESPIRATORY INFECTIONS

CO-CHAIRS:

Ezekiel Wafula, University of Nairobi, Kenya;
Terrell Hill, UNICEF, New York

SPEAKERS:

1) Deogracias Barakamfitye (WHO/AFRO, Brazzaville);
2) Doyin Fagbule (CCCD, Nigeria); 3) Marguerite Timite-Konan (Centre Hospitalier et Universitaire de Yopougan, Côte d'Ivoire); 4) Hamissou Maoude (Ministry of Health, Niger); 5) Mavis Nxumalo (Ministry of Health, Swaziland);
6) Ezekiel Wafula University of Nairobi, Kenya);
7) David Robinson. (WHO, Geneva).

SUMMARY OF THE SESSION'S MAJOR ISSUES

Acute respiratory infections (ARI) are a leading cause of childhood morbidity and mortality in many African countries. ARI may account for one-third of childhood deaths and 25%-50% of outpatient visits. To address this problem, WHO has developed guidelines for standard case management of children under 5 years of age with ARI, including recommendations for diagnosis, treatment, and patient education. Standardized ARI case management has been shown to reduce childhood pneumonia mortality substantially. Nevertheless, sub-Saharan African countries have been slow to adopt programs based on these guidelines. The reticence of senior health workers to adopt new approaches, the perception that ARI control is separate from other WHO programs, and financial concerns have all contributed to delays in adoption and/or implementation of national control programs. To date, only 26 of the 46 countries within the WHO/AFRO region have ARI program plans, and just five are implementing ARI activities nationwide.

Research by African workers on a variety of clinical, ethnographic and program issues has indicated a pressing need for standardized case management. A study conducted in MCH centers in Abidjan, Côte d'Ivoire, found that physicians and nurses seldom examined patients for respiratory rate (1%) and chest indrawing (21%), which are simple standard clinical features used to diagnose pneumonia. Children diagnosed with upper and lower respiratory infections received prescriptions for an average of 3.7 drugs each,

at an average cost of U.S. \$25 (equal to 20% of the minimum monthly salary). Equally important, few mothers (5%) received advice on how to administer therapy, how to care for their sick children at home, or when to return to the clinic. Health facility surveys conducted in Ojo and Ife Central Local Government Areas in Nigeria yielded similar results. Fewer than 40% of health workers assessed children for difficulty in breathing or counted respiratory rates. Ethnographic studies conducted in Swaziland and elsewhere showed that mothers employ specific terms for ARI and recognize danger signs. Health workers frequently do not incorporate this vital knowledge base into patient education. Without access to standard case management, mothers often treat ARI themselves, sometimes using harmful practices and delaying referral to facilities. Such findings have helped several countries adopt appropriate strategies to standardize case management.

Severe economic constraints have forced many African countries to depend heavily on outside assistance to initiate ARI control programs. Countries may prepare plans tailored to the priorities of the external funding agencies, rather than using internal resources that are more likely to be sustainable. For example, while non-government organizations (NGOs) provide up to 40% of health services in some African countries, governments do not always identify them as potential partners in ARI control. Despite their resources and experience in primary health care, NGOs often lack knowledge of WHO ARI program guidelines; however, many wish to learn more and to cooperate with national governments. Institutions in Africa are active in ARI operational research in several areas. Particularly promising areas include:

- Developing effective monitoring and evaluation systems;
- Developing systems to monitor antimicrobial susceptibility;
- Examining the epidemiology of ARI in severely malnourished children, in infants less than 2 months of age, and in HIV-seropositive children;

- Evaluating potential risk factors for pneumonia, such as indoor air pollution and chilling;
- Developing primary prevention strategies for ARI through participating in vaccine trials for infections due to *Haemophilus influenzae*, *Streptococcus pneumoniae* and respiratory syncytial virus; and
- Clarifying the diagnostic and therapeutic overlap between malaria and pneumonia.

Finally, African programs need to consider ARI control as an integral part of ongoing child survival programs; they should include essential drugs activities to reduce cost and ensure regular availability of standard antimicrobials.

SUMMARY OF LESSONS LEARNED

Health workers already treat children with ARI, even if these services do not follow WHO guidelines. Health workers should not view standard case management as a new technology or as more expensive than current approaches. The WHO-recommended approach, though simple, is more effective and less costly than current practices. Countries may adopt standard ARI case

management more readily if they consider these factors.

ARI control strategies need not be developed from scratch. Countries can modify and apply certain existing child survival techniques to ARI control. For example, Swaziland, having trained traditional healers to refer children for vaccination, will now train them to refer children with possible ARI to facilities.

Health worker training must emphasize learning through practical skills performance rather than passive learning. Training should include regular supervision focusing on observation.

Effective case management programs require systems to ensure a reliable and sufficient supply of resources. Antimicrobials need to be available to ensure program quality, including health worker performance and motivation.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Technically sound and cost-effective approaches to ARI case management exist, as well as internal and external resources to support them. African countries should therefore act now to develop or accelerate their national ARI control programs.

MALARIA

CO-CHAIRS:

Deogracias Barakamfitye, WHO/AFRO, Brazzaville;
Richard W. Steketee, CDC, Atlanta

SPEAKERS:

1) Deborah McFarland (CDC, Atlanta); 2) Okey Nwanyanwu (USAID/CDC, Malawi); 3) Linda J. Schultz (CDC, Atlanta); 4) Brian Greenwood (Medical Research Council, the Gambia); 5) Cham Mohammadou (Medical Research Council, the Gambia).

SUMMARY OF THE SESSION'S MAJOR ISSUES

The malaria session addressed technical and programmatic issues involved in combatting a disease which causes over 100 million illnesses and 1 million deaths each year, at a cost which is projected to rise to 1.8 billion dollars per year by the year 1995. The cost of malaria begins at the household level, as illustrated by Malawi, where a significant portion of individual annual income is spent on the treatment of malaria, with a smaller expenditure for prevention.

In Malawi, severe anemia is a frequent cause of hospitalization and mortality. Recent studies documented the frequent recurrence of clinical illness (fever) and poor recovery of hematologic status following treatment of malarial illness with chloroquine (CQ). In contrast, children treated with sulfadoxine-pyrimethamine (SP) remained afebrile and had significant increases in hemoglobin level within 21 days following therapy. Based on this information, Malawi decided to change first-line antimalarial from CQ to SP to maximize parasitologic clearance, fever resolution, and hematologic recovery following malaria illness in children.

Another challenge addressed through locally collected data was the importance and management of malaria during pregnancy. Because the incidence of low birth weight can be reduced by preventing placental malaria infection with an effective antimalarial, studies were conducted to define an antimalarial intervention that is effective, deliverable, and affordable. A two-dose regimen of SP (first dose during second trimester with a

repeat dose at beginning of the third trimester) is highly effective in preventing placental malaria infection, feasible to provide within the existing antenatal care system, and affordable. This strategy is currently being adopted as part of the national policy for malaria control.

In the Gambia, prevention of malaria through the use of insecticide impregnated bednets has been shown to reduce under-5 mortality in an area with seasonal transmission of malaria. With whole-village implementation of treated bednets, decreases were seen in the percent of children having clinical attacks of malaria and splenomegaly, and an increase in the mean hematocrit was observed. Mortality during the rainy season, the period of highest transmission, was significantly lower in villages using insecticide-impregnated bednets. Based on this information, the Gambia is implementing a national impregnated bednet control programme. Bednets will be made available over a 2-year period in all primary health care villages. Plans are formulated to evaluate the impact of this plan on under-5 mortality and pregnancy outcome, as well as to explore programmatic aspects of the plan, such as cost-effectiveness and ways in which to sustain financing.

SUMMARY OF LESSONS LEARNED

Although current household expenditure on malaria treatment is high, willingness to pay for malaria-related services through the health care system cannot be assumed. Individuals and families may choose to direct resources to other areas, dependent on perceived effectiveness and efficiency of services provided by the health care system.

The time to switch from CQ to another first line drug for both the treatment of malarial illness and the prevention of malaria during pregnancy is past due in countries with high levels of CQ resistance. Young children are continuing to be parasitemic and anemic because of an ineffective drug, and preventable low birth weight is continuing to occur.

In some areas, the prevention of malaria through the use of insecticide-impregnated bednets may help decrease malarial illness and malaria mortality.

Programs should address whether proposed interventions are deliverable and acceptable to the target populations, as well as cost-effective.

Local data can be collected and utilized to assist malaria control program managers and Ministries of Health to change policy and implement new control methods.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Cost and expenditure data must be linked to data on the effectiveness of malaria treatment and prevention activities and the efficiency of services provided to determine whether the resources are spent appropriately.

Guidelines should be established to assist program managers in identifying critical points that indicate when changes should be made in the first-line antimalarial.

Ongoing monitoring of antimalarials currently used and antimalarials newly adopted as first-line must be conducted to document the level of drug resistance over time and to assist in early recognition of deteriorating drug efficacy, before the effects are reflected in increases in morbidity and mortality.

Prevention strategies must continue to be explored, and the role of such strategies, including impregnated bednets, defined in areas with different patterns of transmission and/or drug resistance.

Sensitization sessions and awareness campaigns should be designed to maximize acceptance of interventions, such as insecticide-impregnated bednets. Behavioral characteristics that may affect the utilization or efficacy of insecticide-impregnated bednets should be monitored.

High-risk groups such as young children and women in their first or second pregnancy must be clearly defined so that resources and interventions are focused where the effect will be greatest.

SICK CHILD

CO-CHAIRS:

James Tulloch WHO, Geneva;
Doyin Fagbulc, CCCD, Nigeria

SPEAKERS:

1) Ekoe Tetanye (Ministry of Health, Cameroon); 2) Brian Greenwood (Medical Research Council, the Gambia); 3) Stephen Redd (CDC, Atlanta); 4) Raymond Dogoré (Ministry of Health, Côte d' Ivoire); 5) Charles Mugeru (Makerere University, Uganda).

SUMMARY OF THE SESSION'S MAJOR ISSUES

A. *Report from the 3-day ARI, Diarrhea, Malaria Workshop*

The workshop objectives were 1) to present updates in the three disease areas, and 2) to discuss the major constraints and opportunities shared by the programs and assess the implications of a more comprehensive approach. Examples of a more comprehensive approach were presented, one from the Control of Diarrhoeal and Respiratory Diseases Division at the WHO and one from the Federal Ministry of Health, Nigeria. Integrated child care is now mandated by the experience of several countries, such as Nigeria and Namibia, and many international organizations are advocating for its implementation. Consequently, participants identified the need to perfect an algorithm designed for such integrated care at the most peripheral level of the health system. Workshop participants identified major implications of these new approaches at the national level, the level of donors, and the regional level. Workshop participants identified the following problems and prospects:

At the National Level

National policy regarding integrated child care needs to be defined with participation of all partners, including donors. New methods of management and allocation of resources will be required. While this new approach may result in savings in time and resources, it is important that an integrated program not diminish the output of already existing vertical programs.

At the Intermediate Level

Supervision will need to be defined and arranged differently. The process of redefinition should involve program managers and trainers. Logistical support for supervision must be assured, and attention must be paid to ensuring motivation of health personnel. High-quality, integrated training must be provided to health personnel. The information-education-communication (IEC) component must be strengthened to improve health care in the home. A list of essential medicines and supplies must be defined.

Each country should have the opportunity to define the operational level of this initiative in its own health system. The integrated care approach offers the possibility to improve the referral system for at all levels.

Areas not addressed in the new approach included the role of the laboratory, the collaboration between the Ministry of Health and the University, the problems of drug resistance and drug side effects, the role of IEC in especially in training, and compliance with therapy. Workshop participants concluded that new approaches must be evaluated in the field, refined, and adapted at the local level.

B. *Diagnostic and therapeutic overlap of malaria and pneumonia*

Data from the Gambia show that children with signs of pneumonia frequently have malaria. The two consequences following from this observation are that 1) children may be misdiagnosed, and 2) health statistics may be incorrect, as cases of malaria may be recorded as pneumonia cases. Cotrimoxazole, the recommended drug for pneumonia, is effective therapy for malaria and can be used to treat children with signs of pneumonia in malaria endemic areas without having to use a second drug.

C. Hospital follow-up study and causes of death

A hospital-based follow-up study from Kenya showed that in the two months after hospital admission, nearly 25% of children had died. More than half died after discharge. The major clinical presentations of children who went on to die included conditions addressed by the malaria, ARI, and diarrhea disease control programs. Major laboratory findings indicated conditions addressed by these programs but also included very severe anemia and bacteremia. The greater the number of clinical syndromes, the greater the likelihood of death. Treatment of malaria with chloroquine was associated with an increased risk of death, and treatment of bacteremia with a drug to which the organism was not sensitive or for less than 3 days was associated with death.

D. Severe illness in patients with diarrhea

A clinic-based study of children with diarrhea identified characteristics of children with severe illness compared to those with less severe illness. Severely ill children were less likely to be vaccinated against measles, and were more likely to be dehydrated and to have severe malnutrition, bacteremia, and malaria parasitemia. Severely ill children manifested a greater number of clinical and laboratory findings than children with less severe illness. A comprehensive approach to assessing and managing children with diarrhea was proposed.

E. Integrated DTU training

The evolution of the CDD program in Uganda was described. Although the program has been in operation since 1984, a facility survey in 1991 documented a low level of performance. A revised DTU curriculum was developed to address these deficiencies and particularly to emphasize more comprehensive assessment and improved nutritional support.

SUMMARY OF LESSONS LEARNED

Microscopy should be available at the referral level.

Disease control programs should aim to prevent children from becoming so severely ill that they require hospitalization.

In-hospital case management must be improved. The high post-hospital mortality rate documented in the Kenya study might be similar to rates seen in other hospitals.

Children who are ill enough to need hospitalization frequently have multiple clinical problems that require management.

Targeting of children with chronic severe problems for intervention can improve their chances for survival.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Recognition and management of children with anemia and bacteremia need to be incorporated into an integrated approach.

Protocols for inpatient management should be considered, especially when recommendations for referral are assessed.

Marketing the sick child approach to national managers and technical assistance partners will be needed to assure adequate resources. Current resources are insufficient.

The sick child approach offers opportunities to concentrate on the important constraints that are limiting program implementation.

Although the approach is not fully developed and is beginning as a training strategy, it must include aspects beyond training.

Donors, Ministries of Health, and technical experts must collaborate fully in implementing the sick child approach.

PREVENTION AND THE YEAR 2000 GOALS FOR CHILDREN: FIVE KEY ISSUES

Walter Dowdle, Deputy Director,
Centers for Disease Control and Prevention
Atlanta, Georgia, USA

Bill Roper, Director of CDC, traveled last year to many of your countries with former Secretary of Health and Human Services Sullivan and former A.I.D. Administrator Roskens. Dr. Roper returned to CDC with deep admiration for the achievements being made to improve the health and survival of African children. After hearing the reports of the last 2 days I too am filled with admiration of your achievements in health. It is clear that these achievements have come about through increased health knowledge of African mothers and fathers, the active involvement of communities, the dedication of African health professionals like yourselves, and the leadership of technical assistance partners including WHO, UNICEF, and A.I.D.

CDC has a vision statement: "A Healthy People in a Healthy World." Many people, hearing this vision statement for the first time think that it is awfully ambitious and far too broad for any single agency. But

actually it is not. The statement simply is a recognition of reality. Personal health is very much a product of the health of the home, the community, and indeed the world in which we live. Poverty, inadequate education, lack of access to care, environmental pollution, and destruction of natural resources all in some way ultimately affect the health of people.

Our vision statement also recognizes that as long as such diseases as polio and measles exist anywhere in the world, all nations of the world everywhere have to continue to spend precious health resources to protect their children. We have no options; our collective vision must be: "A healthy people in a healthy world."

CDC's collaboration with African Ministries of Health dates from 1966, when Senegal was one of 19 countries participating in the A.I.D. Smallpox Eradication Measles Control Program. From that very positive experience came the strategies that led to a 98 % reduction in measles incidence in the United States. Methods of quality assessment developed in Nigeria and refined in Côte d'Ivoire and the Central African

TABLE 1

PREVENTION PRIORITIES GOALS FOR CHILDREN AND DEVELOPMENT IN THE 1990'S		
SECTOR	ISSUE	TARGET
Education	Primary Education Literacy	80% Decrease by Half
Environment	Safe Water Sanitary Excreta Disposal Dracunculiasis	Universal Access Universal Access Elimination by 2000
Maternal Health	Family Planning Prenatal Care	Universal Access to Information and Services Attended Delivery
Nutrition	Low Birth Weight Breast feeding Malnutrition Micronutrient Malnutrition (A, I, Fe)	<10% below 2500 grams 100% Exclusive for 4 Months Reduce % by Half Virtual Elimination of Deficiencies
Immunization	Coverage Measles Morbidity Measles Mortality Neonatal Tetanus Poliomyelitis	90% in Under 1-year by 2000 90% by 1995 95% by 1990 Elimination by 1995 Eradication by 2000

Republic, are currently being used in tuberculosis clinics in New York City. I cite these two examples to emphasize the reality of our vision statement and the mutual benefit that results from working together as national public health agencies.

In 1990, representatives of 169 countries including 71 heads of state met at the United Nations in New York at the World Summit for Children and established 33 Goals for Children and Development in the 1990's. The document calls for 17 specific prevention initiatives in 5 different sectors.

Attainment of the target reductions in mortality, undernutrition, and morbidity will require an increased commitment and allocation of resources to prevention. You may ask, where are the resources coming from?

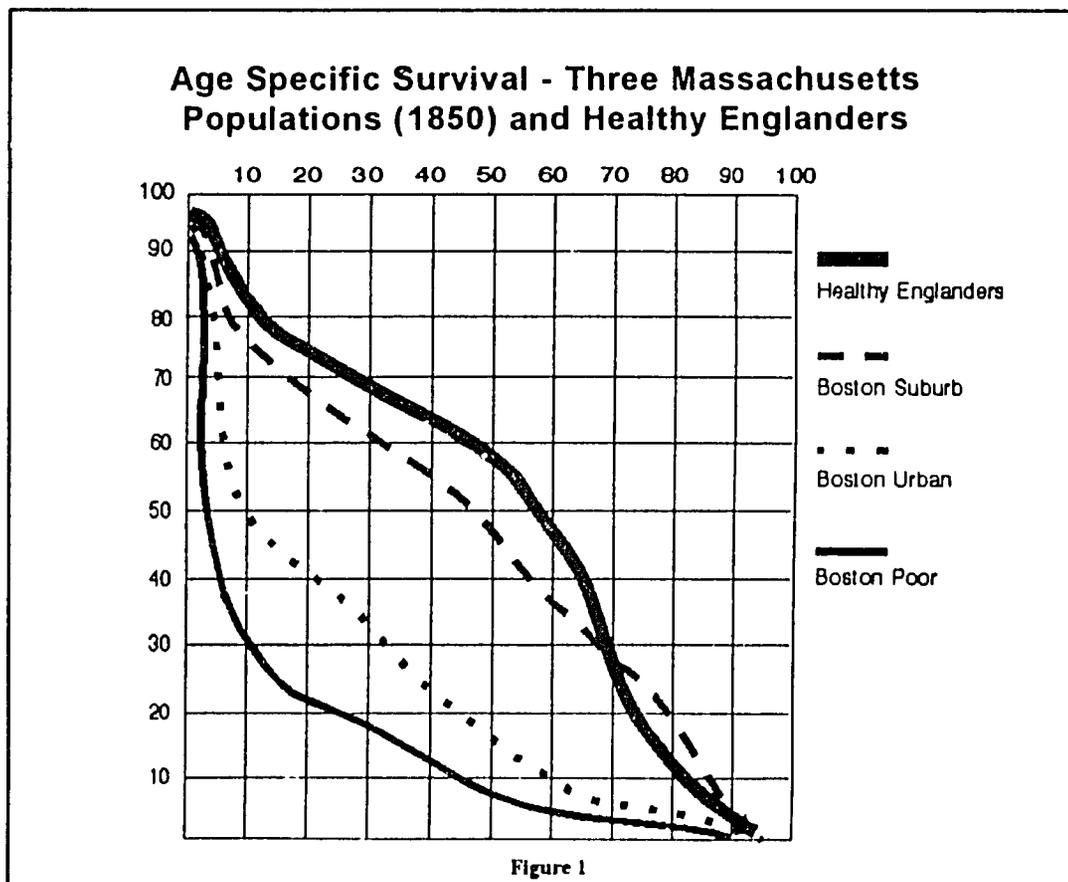
This issue was addressed clearly by John Evans, formerly of the World Bank, in the 1981 Shattuck Lecture entitled "Health Care in the Developing World: Problems of Scarcity of Choice." In Evans'

introduction, he cites the work of Lemuel Shattuck, a pioneer of public health in the state of Massachusetts who used statistics to emphasize the importance of and the opportunities for prevention. In 1850, Shattuck compared the mortality of four populations: the healthy in England; the residents of a Boston suburb; the residents of Boston; and the urban poor (Figure 1).

The median ages of death varied with socioeconomic status: 7 years for the urban poor, 10 years for the other urban residents of Boston, 47 years for the residents of the Boston suburb, and 55 years for residents of England. Shattuck's conclusions about the link between socioeconomic status and health are as appropriate in 1993 as when they were written in 1850.

In 1850, he wrote;

"We believe the conditions of perfect health, either public or personal are seldom or never attained-- though attainable; that the average length of human life may be very much extended, and its physical power greatly



augmented; that in every year, within this commonwealth, thousands of lives are lost, which might have been saved; that tens of thousands of cases of sickness occur, which might have been prevented; that a vast amount of unnecessarily impaired health, and physical disability exists, among those not actually confined by sickness; that these preventable evils require an enormous expenditure and loss of money, and impose upon the people unnumbered and immeasurable calamities, pecuniary, social, physical, mental, and moral, which might be avoided; that means exist, within our reach, for their mitigation or removal; and that measures for prevention will effect infinitely more, than the remedies for the cure of disease."

Evans' presentation in 1981 reiterates these same themes:

"Developing countries face the challenge of coping with a heavy burden of illness that differs markedly in subgroups of the population at different stages of development. The greatest improvement in life expectancy from health investment can be expected in the rural and peri-urban poor through a program that provides maternal and child health services, including control of major infectious and parasitic diseases of children under five. Two problems remain: the first is the political will to allocate necessary resources for the program, and second is the management capability to organize and operate a system of services for rural and peri-urban populations that would use multi-purpose community health workers."

Evans summarizes Shattuck's strategy as follows: "Assess health needs and plan programs in response to

sound epidemiologic evidence." What a wonderful challenge for all of us working in public health, for those of us promoting prevention in the United States and for you, the health decision makers of Africa.

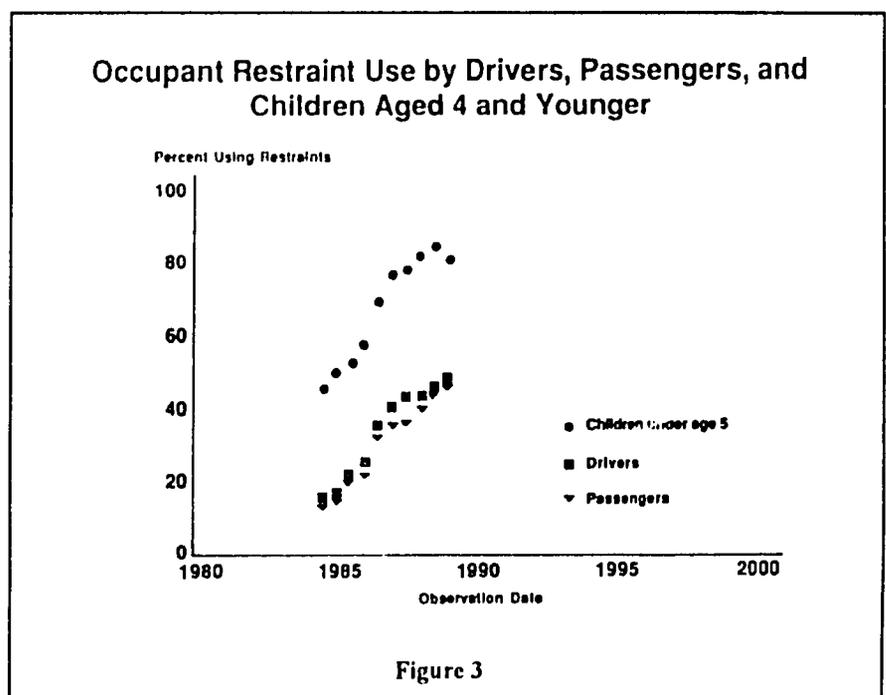
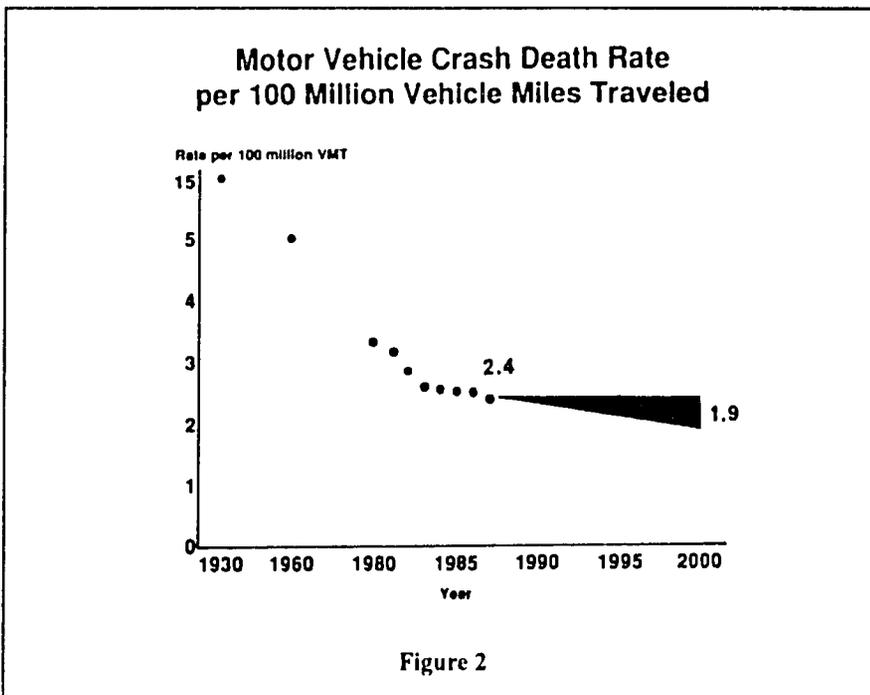
I challenge you to place prevention in its appropriate place at the top of the health agenda. Implementation of effective prevention involves five key issues: Assessment, Policy Formulation, Advocacy, Quality Assurance, and Surveillance.

I will illustrate these issues with an example I have long found intriguing: the problem of motor vehicle deaths in the U.S. First, assessment. In 1960, traffic deaths in the United States were identified as a major health problem. There were 60,000 deaths that year, or 5.1 deaths per 100 million passenger miles. Epidemiologic studies documented a number of contributing factors to these deaths, including highway hazards, unsafe automobiles, absence of seat belts, excess speed, and use of alcohol.

Second, Policy Formulation. Over the last 30 years, scientific data were used to formulate policies and establish regulations on highway design, vehicle construction, stricter laws for driving under the influence of alcohol, and laws on seat belt availability, seat belt use, and more recently, car seat use for children under four. Similar to the targets established at the World Summit for Children, the United States has established targets for the Year 2000 in a document entitled Healthy People 2000, produced in 1991. Related to motor vehicle injuries, our Healthy People 2000 targets include increasing the number of states with laws requiring seat belt use from 33 in 1989 to 51 in Year 2000 (a process indicator), expanding the use of occupant protection systems from 42% in 1988 to 85% in Year 2000 (a measure of coverage), and reducing deaths per 100 million passenger miles from 2.4 in 1987 to 1.9 in Year 2000 (a measure of impact) (Figure 2).

Third, Advocacy. Policies in themselves are not enough. The public needs to be informed, to understand, to be convinced, and to adopt healthy behavior. This requires advocacy--the sharing of information and motivation for action. We as public health professionals need to be good salespersons and to advocate the essentials of life like seatbelt use and designated non-drinking drivers with the same persistence as the salespersons of death, the promoters of alcohol and cigarettes, use to advocate their products.

Fourth, Quality Assurance. Success depends on not what we do, but how well we do it. Within the context of motor vehicle accidents, quality issues include highway design, vehicle manufacture, and the effectiveness of restraint systems such as seat belts, air bags, and car seats (Figure 3).



Fifth, Surveillance. Surveillance is the foundation of public health. It measures our effectiveness in improving public health. CDC's program management guide reminds us that we need to resist asking the question "What are we doing that we can measure?" and replace it with the question "What do we need to measure in order to know what we are doing?" There is a considerable difference between these two questions.

As a result of our prevention efforts the use of restraints has gone up (Figure 3). The rate of deaths per 100 million vehicle miles has declined (Figure 2). In fact our

was found to be as high as 18 neonatal tetanus deaths per 1000 live births. Using the median survey figures for the surveys of 7 neonatal tetanus deaths per 1000 live births, and the estimated number of births for sub-Saharan Africa of 25 million per year, then 175,000 neonatal tetanus deaths occurred annually at the start of the EPI program. Equally important are the epidemiologic studies that identified mothers at risk of bearing a child with neonatal tetanus. One of the best of these studies comes from Senegal. In their multi-variate analysis, Leroy and Garenne identified four factors as protective for neonatal tetanus (Table 2).

Table 2

Protective Factors for Neonatal Tetanus - Niakhar Senegal Multi-variate Analysis Leroy and Garenne (1991) Int J Epid 20:521-525		
Factor	Odds Ratio	p Value
Hands delivering baby washed with soap	5.22	0.0001
Cord dressed by Traditional Birth Attendant	4.71	0.0124
Mother >17 years of age	7.03	0.0277
Mother received prenatal care	4.15	0.0231

last full year of data showed 20,000 fewer deaths than in 1960, despite major increases in the number of cars and the miles driven.

Do these same principles (Assessment, Policy Development, Advocacy, Quality Assurance, and Surveillance) apply to Africa? Let's consider two examples, neonatal tetanus and HIV infection. For many years neonatal tetanus was the silent killer. Deaths occurred primarily among rural women delivering at home. In some societies children were not named until after the period of tetanus risk was over - 2 weeks. Consequently, neonatal tetanus was not recognized as a major health problem because of the number of unreported cases. Using the 30-cluster survey technique originally developed in Togo as part of the A.I.D. Smallpox Measles Program, retrospective surveys for neonatal tetanus were carried out in 23 African countries. Neonatal tetanus mortality

The odds ratios represent the likelihood of deaths when the action is not taken compared to when it is taken.

Reviewing this information, we see that assessment has provided the basic data needed for program development.

With guidance from the WHO EPI Global Advisory Group, dual policies of immunization of women with tetanus toxoid and safe delivery were developed. Although countries differed in their choice of immunization strategies, - that is, pregnant women versus women of childbearing age, - most countries have adopted or adapted global policy to meet local needs.

Each one of you will have to assess your own and your country's success in advocacy for neonatal tetanus prevention. There are three basic questions. First, are decision makers aware of the magnitude of the problem

and the ease by which this major cause of infant mortality can be reduced? Second, do health workers recognize the problem and the opportunities for prevention? And finally, how well have we communicated the reasons and the opportunities for prenatal care and safe deliveries to mothers and fathers?

In relation to quality, the strategies to assess and improve quality developed within CCCD country programs, are exemplary and deserve replication in all countries, including the US. For neonatal tetanus prevention, quality encompasses both our ability to identify and immunize at risk mothers and also to improve the safety of delivery practices.

Monitoring the incidence of neonatal tetanus, a disease that occurs primarily at home, is not an easy task. As demonstrated by the excellent study by Hlady and colleagues in Bangladesh, a high coverage rate does not ensure high protection. In that study, survey data identified low tetanus toxoid efficacy for a history of two doses of tetanus toxoid; subsequent laboratory studies documented substandard vaccine potency as the reason. The Bangladesh lesson is extremely important. EPI coverage is not adequate to measure the effectiveness of an immunization program; surveillance is also required. Fortunately, in most areas surveillance is documenting decreasing neonatal tetanus mortality. Sentinel data from Zimbabwe and Mozambique show that the neonatal tetanus strategy is effective in reducing disease incidence. Using WHO data on tetanus toxoid coverage in women delivering babies as well as case-control studies of efficacy, an estimated 45% of the neonatal tetanus deaths in Africa, that is, 80,000, were prevented in 1991 alone. But on the other hand, 95,000 neonatal tetanus deaths were not prevented. How well do these same principles of assessment, policy development, advocacy, quality assurance, and surveillance apply to HIV infection and AIDS? HIV infection is a major challenge to the future health of all of our countries. It is also another example of the validity of our vision statement; HIV has affected all of the world. Currently, an estimated 8 million Africans are estimated to be infected with HIV.

First, let us look at assessment. Many of you have established sentinel serologic surveillance to assess the

magnitude of the HIV problem. As recommended by WHO, most of you are monitoring HIV prevalence in sentinel groups of varying risks: pregnant women, blood donors, TB patients, STD patients, and commercial sex workers

There are major variations in the maximum rates of seropositivity, depending on the location and the population: 52% for commercial sex workers, 22% for STD patients, 14% for TB patients, and 6% for antenatal clinic attenders. Recognizing these variations and the current and projected impact of AIDS on the health and economies of Africa, what policies make sense? First, such policies need to meet five criteria. They must be:

- Scientifically correct,
- Technically feasible,
- Culturally acceptable,
- Measurable, and
- Affordable.

Four strategies are currently being advocated: reduction in the number of partners, use of condoms, diagnosis and treatment of STDs, and screening of the blood supply. Policies are not static; they will need to evolve with time. We will learn from both our successes and our failures. In the long run advocacy will determine Africa's ability to limit the health burden of HIV. Advocacy needs to be directed at all levels: the Heads of State, cabinet members (especially those involved with economic development), Ministries of Education, Ministries of Health, local government, those involved with women's affairs, the military, the commercial sector, and, most importantly, the public.

As we become increasingly involved in program implementation, quality assurance and surveillance will be needed to ensure effective HIV prevention.

Central to all prevention programs is our recognition of the partnerships that will be required to ensure effective implementation. Prevention is dependent on the empowerment of the people to understand the issues, to understand choices, and to adopt health-enhancing behavior.

As Julius Nyerere of Tanzania said, "People cannot be developed; they can only develop themselves."

IMMUNIZATION - Part I

CO-CHAIRS:

Malika Nkeube, Ministry of Health, Lesotho;
Robert Kim-Farley, WHO, Geneva

SPEAKERS:

1) Okwo Bele (WHO/AFRO, Brazzaville); 2) Grace Kagondi (REACH, Kenya); 3) Mosunmola Adewusi (Lagos State Ministry of Health, Nigeria); 4) Kwame Adogboba (Lagos State Ministry of Health, Nigeria) (presenting for Dr. Paul Arthur); 5) Grade O. Imoh, Federal Ministry of Health, Nigeria; 6) Nouhoum Koita (Plan International, Mali).

SUMMARY OF THE SESSION'S MAJOR ISSUES

This session focused on strategies that managers can use to assess and improve the quality of vaccination services at the health center level as well as at the programme implementation level. The first presentation, by the EPI Regional Advisor, AFRO provided an overview of the advances in immunization coverage and disease reduction in Africa since the beginning of the EPI in 1979, and proposed priorities and challenges for the future of the region. The subsequent presentations in the session addressed the following issues:

- The use of qualitative research in Kenya as an adjunct to quantitative methods to assess programme needs at the local level and to encourage district managers to develop effective strategies;
- The impact of missed immunization opportunities, particularly among women and children brought for sick visits, on the quality of immunization services in Nigeria, emphasizing the need for health workers to screen and vaccinate at each health contact;
- District level evaluations of immunization programmes in Ghana, which illustrated inefficiencies in implementation of national EPI policy at the district and subdistrict levels;

- The importance of political commitment to the successful implementation of the immunization programme in Nigeria, and the usefulness of evaluations at the federal, state, and local levels; and
- The role of focus group discussions in rural Mali in elucidating the reasons for immunization dropout, and the need for judicious planning in remote areas with limited resources.

SUMMARY OF LESSONS LEARNED

Since the first EPI training began in Africa in 1979, access to quality health services has improved, resulting in an increase in immunization coverage from less than 5% to almost 60% in 1990.

As the EPI develops, priorities are broadening to include surveillance of disease incidence in addition to immunization coverage. Increased emphasis on surveillance will help to direct programme activities and resources in the future, and will assist programme managers in developing strategies to control measles, eliminate neonatal tetanus, and eradicate poliomyelitis.

Availability of immunization services alone will not ensure high coverage, as many children continue to drop out before completing the immunization series. Findings from qualitative district-level programme evaluations show that reasons for high drop out rates include: the widespread belief shared by health workers and parents that mildly ill children should not be vaccinated, poor health worker attitudes and behaviors, health worker concerns about vaccine wastage, inadequate logistical support and, particularly in urban areas, competing economic priorities.

Knowledge, attitudes, and practices (KAP) surveys and other qualitative methods provide useful data on popular beliefs about immunization which assist in developing effective health messages.

Although immunization campaigns can be effective in increasing coverage in the short run, they must leave behind a sustainable, permanent system with a fixed center and outreach services, or immunization levels will decline.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Decentralization to district-level management is an important programmatic priority for the 1990s. Development of more effective and efficient immunization delivery systems will depend on improved district-level management and local collection, analysis, and use of data. Assurance of political commitment and of logistic support is important to ensure programme sustainability.

Enhancement of training and supervision can reduce missed immunization opportunities by ensuring that needed vaccinations are given simultaneously and that false contraindications are not invoked as a reason for non-vaccination. Health workers' concerns about

vaccine wastage need to be addressed so that children and mothers will be screened and vaccinated at all health care contacts.

Urban areas provide a special challenge for the EPI due to the high rates of population growth, their potential as a reservoir and source of infection, the evolution of new underserved areas, and the potential for significant involvement of private providers.

As EPI moves forward into the 1990's, Program management needs to be decentralized, with strengthening of planning, training, implementation, monitoring, and evaluation of programme quality and sustainability at the district level.

Policies developed and adopted at federal and state levels must be effectively adapted to local opportunities and constraints.

Reasons for high dropout rate and missed opportunities need to be assessed locally, and local approaches to solving the problems should be facilitated.

IMMUNIZATION - Part II

CO-CHAIRS:

Jerry Gibson A.I.D., Washington;
Okwo Bele, WHO/AFRO, Brazzaville

SPEAKERS:

1) Justin Ndoyo (Ministry of Health, Central African Republic); 2) Arsene Ferrus (Child Health Institute, Haiti); 3) Okey Nwanyanwu (USAID/CDC, Malawi); 4) Phillipe Malfait (Epicentre, France); 5) Okit'osdu Othepa (Ministry of Health, Zaire); 6) Tawanda Marufu (Ministry of Health, Zimbabwe).

SUMMARY OF THE SESSION'S MAJOR ISSUES

This session described multiple strategies that may be required to measure progress towards immunization coverage and disease reduction targets and to evaluate immunization programs fully:

- Determine the increases in coverage among children that would result if there were no missed opportunities for immunization at immunization sessions or at other health facility visits as part of immunization coverage surveys;
- Correlating tetanus antitoxin seroprevalence with different methods of measuring tetanus toxoid coverage among women who have recently given birth;
- Surveys and routine surveillance to document the impact of tetanus toxoid immunization and traditional birth attendants;
- Outbreak investigations on vaccine efficacy, the epidemiology of EPI target diseases, and the appropriateness of existing immunization policies with respect to the immunization schedule and the vaccine used;

- Evaluations of the effectiveness of immunization policies and strategies in urban areas taking into account the possible differences in target disease epidemiology between urban and rural populations; and
- Evaluations of the quality of disease surveillance systems to ensure that accurate assessments of target disease epidemiology are available and to ensure that progress towards disease control, elimination, and eradication objectives can be measured.

SUMMARY OF LESSONS LEARNED

Policies recommending that immunizations be given at all contacts with the health care system may not be fully implemented, and major gains in coverage may be possible if there were full implementation.

Current methods to estimate tetanus toxoid coverage may not accurately estimate levels of protection against neonatal tetanus.

Urban areas with relatively high measles coverage and vaccine efficacy can still experience measles outbreaks. Investigations of measles outbreaks provide EPI managers with the data needed to determine vaccine efficacy and disease epidemiology and to plan disease control strategies.

EPI target disease epidemiology may be different in large urban areas than in rural areas. Disease control in urban areas may require different immunization policies and strategies.

Routine disease surveillance systems may not provide data that are sensitive, complete, and timely enough to provide accurate estimates of disease incidence required to achieve disease control objectives.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Determine the extent to which increases in vaccination coverage potentially achievable by eliminating all missed opportunities can be achieved in practice, and the effect on vaccine wastage rates.

Conduct additional tetanus antitoxin seroprevalence surveys to assess the level of protection against neonatal tetanus achieved by immunization and the correlation between this level and measures of tetanus toxoid coverage. These surveys could also be used to identify high-risk populations.

Further develop methods for recognizing measles outbreaks, for investigating these outbreaks, and for using information collected from investigations to determine disease epidemiology and develop effective immunization policies and strategies.

Evaluate immunization programs in large urban areas taking into account the distinct problems, resources, and target disease epidemiology in these areas.

Evaluate routine disease surveillance systems and recommend changes to improve their performance.

EPIDEMIOLOGY AT WORK

CO-CHAIRS:

A.O.O. Sorungbe, Primary Health Care Agency, Nigeria;
Bradley Hersh, CCCD, Burundi

SPEAKERS:

1) Nene Echitey (Afagnan Hospital, Togo); 2) Oyewale Tomori (University of Ibadan, Nigeria); 3) Stanislas Ntahobari (Ministry of Health, Burundi); 4) Pierre Ngoumou (Ministry of Public Health, Cameroon); 5) Adama Kone (PRITECH-Sahel, Senegal) (presenting for Vincent Joret); 6) Andrew Agle (Global 2000, USA)

SUMMARY OF THE SESSION'S MAJOR ISSUES

The session provided data that show the value of surveillance for various diseases and adverse health conditions in a diversity of settings. Examples included surveillance for anemia and malaria in Togo, yellow fever in Nigeria, cholera in Burundi, meningitis in Cameroon, acute respiratory infections in Togo, and dracunculiasis worldwide. The session demonstrated how epidemiologic principles are essential to sound public health practice. Epidemiology will be even more critical as programs focus on reaching measurable outcomes: global eradication of dracunculiasis, and control of yellow fever, meningitis, and cholera.

The paper "Malaria and Anemia in Children Age 0-12 Years in Afagnan" examined the role of malaria in the development of anemia and the correlation between the two diseases. The study, which had a hospital and community component, found malaria in 24.7% of hospitalized patients and 51.3% of community children. Increased parasitemia increased the degree of anemia. The study concluded that improved malaria treatment may reduce the severity of anemia.

The paper "Yellow Fever in Nigeria, 1986-1991: Considerations on Epidemic Preparedness and Control" discussed the problems associated with Nigeria's attempt to control yellow fever. Major problems include slow responses to reported epidemics,

limited laboratory services, and incomplete follow-through after epidemics are identified. A total of 18,791 cases and 4,294 deaths were reported between 1986 and 1991. In 1991, 54 % of cases were in children. Numerous actions taken by the Nigerian government include:

- New Yellow Fever policy,
- Formation of implementation task force on Yellow Fever,
- New Nigerian government funding for Yellow Fever control
- Improved laboratory services,
- Improved surveillance,
- Increased feedback to health workers, and
- More operational research into solutions for Yellow Fever-specific control problems.

SUMMARY OF LESSONS LEARNED

Epidemiology and surveillance have broad practical applications for public health programs in Africa. The Guinea-worm (dracunculiasis) Eradication Program illustrates the critical role of surveillance.

Building capacity of African nations in epidemiology and surveillance will allow response to both epidemic and program needs with sound epidemiologic studies.

Scarce resources can be more efficiently used when epidemiologic and surveillance principles are applied to target prevention and control activities.

Effective programmatic decisions can be based on the epidemiology of malaria, anemia, and acute respiratory infections.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Continued strengthening of epidemiologic capacity in Africa in the 1990's will help to solve a broad array of problems.

Epidemiology in Africa must be increasingly oriented not only toward one problem situations but toward a potential array of problems. If guinea-worm, cholera, yellow fever, or meningitis are detected, the capacity of

conduct surveillance and epidemiologic studies must be in place so that practical control measures can be implemented.

Increasing use of facility-based, routinely collected surveillance data will make possible more accurate targeting of resources for disease control.

MALARIA INITIATIVE: AN EXAMPLE OF POLICY FORMULATION AND PLANNING

CO-CHAIRS:

El-Hadi Benzerroug, WHO/AFRO, Brazzaville;
Kathleen Parker CDC, Atlanta

SPEAKERS:

1) Sidi Mohamed Lemine (Ministry of Health, Mauritania);
2) Kristin N. Saarlans (CDC, Atlanta); 3) E. Dieudionne
Yazipo (Ministry of Health, Central African Republic);
4) Joseph Niangue (Ministry of Health, Côte d'Ivoire);
5) Lardja Sanwogou (WHO/AFRO, Brazzaville); 6) Kalenga
M. Paluku (Ministry of Health, Zaire).

SUMMARY OF THE SESSION'S MAJOR ISSUES

This session described the experience of the Malaria Initiative, a collaborative effort since 1991 among 21 francophone African countries, the World Health Organization, and the Centers for Disease Control and Prevention. This initiative aims at improving malaria control in Africa by developing the skills of national program managers in policy formulation, program planning, implementation, and evaluation. The six presentations illustrated the different stages of this approach. The first two presentations described how program managers revised and developed their national policies for malaria control, using epidemiologic and behavioral data and national experiences shared between the managers during a workshop in Bobo-Dioulasso in 1991; and how the managers improved in a demonstrable manner their skills at program planning during a workshop in Abidjan in 1992, using a curriculum prepared by a multidisciplinary team. The next three presentations illustrated how problems of implementation had been addressed in two countries and in a regional context: management of drug supplies in the Central African Republic; issues of supervision in Côte d'Ivoire; and the testing in Brazzaville, by a multidisciplinary group, of an approach aiming at improving communications between health workers and mothers during case management. The last presentation focused on ways in which managers strengthened their capacities in program evaluation.

SUMMARY OF LESSONS LEARNED

The approach adopted by the Malaria Initiative offers several potentially positive characteristics of a program aimed to control an urgent problem:

- Giving priority to strengthening the skills of program managers;
- Imphasizing the programmatic aspects of malaria control;
- Using a sequential approach that proceeds from policy to program plan to implementation to evaluation;
- Using data and national experiences in decision-making;
- A multidisciplinary, inter-country approach with the participation of international agencies; and
- A central role for evaluation, seen as a dynamic process involving and informing managers at all levels of the program.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Based on the results achieved to date, the approach proposed by the Malaria Initiative deserves continued support. The results obtained in participating countries should be followed to decide whether this approach should be expanded to other African countries.

The approach is not necessarily limited to malaria. It can be adapted to other health programs and may prove particularly relevant to the recently opened discussions on an integrated approach to the sick child.

A SUMMARY OF FAMILY PLANNING IN SUB-SAHARAN AFRICA

Latifou Salami, Consultant,
INTRAH* Regional Office for Francophone Africa,
Lome, Togo

Introduction

An increasingly substantial number of studies conducted in the developing countries show that maternal age, birth order, and spacing between births influence children's health and survival. Demographic studies and health surveys suggest that infant and child mortality can be reduced by:

- Reducing the number of births occurring less than 2 years after a previous birth;
- Reducing the number of children born to very young mothers;
- Reducing the number of children born to women in poor health; and
- Reducing the high number of births per woman.

It is currently estimated that if all women who say they do not wish to become pregnant used an effective contraceptive method, maternal and infant mortality rates would be reduced by 25% to 40%. In sub-Saharan Africa, however, where the highest infant, child, and maternal mortality rates in the world are documented, there is a weak prevalence of contraception, especially in the French-speaking countries.

Nevertheless, several factors seem to indicate the possibility of wider acceptance of modern contraceptive methods. First, the desire to space births already has deep roots in most of the sub-Saharan countries. Second, the traditional method used to space births, that is, a nearly general taboo against sexual relations during a period ranging from 3 months to 3 years after childbirth, depending on the society, tends not to be very rigorously observed.

Consequently, couples might be seeking other means of ensuring suitable spacing between births. These methods are burdened, however, by numerous sociocultural as well as institutional constraints.

Constraints

In the early 1980's, while programs to prevent and control childhood diseases benefited from a favorable environment characterized by recognition of the breadth of children's health problems and significant commitment to address them at all levels, family planning programs faced a more difficult situation characterized by conflict. Unlike other primary health care programs, family planning has been perceived as synonymous with limiting births, leading to resistance at all levels. Thanks to the coordinated actions of international organizations, and private associations for the promotion of family planning supported by the International Planned Parenthood Federation (IPPF) and multilateral and bilateral organizations, a consensus was gradually defined around a concept better accepted on the cultural level. The concept emphasized the desirability of children and birth spacing. The consensus was reinforced by different international conferences, which then emphasized the concept of Safe Motherhood.

Some constraints to contraception involve new technology. The apparent complexity of contraceptive technology has led to highly restrictive standards, which result in overmedicalization of contraceptive provision, numerous obstacles labeled by Shelton et al. as medical obstacles, and reduced availability of modern contraceptive methods. In the long run, these constraints have caused family planning to be pushed off to the side compared with other child-survival activities.

In this context INTRAH began its training projects for personnel working in the health sector. In its effort to make quality family planning services accessible to the population, the INTRAH Program of the School of Medicine of the University of North Carolina

*INTRAH - Program for International Training in Health

emphasized through its regional African office assistance to countries defining and developing policies and standards for family planning services.

The commitment of a country to defining a policy and standards of family planning services offers opportunities to reactivate awareness of the extent of problems related to high fertility rates and high-risk pregnancies; to set the basis for improving the quality of family planning services; and simultaneously to facilitate access to family planning through the development of a better interface with users. In each country a framework for the promotion of family planning is considered through the preparation of a reference document for developing family planning services; and through the involvement and explicit commitment of administrative authorities.

The policy and standards of services document provides clear answers to the fundamental questions inherent in providing preventive activities in general, and family planning in particular. Currently in all of our countries, family planning is encouraged first as a means of improving the health of women and children. It is also recognized as a basic right of the couple and of the individual. The document requires recording all components of family planning currently used, and the proposed contraceptive approaches must be considered. The document must also define the target population in general and identify high-risk groups in particular. In addition, it identifies categories of beneficiaries and minimum levels of acceptable performance.

Since 1987, INTRAH, through its regional African office, assisted eight sub-Saharan African countries (Botswana, Burkina Faso, Cameroon, Cape Verde, Niger, Tanzania, Togo, Uganda) in the preparation and dissemination of national policies and standards for family planning services. To evaluate the level of constraints related to the provision of family planning services in a country, INTRAH considered 10 indicators of medical obstacles to access to family planning services:

- Is a wide choice of methods available?

- Is there a limited number of oral contraception (OC) cycles distributed at each visit?
- May OC be distributed on a nonprescription basis?
- Is access to injectable methods subject to restrictions of age and parity?
- Is spousal consent mandatory for reversible methods?
- Are family planning services accessible to adolescents?
- Are laboratory tests systematically required?
- Are pelvic examinations mandatory to detect hormonal contraception?
- Is breastfeeding recognized as a method for spacing births?
- Which personnel categories are authorized?

Many publications now justify eliminating numerous medical obstacles such as those listed above. In Togo in 1987, for example, nine obstacles were observed and documented during the first survey of training needs. Spousal authorization not only had to be provided; the clinic personnel even demanded to see the husband's identity card.

The dissemination of the document of policies and standards of family planning services allows:

- Promotion of a positive image of family planning;
- Sensitization and improvement of the knowledge of beneficiaries and nonbeneficiaries;
- Preparation or revision of the different protocols and operational forms in use;

- Improvement in the attitude of beneficiaries of the services;
- Development of more responsible use of contraceptive methods;
- Facilitation of decentralization and delegation of the provisions for contraceptive methods; and
- Reduction of medical obstacles.

Evaluation of the degree to which barriers were reduced in six countries reveals the following:

Botswana:	5/8	showed significant reduction;
Burkina Faso:	8/10	showed significant reduction;
Cameroon:	9/9	showed significant reduction;
Tanzania:	6/8	showed significant reduction;
Togo:	10/10	showed significant reduction;
Uganda:	5/6	showed significant reduction.

Development and dissemination of policies and standards of services constitute an important mechanism for reducing medical obstacles, while maintaining quality of services and facilitating access to services. The important changes observed at the institutional level and in the attitudes of health care personnel open new prospects for integration of maternal and child health activities and family planning. Activities related to maternal and child health seem to be the best ports of entry to increase the use of modern contraceptive methods. It is a matter of redefining, at the level of district health centers or first aid clinics, the minimum package of necessary activities, the main organizational managers, and case management tools so that family planning questions can be integrated. These changes also open new horizons within the framework of community health development. The 1990's are bound to witness an accelerated expansion of family planning services in sub-Saharan Africa, so that maternal and infant mortality will be noticeably reduced.

APPROPRIATE POLICIES AND PROGRAMME DEVELOPMENT FOR SAFE MOTHERHOOD AND FAMILY PLANNING

CO-CHAIRS:

David Awassum, Ministry of Health, Cameroon;
Lucille Imboua-Coulibaly Treichville University Teaching Hospital, Côte d'Ivoire

SPEAKERS:

1) Lola Payne (MotherCare, Nigeria); 2) Estelle Shaw, (Ministry of Health, Côte d'Ivoire); 3) Damien Mbonihankuye (Ministry of Health, Burundi); 4) Meba Kagoné (SEATS Project, Burkina Faso); 5) Aristide Apologan (Project Lomé, Togo).

SUMMARY OF THE SESSION'S MAJOR ISSUES

Data presented in this session focused on safe motherhood and family planning policy and program development. In the opening remarks, the director of family health services in Cameroon observed that the laws of 1920 are in effect in many francophone African nations, making it unlawful to provide safe motherhood or family planning services to clients who want and need them. He encouraged participants to be vigilant in the effort to change those policies. Five other presentations addressed specific country cases:

In Nigeria, MotherCare is pursuing a two-pronged effort for maternal health policy development: identification of policy issues, followed by strategy development and implementation. Strategies include successive meetings with individuals and key organizations responsible for aspects of policy development.

In Côte d'Ivoire, qualitative research at the onset of policy and program development has identified a need to broaden the target of family planning services to include men and other family members.

Three presentations reported results of integrating family planning with other health services: two trials integrated these services with immunization (Burundi and Togo), and one with maternal child health services (Burkina Faso). Early results from Burundi suggest that the rate of new acceptors of family planning

services increased, and immunization services have not decreased. In Togo, integration produced an increase in clients' knowledge and use of family planning services. In Burkina Faso, FP/MCH service integration increased coverage, diminished the work load for the health worker, and improved the organization of work.

SUMMARY OF LESSONS LEARNED

Policy development for safe motherhood and family planning is a long-term process that requires perseverance, credibility, wit, and patience. Policies should indicate that family planning is a right of couples and individuals and that safe motherhood programs are essential in reducing maternal morbidity and mortality. Adequate policy development based on a risk approach integrated into primary health care activities, is needed.

There is a need to examine legislation, policies, and ministerial texts in order to modify elements that obstruct access to safe motherhood services, especially family planning.

Effective programs need an integrated approach in quality service delivery using urban and rural sectors and involving public and private sectors.

Effective safe motherhood programs should give priority to prevention, community services, integrated service delivery, adapted technology, community mobilization, adequate information systems, and a community "alert" and transport system for at-risk cases.

The health worker is vital for improving use of pre- and perinatal services, as well as promoting birth spacing and sustained contraceptive use. Health workers should not allow customs and traditions to interfere with the provision of services.

Concern was expressed that men are being marginalized in family planning activities. Programs developed for men in Zimbabwe have met with success. Family planning services for men may be useful in increasing long-term, sustained contraceptive use.

The issue of cost should be addressed country-by-country since values differ. For example, in Cameroon, people did not want free services because they regarded free items as discards from Western countries. In Côte d'Ivoire, qualitative data suggest that Abidjan residents may oppose paying for services.

Greater access for women to education and health care is essential to reduce maternal and infant mortality.

Involvement of men in family planning and safe motherhood programs should be encouraged, with an emphasis on more male responsibility in parenting.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Family planning should be developed as an integrated service in MCH at all levels of the health system.

Qualitative research is most useful in assessing policy and program issues when conducted at the onset of the planning process. There must be a built-in mechanism for using the results in program implementation.

Policy reforms need to be reinforced in many countries. Contraceptives should be included on the essential drug list.

OPTIMAL INFANT FEEDING

CO-CHAIRS:

Kamissa Sano, Donka University Hospital, Guinea;
Sylva Etian USAID/CDC, Niger

SPEAKERS:

1) Ekoe Tetanye (Central Hopitalier et Universitaire de Santé, Cameroon); 2) Gelasius Mukasa, (Makerere University, Uganda); 3) Louise Serunjogi (Makerere University, Uganda); 4) Adenike Grange (Lagos University Teaching Hospital, Nigeria); 5) Kinday Samba (Gambia Food and Nutrition Association, the Gambia); 6) Jean-Paul Beau (ORSTOM, Senegal).

SUMMARY OF THE SESSION'S MAJOR ISSUES

Poor infant and young child feeding practices result in the major causes of infant and child mortality: malnutrition, acute and chronic diarrhea, and acute respiratory tract infections. The nutritional situation in Africa is a difficult one for diverse reasons, including use of artificial milk, poor weaning practices and timing, poor nutritional quality of weaning foods, mother's lack of education, closely spaced pregnancies, and cultural taboos, to name a few. Presentations demonstrated that early childhood growth (especially up to 5 years of age) is significantly influenced by breastfeeding practices and the timely introduction of quality weaning foods in adequate quantities. Mother's milk contains colostrum, which protects the child, as well as a sufficient amount and mixture of nutrients that makes mother's milk the optimal food source for children up to the age of 4 to 6 months.

Issues raised in this session include the necessity of exclusive breastfeeding up to the age of 4 to 6 months, methods to promote effective breastfeeding, and the importance of sufficient and quality weaning foods. Other topics concerned establishment of a national breastfeeding policy, exploring socio-cultural beliefs and attitudes that lead to unfavorable weaning practices (and attempting to properly introduce recommended changes), and define the significance of Kwashiorkor malnutrition in the area of infant mortality.

SUMMARY OF LESSONS LEARNED

Based on clinical research presented, there is no significant benefit for children of 0 to 6 months of age from supplementing breast milk with water, even for those living in hot and arid climates.

Qualitative research can reveal the socio-cultural beliefs and attitudes behind most commonly sited weaning "problems" identified through quantitative research. Efforts that take sociocultural factors into consideration may have a greater impact on nutritional status of infants and young children than previous efforts, which focused primarily on promoting foreign concepts using didactic education techniques.

The perceived need to promote exclusive breastfeeding up to the age of 4 to 6 months is increasing among African public health professionals. Education of most public health professionals in knowledge and skills required to promote successful breastfeeding remains a necessity.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Efforts to promote breastfeeding that have been largely health facility-based must expand to reach those women not currently served by a health facility.

Concerted and targeted efforts must occur at all levels and by all partners to protect, promote, and support breastfeeding.

National decision makers need to develop policies that promote exclusive breastfeeding up to the age of 4-6 months. Further, they need to support these policies with the resources necessary for health care workers and program managers to develop culturally appropriate methods to promote effective exclusive breastfeeding.

The benefits of exclusive breastfeeding should be continually weighed against potential negative effects of HIV infection.

HIV/STD/TB PREVENTION AND CONTROL

Part I

CO-CHAIRS:

Andrew Vernon, CDC, Atlanta;
Ibra Ndoye, Ministry of Health and Social Action, Senegal

SPEAKERS:

1) Ehounou Ekpini (Projet RETRO-CI, Côte d'Ivoire);
2) Etienne Karita (AIDS Reference Laboratory/National AIDS Control Program, Rwanda); 3) Cheikh Ibrahim Niang (Université Cheikh Anta Diop, Senegal); 4) Francois Dabis (University of Bordeaux, France); 5) Gaston Djomand (Projet RETRO-CI, Côte d'Ivoire).

SUMMARY OF THE SESSION'S MAJOR ISSUES

Maternal-infant (perinatal) HIV transmission:

Rate and biological predictors of perinatal HIV transmission.

Role of perinatal transmission via breast milk. Impact of maternal HIV infection on child survival.

How to effectively intervene with HIV/AIDS prevention in traditional societies:

Role, process, and effectiveness of using traditional channels for delivering HIV/AIDS prevention interventions- an example from Senegal.

Immunizing children of mothers with HIV infection

Safety, immunogenicity, and efficacy of WHO recommended childhood vaccines/schedule in children with HIV infection

Pediatric AIDS

Need for a pediatric AIDS case definition that is both sensitive and feasible.

Magnitude, age distribution, clinical correlates, and impact of pediatric HIV infection

SUMMARY OF LESSONS LEARNED

Perinatal HIV transmission:

Pregnancy outcome was studied among pregnant women infected with HIV in Abidjan, Côte d'Ivoire (1990-1991), and Kigali, Rwanda (1988). Child outcomes from these women were compared with child outcomes from seronegative pregnant women.

HIV seroprevalence in Abidjan was 12.0% (9.4% HIV-1, 1.6% HIV-2; 1.0% dual). The rate in Kigali was 30.3%, entirely due to HIV-1. Perinatal transmission rates were 28% for HIV-1 and 1% for HIV-2 in Abidjan, and approximately 25% in Kigali. The major risk factors for perinatal transmission included indicators of impaired maternal immune status, e.g., low T4/T8 ratio, low T4 cell count, and AIDS. Although HIV transmission via breastmilk has been documented, further study is needed to determine its overall role in HIV transmission and in child survival; currently, WHO still recommends that in countries where infant and child mortality due to infectious diseases is high, the advantages of breastfeeding, even by infected mothers, outweigh the disadvantages.

Child outcomes associated with maternal HIV infection included: low birthweight (<2500gm), associated with HIV-1 and/or HIV-2 maternal infection; and increased child mortality, associated with HIV-1 or dual infection, but not with HIV-2 infection alone.

One group that may merit special attention are uninfected children of infected mothers. These children may in fact face greater than normal risk of morbidity and/or mortality, based on biological conditions (as evidenced by greater BCG anergy in this group compared to children of seronegative mothers) or social/domestic conditions, e.g., increased exposure to TB from HIV+ parent(s) in the household.

Traditional channels for HIV/AIDS interventions

"Dimba" women are an identifiable group in a region of Senegal who are linked by virtue of being sterile, mothers of children who have died, mothers of twins, or adoptive mothers of orphans. They have an established role within their local society associated primarily with reproductive health issues within the local traditional health system. They were creatively and effectively used in traditional ceremonies to provide education and motivation related to AIDS prevention in their communities. This promising approach may be relevant in other areas throughout rural Africa.

Vaccinating children of HIV-infected mothers

Based on data from Kigali, Rwanda, HIV poses no contraindication to the routine WHO/EPI-recommended childhood vaccination schedule (except that BCG should not be given to infants with apparent HIV disease and should be given as close to birth as possible). All EPI vaccines appear to be safe, immunogenic, and effective. There is no public health reason to screen for HIV before vaccinating African infants at the appropriate ages.

Pediatric AIDS

In Abidjan, where HIV seroprevalence in pregnant women is approximately 12%, HIV plays an important role in pediatric disease. HIV seroprevalence in hospitalized children is high, particularly in those <5 years. Compared to diseases causing hospitalization in seronegative children, malnutrition and acute respiratory diseases are particularly common, and malaria is less common. Hospital mortality was more than twice as high for seropositive children compared to seronegatives.

The current WHO (Bangui) pediatric case definition, which does not include maternal HIV serology, has a sensitivity of only 20%; the newer "wasting syndrome" case definition has a sensitivity of 34%. Additional study is needed to determine a case definition that

identifies a higher proportion of clinical AIDS cases in young children. The impact of HIV/AIDS on child morbidity and child survival is likely to be considerable; it is probably greater than most public health officials currently realize.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Research is needed to determine when perinatal HIV infection occurs, including the relative importance of transmission via breastmilk.

Policy must be clear regarding recommendations for breastfeeding by mothers who are infected with HIV.

Research is needed to determine the magnitude and risk factors for increased morbidity and mortality among seronegative infants/children of seropositive mothers, with a view toward specifically targeting such children programmatically, if necessary.

Further intervention research and demonstration projects are warranted to test and implement use of traditional and socioculturally relevant groups as effective channels for AIDS prevention and control; social scientists should be included in the design, development, implementation, and evaluation of such research and in the final "nationalization" of activities in this domain.

The WHO/EPI immunization schedule can and should be promoted for all infants, including those of women with HIV infection. More attention is needed to assure that BCG vaccine is not administered to infants with immune impairment; this assurance can be achieved by monitoring the age at which BCG vaccine is given.

Further research is needed to identify a case definition for pediatric AIDS that has greater sensitivity and specificity, yet is feasible from a logistic and economic perspective.

HIV/STD/TB PREVENTION AND CONTROL

Part II

CO-CHAIRS:

Souleymane Barry, USAID REDSO, Côte d'Ivoire;
Mamadou Ball, WHO/AFRO, Brazzaville

SPEAKERS:

1) Emily Obwaka (University of Nairobi, Kenya); 2) Sandra Larsen (CDC, Atlanta); 3) Alain Ackah (Projet RETRO-CI, Côte d'Ivoire); 4) Peter Eriki (WHO/AFRO, Brazzaville); 5) Robert Moy (Ministry of Health, Zimbabwe); 6) Tim Dondero (CDC, Atlanta).

SUMMARY OF THE SESSION'S MAJOR ISSUES

Control of congenital syphilis

Magnitude of the syphilis problem: rising incidence

Feasibility of prenatal screening and treatment as a key control strategy - sociocultural, operational, and laboratory considerations

Cost and sustainability of prenatal screening and treatment

Partner notification and treatment: feasibility, approaches

Tuberculosis and HIV

Importance of TB in Africa

Importance of HIV in TB patients

Strategies and costs of TB control in Africa

AIDS and child survival

Implications and impact of high HIV rates in pregnant women, data from Zimbabwe, and theoretical modeling

SUMMARY OF LESSONS LEARNED

Control of congenital syphilis

The prevalence of syphilis is increasing in Nairobi. Prenatal syphilis screening and treatment are national policy in Kenya but are not routinely practiced. Nurses at selected prenatal clinics were trained to perform all aspects of on-site screening, diagnosis, and treatment of syphilis and to provide syphilis counseling and partner notification. With good supervision and adequate logistical support, screening rates during the first several months of a MotherCare and A.I.D. supported intervention study increased from 60% to 100%; treatment rates increased from 9% to 70-90%; partner treatment rates increased from 0 to approximately 65%; and a higher percentage of clients sought prenatal care before 20 weeks gestation. Overall, over 6700 women received appropriate management during this 8 month pilot period. Qualitative research was crucial in eliciting barriers and exploring solutions, particularly for developing strategies related to partner notification and IEC materials related to prevention and control of syphilis

Laboratory data are a critical element of "information for action" within the context of prenatal screening and treatment to control congenital syphilis. Careful attention to laboratory definitions of syphilis is needed in studies of this disease. Feasible, effective, and cost-effective technologies and delivery models are needed to undertake congenital syphilis control on the public health scale currently necessary within the context of HIV and STD control in Africa.

HIV and TB

TB is primarily an adult disease, and the relationship between TB and HIV has been well described for adults, but not in children. In a study of 5180 hospitalized TB

patients in Abidjan, there were 289 persons (6%) under 15 years old. HIV seropositivity among these children was 11.8%, with the highest rates of HIV in children under 5 and in those with "clinical" (i.e. lacking lab confirmation) diagnosis of tuberculous disease. Wasting, diarrhea, and oral candidiasis were more common in HIV-infected than uninfected pediatric TB patients. Better diagnostic techniques are needed for pediatric TB, given the generally low rates of sputum positivity in children. Further research is required to quantify the impact of the HIV/AIDS epidemic on pediatric TB in Africa.

TB has increased substantially over the past several years. The HIV pandemic is estimated to have caused a 20% increase on overall TB incidences in Africa. WHO estimates that in 1991, 171 million of Africa's 650 million population had TB infection; 1.4 million developed active TB; and 660,000 died. Treatment coverage was 24%, and only 36% of the patients covered were cured. Children are the "innocent victims" of TB in Africa: they are more often exposed to, and less often the cause of, TB transmission. Furthermore, TB and HIV-TB in adults will lead to more children with TB and more orphans.

The main strategy for TB control in Africa is case finding and treatment--it is appropriate, affordable and effective, but compliance is low and resources are limited. Recognition of the magnitude and impact of TB in Africa may lead to greater donor interest in supporting the control of this disease.

AIDS and child survival

A variety of data sources in Zimbabwe have documented increasing AIDS incidence since 1989; extremely high HIV seroprevalence rates are reported in urban Zimbabwean women. An increase from 32% to 42% between 1991 and 1992 occurred in one area. Increasing pediatric morbidity and mortality, partially due to HIV/AIDS have also been reported: 15% of AIDS cases nationally are in children <5 years, and 30% of pediatric hospital deaths in 1992 were caused by AIDS. Based on current maternal seroprevalence levels and an estimated 30% rate of perinatal transmission, urban infant mortality may double, from 50 to 100 per 1000 LB between 1989 and 1999; under-5 mortality may rise from 70 to nearly 200.

Approximately 7% of children in one area are currently orphaned. AIDS has already begun to manifest signs of real impact on child health and survival in Zimbabwe.

Theoretical modeling, based on disease progression estimates that may prove to be too conservative for Africa, suggest that for every 100 pregnant women with HIV infection, 15 to 20 of their children will die of AIDS by age 5. This would equate to an excess under-5 mortality due to AIDS of approximately 20 (per 1000 live births) in a "medium" HIV seroprevalence area in Africa where maternal HIV seropositivity is 8.8%, and approximately 65 to 80/1000 in a high incidence area (with 30% seropositivity). Given present technology, i.e., lack of vaccine or cure for mothers or children, one key target group for intervention may be uninfected children of infected mothers.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Technology research is needed to develop simple, low-cost blood collection and syphilis testing equipment and procedures that allow on-site screening and treatment of antenatal women.

Further intervention research is needed on antenatal syphilis screening and treatment in multiple countries to determine:

- Optimal models for delivering these services;
- Sociocultural and operational barriers and their solutions; and
- The costs, effectiveness, and cost-effectiveness of different models.

Support is needed for socio-behavioral and operational research to develop and strengthen partner notification for STDs, including partners of prenatal women with syphilis.

From a policy perspective, programs should take advantage of the current priority attached to child survival as a means to increase appropriate support for STD control in Africa.

Although further research is needed in many areas related to TB, pediatric TB, and HIV-related TB, attention should also be given now to operational research and support to increase access and coverage for TB case finding and treatment.

Workers in international health should appreciate the current and future impact of AIDS within the context of child survival. Support for HIV/AIDS control is critical for child survival, but not to the detriment of other key interventions. Attention to the clinical care of HIV-infected children is also needed.

COMMUNITY IMPLEMENTATION OF CHILD SURVIVAL PROGRAMS TO ACHIEVE ICAAC* GOALS

* International Conference on Assistance to African Children

Rudolph Knippenberg,
Regional Advisor for Primary Health Care,
UNICEF/WCARO, Abidjan, Côte d'Ivoire

This introductory speech addresses community implementation of child survival programs to achieve the ICAAC* goals for African children in the context of the Bamako Initiative. Several elements in this title probably require initial explanation.

First, let me provide some background about ICAAC, or the International Conference on Assistance to African Children, which took place here in Dakar in this same hotel at the end of last year under the auspices of the Organization of African Unity (OAU/UNICEF 1992). At that conference, the African countries set six milestones for 1995; these are intermediate objectives toward the end-of-the-decade summit goals for children. These intermediate objectives are:

- Coverage of 80% of children by their first birthday with BCG, polio3, and DPT3;
- Coverage of 90% of children with measles vaccination by their first birthday;
- Coverage of 90% of women of childbearing age with tetanus vaccinations (TT2 or more);
- Utilization of oral rehydration therapy by 80% of children with diarrhea;
- Partial elimination of iodine deficiency and vitamin A deficiencies; and
- Promotion of exclusive breastfeeding for 4 to 6 months, of sustained breastfeeding for 2 years, and of feeding with supplemental foods as of 4 to 6 months.

The most important reasons for selecting these intermediate objectives was the leaders' determination to prove the capacity of African governments and communities to achieve their self-determined goals and

their conviction that achieving them would turn the tide of world pessimism about Africa and the tendency of international donors to invest their resources elsewhere.

I would also like to review some of the key components of the Bamako Initiative for revitalization of African health systems. First, the Initiative involves improving service management to maximize effective coverage with essential health care, including the child survival activities discussed this week. Secondly, the Initiative intends to ensure availability and rational use of affordable essential drugs. Although this is the most common association with the Bamako Initiative, it is only one of its components. Third, the Initiative encourages community co-management and empowerment, not only of drugs or in financing, but also of services to ensure that they reach the population and maximize community-based health activities. Fourth, the Initiative focuses on community cost-sharing and increasing the accountability of health staff - both in human resources and in the technical services that they provide--to the African communities.

Although it has elicited sometimes heated discussions during the last couple of years, the Bamako Initiative has largely taken root in Africa. It has taken root because it originates in Africa; the principles behind it were developed here. Key elements have been implemented in several countries for years now, even before the actual launching of the Bamako Initiative in 1987. (WHO 1987). By now most countries of the region have adopted it as a core health care strategy, half have begun implementation, at least in initial sites. Several countries, like Benin, Guinea, and Nigeria, have large-scale implementation underway. Others, such as Mali, Cameroon, Zambia, are ready to expand to a national scale. Currently there are a total of 2,000 health centers functioning along Bamako Initiative principles and covering approximately 20 million people on the African continent (UNICEF 1992).

The key difference between the Bamako Initiative and the more classical health systems and programs is the emphasis on community implementation. Many more traditional health systems and programs missed that

community focus. Such a community focus has a series of consequences: activities are implemented at a community level and attempt to cover those communities as completely as possible; these activities respond to community demand, not only to epidemiologically determined needs; the communities share in the cost, or co-finance and co-manage series in a real partnership with governments and external support; health staff becomes more accountable to those communities and that communities take ownership; and there is a striving for community empowerment and stimulation of community development

The remainder of this presentation will address six key elements for effective implementation of child survival activities in Africa. These six elements are primarily derived from discussions of the last four days. They are:

- Cost-effective minimum care packages;
- Appropriate service delivery structures;
- Effective operational strategies;
- Efficient management systems;
- Edequate policies and support systems, especially management and logistical support;
- Sustainable financing. Practical examples of implementation in Africa in the context of the Bamako Initiative will illustrate the implications of these elements for communities.

During the previous sessions we have seen many good reasons for focusing on integrated cost-effective minimum care packages. Several presentations highlighted the interactions and synergism between infections and malnutrition and between diseases and disease programs. For example, malnutrition increases the risk of measles and diarrhea. Sexually transmitted diseases greatly increase the mortality risk of AIDS transmission; family planning strongly influences maternal health. Other reasons are that such minimum care packages facilitate responding to community demand, not only to objective epidemiological health needs, and thus increase service use. Integrated delivery of the components of such a package helps reduce missed opportunities. A final reason for integrated care

is the overlap between diseases like malaria, ARI, and diarrhea. The symptoms of these diseases are sometimes very difficult to separate. This means that in the management of the ill child, treatments need to be made available in an integrated way.

The three classical studies (Morley 1979, Spruyt 1967, Ayeni and Oduntan 1980) provide empirical evidence of the very important impact of integrated minimum care packages on infant and child mortality. While there are many examples from other continents, these three show the impact in Africa

On the other hand, the six studies from Africa on single purpose interventions revealed in a quick initial impact on mortality that was also quickly reversed (Kaseje 1989, Mamora 1989, Black 1984, JNSP 1988, Kasongo 1981, Greenwood 1987). For example, in the Mvumi project, the impact of measles vaccinations was wiped out by a malaria epidemic; in the Iringa nutrition program, malaria wiped out the positive effect on mortality. Some other studies show that even when there was an impact, this could not really be attributed to the intervention.

This shows possible elements of such a minimum care package in Africa. Preventive activities include immunizations, vitamin A supplementation, malaria and anemia prophylaxis in pregnancy, family planning and delivery care. Curative care comprises the package for management of the ill child presented this week by our colleague from WHO, control of STD, leprosy, and tuberculosis. Promotion of exclusive and sustained breastfeeding needs to be included along with promotion of iodized salt. This list needs to be expanded and complemented with activities responding to community demand such as "relief from suffering" (World Bank 1992).

Concerning the selection of an appropriate service delivery structure, during the last 20 to 30 years in Africa, three approaches to service delivery have been developed. One is the village health worker approach. This approach has the important advantage of quickly increasing access to services, but with large-scale implementation, insufficient supervision and support have often resulted, leading to a decrease in quality of services. The often numb response to the demand expressed by communities has triggered low motivation of communities to support these "volunteers," thereby

lowering motivation of workers and increasing dropout rates. In fact, this approach appears to have worked effectively only in structured and controlled settings, mainly in East Africa and in small-scale projects and programs in West Africa, where adequate support from the district level and from health centers was assured. When village health workers were an alternative to rather than a part of the district health systems, they have worked virtually nowhere (Knippenberg, Parker 1993).

The second approach includes individual disease or activity-oriented campaigns and mobile teams. Countries in which EPI has been delivered through campaigns and/or mobile strategies have revealed an interesting up-down pattern: coverage increase quickly, then drops, then increases again if a new campaign is conducted. Over a longer period there is a gradual decline in coverage, given the difficulty of sustaining those activities. On the other hand, in countries in which EPI has been implemented through functional operational health center networks, coverage is stable or even increases. In Benin, where EPI has been used to revitalize the health system through the application of the Bamako Initiative principles, coverage is steadily increasing. Guinea reveals the same pattern. (UNICEF 1987-1992)

We see that the experience with the "alternative approaches" just discussed confirms the conclusion from the 1940's and 1950's that the development of health centers with outreach in the context of an operational district with community participation is indispensable (WHO 1991, World Bank 1992). This is nothing new, not a magic bullet: it simply implies that we're returning to an approach that you here in Africa have been developing successfully for years, instead of continuing to search for magic alternatives or shortcuts. While you may ask what is new about that? As one of our senior UNICEF staff said in an earlier meeting, "Nothing, except that this time we'd better do it."

One frequently reiterated conclusion is that in order to have an impact operational strategies cannot address only one part of the health system; it is not enough to fulfill one type of condition. All in a series of key conditions need to be fulfilled. These include:

- Availability of essential resources through reliable supply of drugs and vaccines;

- Good access - both geographical and functional - of communities to the services offered, through revitalization/extension of health center networks and outreach for health prevention and promotion;
- Acceptance and utilization by those communities, implying motivation and mobilization;
- Continuity of care: one-shot deals will just not do;
- Quality of care, both technical and human; requiring standardization of diagnosis and treatments and positive supervision; and
- Compliance with treatments and preventive household health activities promoted through community-based problem-solving approaches (Assessment, Analysis, Action).

All these conditions need to be fulfilled at the same time. The system is like a chain; one missing link will undermine coverage and impact. At least half of these conditions are closely linked to communities. Utilization, continuity of use, and compliance are conditions that depend not on health staff or government organizations, but on the communities. The profound implication is that these systems need to be managed in a decentralized way and involve communities in order to have an impact (Knippenberg, Parker 1993).

Listed in Table 1 is a series of principles for local management systems, especially for monitoring and microplanning. This is not abstract theory; it is derived from what is happening in this region. These principles are implemented in many countries, and the methodologies have been field-tested extensively. Management by objective is important for achieving results. EPI has shown that clear focus on an activity can produce impressive results. On the other hand, managing by objective is not enough. At the same time there must be a problem-solving systems approach, which means a continuous cycle of identifying key problems, analyzing causes, selecting corrective actions, and microplanning the implementation of those actions on a local basis. Experiences in many countries with more classical monitoring systems show that even

if a problem is well defined, and the correct solution is selected, failure to microplan implementation of that solution involving the communities and local health staff means the problem will persist. Studies show that problems still existing in 1993 were identified in 1987. The fact that in EPI, for example, problems of lack of communication between providers and communities and lack of quality still persist illustrates that the management approach by itself is not enough. Finally, a participatory learning approach is important, as not everything can be done at once. It is much more effective to identify one priority problem among a series of problems; analyze its causes; select an action; microplan and implement that action; and follow up 6 months later to discover whether the solution has worked. If yes, identify the next problem and implement a solution. If no, a new solution is selected for the original problem. This sort of participatory learning approach needs to involve all parties—health staff, community representatives, and supervisors, as each holds part of

the key to the solution. These types of microplanning and monitoring systems have been applied in a series of countries. In Nigeria, Zaire, and Mali, microplanning has been carried out at district level on a large scale. In Benin and Guinea, 400 health centers are monitoring their coverage every 6 months during 2-day sessions following this kind of process (Knippenberg, Parker 1993; Knippenberg, Levy Bruhl 1990).

These are indicators used by peripheral systems in Benin to monitor progress in coverage. These indicators are similar to those used in Guinea. The left column shows the different determinants of coverage, including availability of resources; access; utilization; and adequate coverage, which reflects continuity; and effective coverage, which reflects quality. The indicators selected to reflect those determinants are shown in the columns on the right. These indicators have been selected and revised through trial and error with involvement of local health staff and community representatives (Knippenberg, Levy Bruhl 1990).

TABLE 1
INDICATORS USED IN MONITORING OF THE 2ND SEMESTER 1988 - BENIN

DETERMINANT INTERVENTIONS	CHILDHOOD VACCINATIONS	TETANUS TOXOID (Vaccinations in women of child-bearing age)	PRENATAL CARE	CURATIVE CARE
Target population	Children born between July and December 1987	Women having delivered between July and December 1988	Women having delivered between July and December 1988	Total population
Availability	% of time that there were no shortages of childhood vaccines	% of time that there were no shortages of TT vaccines	% of time that there were no shortages of iron/folic acid and of chloroquine	% of time that there were no shortages of any drug
Accessibility	% of target population living less than 5 km from a health centre or less than 2 km from outreach post	% of target population living less than 5 km from a health centre or less than 2 km from outreach post	% of target population living less than 5 km from a health centre	% of target population living less than 5 km from a health centre
Utilization	% of target population having received at least one vaccination	% of target population having received at least one TT	% of target population having received at least one prenatal visit	% of new patients registered (whether treated or not)
Adequate coverage	% of children completely vaccinated before their 1st birthday - observing intervals and minimum age	% of target population having received the second TT at least 2 weeks before delivery	% of target population having made at least 3 prenatal visits	% of new patients having paid the fee
Effective coverage	Adequate coverage x quality score (cold-chain and vaccination technique)	Adequate coverage x quality score (cold-chain and vaccination technique)	Adequate coverage x quality score for prenatal care	% of new patients treated according to flow charts

Using a coverage model originally developed by Tanahashi (1984) and adjusted in the context of the Pahou project in Benin (Knippenberg 1986), these coverage indicators can be visualized through "coverage curves." On the vertical axis are the coverage determinants; on the horizontal axis, the proportion of the target population "covered" by each of these determinants for different time periods. The proportion of the target population with access is constant, outreach from the beginning. Even though access was constant, illustrating that there was an adequate utilization, adequate and effective coverage (the proportion of children fully vaccinated with quality vaccine at their first birthday) were very low in the beginning. The graph shows how in the best one fourth of centers, these coverage determinants improved over time through a process of local monitoring, local microplanning, and local dialogue between providers and communities (Figure 1).

Figure 2 portrays the worst one fourth of centers. In the worst quarter, EPI coverage did not change at all, even though access

was similarly good from the beginning. This illustrates that the contrast between best and worst is not linked to supply issues, but rather to the management process local problem solving, motivation, link with communities.

Another example from Guinea for antenatal care shows within the same graph the evolution of both worst and best centers. On the left in the worst centers, coverage has not improved at all, linked to poor access from the beginning, about which apparently nothing was done. In addition to poor

access, a further drop-off occurred in utilization, adequate and effective coverage. On the other hand, in the best centers portrayed on the right, access was better from the start, but continuity of care was very poor in the beginning. Over time there was a strong increase in continuity of care.

The curve shows the improvement in coverage was not due to increased utilization, which remained exactly the same over time, indicating that women accepted antenatal care from the start. What appears to have been important was the development of quality care they

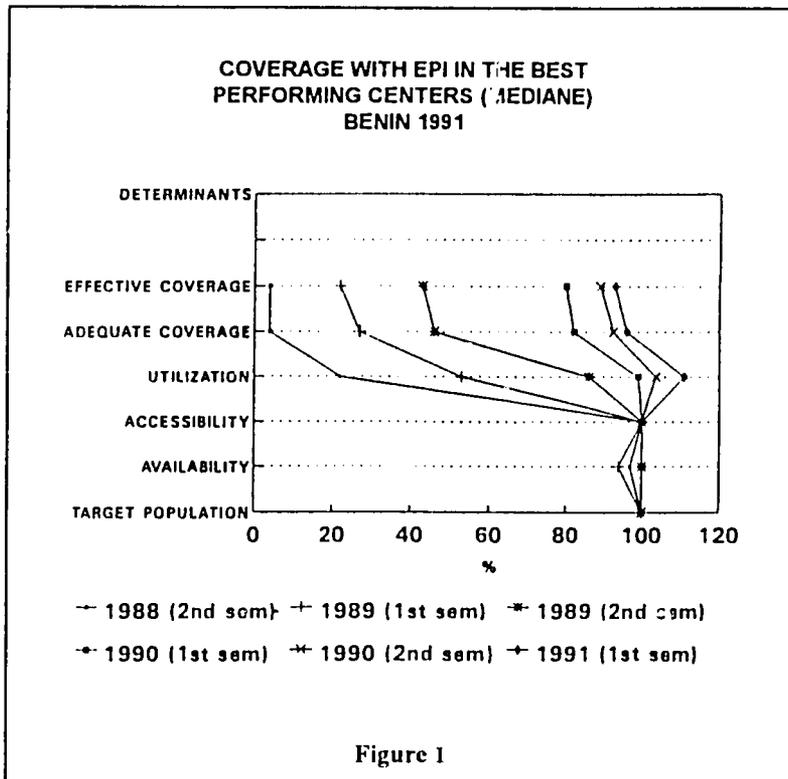


Figure 1

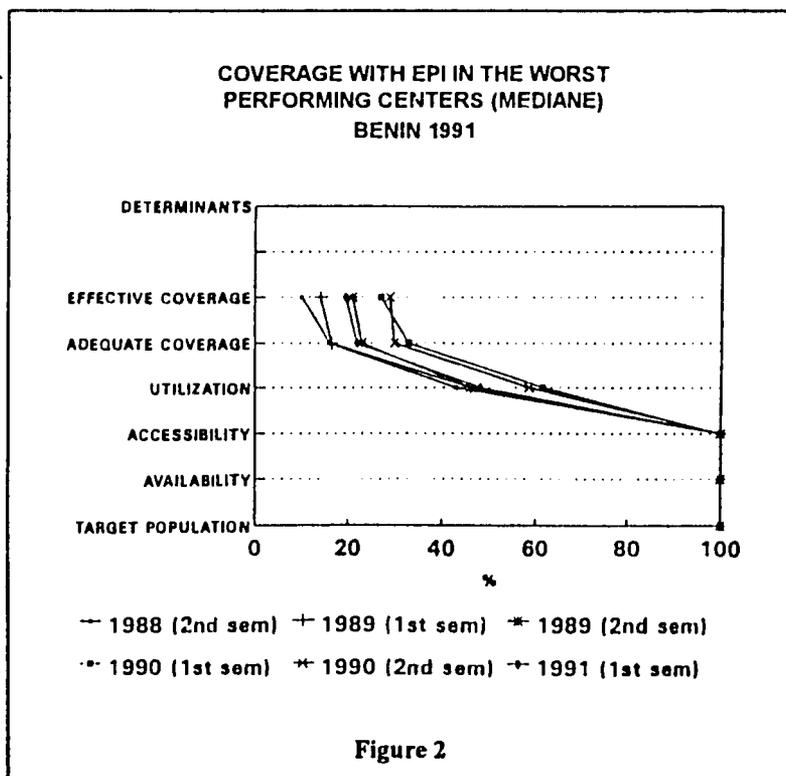


Figure 2

considered worth returning for. The monitoring results suggest that in the best centers, the quality of care and the human interactions were improved in the context of the monitoring process (Figure 3).

It is often argued against the Bamako Initiative that community financing will keep people from using essential care. A review of experiences from Africa shows that the user fees are not the only, and often not even the most important, factor determining the use of services (Parker and Knippenberg 1991).

One other key factor that determines use is well illustrated in the coverage curves for curative care for Guinea. Serious problems appear to be occurring in the worst centers concerning availability of drugs. This undermines the use of services because communities consider drug availability an important part of quality. The best centers show a major increase in coverage. The "bulging" of the curve between access and utilization illustrates that the population with access makes more than one first visit per person and per year, or people travel further than one hour to seek care. The very small drop

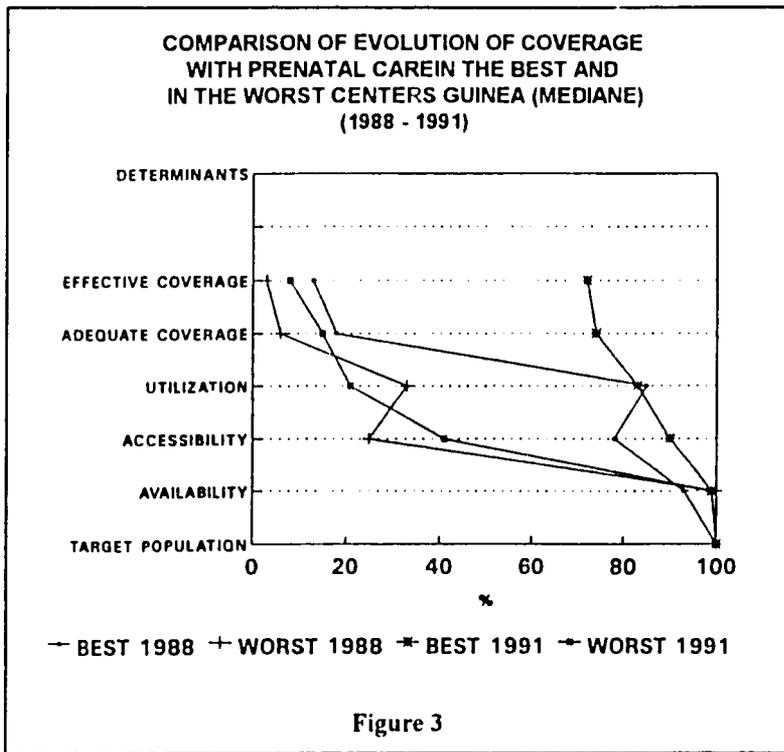


Figure 3

decentralization of management, essential drugs, and community management and financing. The thrust of many of these policies concerns government facilitation of community co-management and ownership. In only a few African countries are these conditions not fulfilled. A second key condition is management

support capacity not only for health staff, but especially to improve management capacity of communities, which is a major bottleneck in many countries. Although WHO and most governments and other organizations are focusing on management training and strengthening management systems, a major challenge

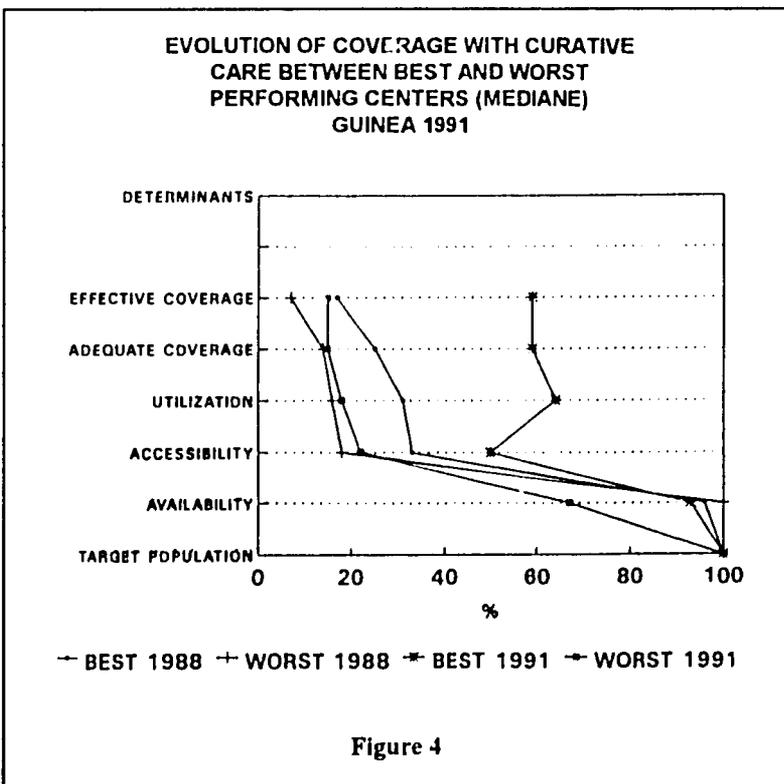


Figure 4

between utilization and adequate coverage indicates that few people attended the health center and did not pay the full treatment price or were exempted.

If we want to put in place cost-effective minimal care packages through appropriate revitalized service delivery structures and efficient management systems, quickly and on a large scale, a series of conditions needs to be fulfilled. First, certain policy conditions need to be in place. These include national health plans of action and policies on

decentralization of management, essential drugs, and community management and financing. The thrust of many of these policies concerns government facilitation of community co-management and ownership. In only a few African countries are these conditions not fulfilled. A second key condition is management support capacity not only for health staff, but especially to improve management capacity of communities, which is a major bottleneck in many countries. Although WHO and most governments and other organizations are focusing on management training and strengthening management systems, a major challenge

remains in this field. A final condition is logistic support. This is not a conceptually difficult issue, but ensuring continuous availability of cold chains, transportation, drugs, and vaccines requires major effort.

What are the financial implications of revitalizing the existing health systems along these lines? Experience in several countries has shown that revitalization of an existing health center, in terms of local preparation and start-up, costs as little as \$10,000 to \$20,000 per health center, or about \$1 per person. No government at this meeting is spending less on public health. Few donors spend less in areas they assist. The external funding required to revitalize the entire existing health center networks in West and Central Africa by 1995 is estimated at approximately \$150 to \$200 million for preparation and start-up costs (UNICEF 1993), which amounts to less than \$1 per capita. This is not exorbitant in the context of debt levels, discussions about debt relief, and the amounts major international donors already invest in health. In fact, about half this amount has already been committed by UNICEF and other donors for the revitalization of peripheral health systems. On the other hand, the cost implications of expanding the health center and hospital network, involving new construction, are much higher and vary between countries, as does the cost of revitalizing district hospitals. Estimating the costs of genuine community development activities is even more difficult and has not been attempted in this context.

Recurrent costs, especially local operating costs, are often wrongly considered the major obstacle to such a revitalization. Several years ago the Kasongo project published the cost estimate of \$1 per person per year for an operational health center (Kasongo 1984). Many critics claimed this was impossible. The analysis of experiences from eight African countries, involving not small pilot projects or mission hospitals but large or medium programs in routine governmental settings, shows that \$1 to \$2 per person per year for operating costs at health center level is realistic (Knippenberg 1990, 1991, MOH Mali 1990, Landrau 1989, UNICEF Senegal 1991, MOH Uganda 1989, Miller 1987). The costs per center have been classified by salary, drugs, and other local operating costs. Present community financing systems with affordable user fees at a level of \$1.50 per full treatment with preventive care subsidies do manage to recover on the average at least the cost of

drugs used at health center level and other non-salary local operating costs, including motivation for health workers, performance bonuses, gasoline for outreach, maintenance of motor bicycles, maintenance of cold chain, cross subsidies for essential care and for exempting those unable to pay. Community financing cannot be an alibi used by governments to abdicate their financial responsibilities for district health systems. Governments will need to continue paying salaries, or other funding sources need to be found, because salary costs cannot be recovered with the present revenue level of communities. Finally, donors need to remain involved in replacing equipment and support, procuring vaccines, as well as subsidizing essential drugs in some countries with weak currencies like Guinea, Bissau, and Zaire (Knippenberg, Parker 1993).

A scenario for achieving the ICAAC goals by 1995 would include revitalization of the entire existing health center network in Africa. Although this sounds ambitious, a close look at what has already been done and the methodologies and experience that currently exist suggests that it is feasible. Revitalization will involve ensuring that health centers function correctly with outreach and health promotion, social mobilization and communication, and community management. This does not mean that community participation problems will be solved in 2 years; it simply means that we can start in the next 2 years by rendering operational what is now existing at the basic operational level. Experience in several countries suggests this can occur even in difficult circumstances. Once this basis exists, the period between 1996 and 2000 can be used for extension of the health center networks, strengthening district hospitals, developing community-based nutrition and health activities as well as full-fledged community problem-solving systems to stimulate community empowerment and development.

With financial support from the World Bank, UNICEF, and several other international donors, Mali is in the process of establishing a scenario that envisions revitalization by 1995 of 200 existing health centers, which will increase access to curative care to 30% (less than 5 km) and access to preventive care to 70%. It will already have a potential impact on under-5 mortality of 30%. By 1997, 160 additional health centers will be constructed or rehabilitated, raising curative access to 45% and preventive access to 80% (MOH Mali 1992).

Even in the context of low accessibility in Mali with only 45% of the population expected to have access to fixed centers (within 5 km) by 1997, and 80% to preventive interventions, utilization and effective coverage levels can be brought close to those access levels through efficient service management and community mobilization and participation.

However, examining the small impact of each of the different package elements within a severely constrained access context can contribute to the reduction of infant and child mortality, the result is amazing. The mortality

pattern of Mali shows that the majority of deaths can be avoided through the components of such a minimum care package. In such a context, that is quite characteristic for the Sahel, implementation of the essential care package through the approach proposed above - even within the limitations of access and accounting for realistic drop-offs between access and utilization, and problems in efficacy, has the potential of reducing under-5 mortality by more than 40%, a major step towards achieving the ICAAC goals for African children for the Year 2000.

COMMUNITY PARTNERSHIPS

CO-CHAIRS:

Joshua Adeniyi, University of Ibadan ARHEC, Nigeria;
Raimi Osseni, UNICEF, Cameroon

SPEAKERS:

1) E. Lambo (WHO/AFRO, Brazzaville); 2) Lawrence Ijyera (Ife Central Local Government Authority, Nigeria);
3) Roger Lero (Ministry of Health, Côte d'Ivoire) and Molly Mort (Peace Corps, Côte d'Ivoire)

SUMMARY OF THE SESSION'S MAJOR ISSUES

As Africa moves into the 1990's, facing economic and political crises, combined with the resurgence of diseases such as malaria and tuberculosis and the emergence of the AIDS pandemic, a major concern is maintaining the gains in health development achieved in the 1980's as well as addressing new challenges. This session provided an informative overview of the International Conference on Community Health in Africa (CISCA), held in Brazzaville, Congo, in September 1992, in conjunction with a meeting of African Ministers of Health. The preparatory work and the discussions at the Conference itself demonstrated clearly that many initiatives are underway across the continent, in which health professionals and communities are working effectively as partners in health development. Revolving drug funds and other health care financing schemes are prominent among these initiatives. Participants in Dakar voiced concern about the role of donors in the community initiatives. Discussants stressed the need for adequate donor as well as national government support for the provision of basic, credible health services as part of the process of achieving substantive involvement of communities in health development.

Two community-level initiatives (mosquito control education in Nigeria and a village pharmacy program in Côte d'Ivoire) were then presented by district-level workers from these two countries. Issues addressed by the presenters and in subsequent questions and answers focused primarily on sustainability, the community's role in management of activities, and the supervisory and technical support role of health workers.

SUMMARY OF LESSONS LEARNED

Communities can participate effectively in improving their own health; however, there is need for policy and technical support from the formal health care system.

Communities must be involved early and throughout the whole process: from problem identification to problem solution to evaluation of results.

Health workers must be prepared to listen to the community and help it to address its needs, not all of which are directly health-related (e.g., roads and markets).

The role of governments and donors is critical; and they must demonstrate that they can work with communities as real partners.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Consideration should be given to more community-based interventions for Child Survival instead of individual or family-based interventions.

Governments need to develop clear policies for health development to better enable donors to facilitate their efforts.

Rather than impose perfected or abstract solutions on communities, the health system should encourage simple community solutions and work to strengthen their implementation and impact.

FINANCING PRIMARY HEALTH CARE: POLICY DEVELOPMENT AND IMPLEMENTATION STRATEGIES

CO-CHAIRS:

Jean Limbassa, Ministry of Health, Central African Republic;
Deborah McFarland, CDC, Atlanta

SPEAKERS:

1) Jean Limbassa (Ministry of Health, CAR); 2) Thomas Kibua (Kenya Health Care Financing Project, Kenya); 3) Madibata Matji (Ministry of Health, Lesotho); 4) Mandy Kader Konde (Ministry of Health, Guinea); 5) David Ofori-Adjei (University of Ghana Medical School, Ghana).

SUMMARY OF THE SESSION'S MAJOR ISSUES

Dwindling financial resources and competing priorities in many African countries have resulted in a health care crisis throughout the continent. African policy makers, international donors, and health professionals have considered multiple strategies, including the Bamako Initiative, as vehicles to address this problem.

Health care financing comprises a number of components including resource allocation, private sector development, social financing, efficiency, facility improvement, cost sharing, and recovery. Experience across Africa in the last decade has revealed a number of important findings. First, the financing of health services is a critical element in the process of resource allocation for primary health care activities as resources are gradually being reduced. Second, community participation and collaborative partnerships with donors are necessary to ensure intersectoral coordination and program success. In addition, improving geographic accessibility and the quality of health care available to rural poor communities have been shown to strengthen the chances of program sustainability. When the revenues generated through cost sharing and/or recovery are retained and managed at the community level, there is a greater chance of success, which involves community ownership

Program experience with financing primary health care, policy development, and implementation strategies presented and discussed in this session revealed that the financing of primary health care is a viable and realistic option to address the problem of inadequate resources. Specific examples include the evidence from the Central African Republic and Kenya that the newly formulated national health development plan and an intersectoral committee were effective components in affecting policy development and institutionalizing health care financing. Additional experience from Ghana revealed that costs did not appear to be a barrier to the choice of a health facility or to the ability to purchase drugs, and that communities would purchase medicines at the closest drug outlet. On a very positive note, Guinea has demonstrated that by improving the supply and management of essential drugs, up to 92% of the recurrent costs can be recovered by selling these medicines at the community level. The data presented from Lesotho suggested that an increase in user fees caused a reduction in service utilization of government health facilities and induced a shift to private, mission sector providers.

SUMMARY OF LESSONS LEARNED

Decentralization of activities is important for effective community participation and involvement in mobilizing resources and providing sound program management.

Cost sharing/recovery mechanisms should be implemented in phases to ensure acceptance by the target population and to maximize the management of activities.

Intensive supervision and training are required for effective management of revenues collected at the community level to determine the most effective utilization of these funds.

**RECOMMENDATIONS
FOR FUTURE DIRECTIONS**

Education of the community is essential to ensure understanding of the exact meaning of cost sharing or cost recovery, and the specific activities required for these strategies to be implemented.

Utilization of services improves when the quality of care is improved at the time user fees are increased/ introduced.

Cost sharing has proven to be effective when collected revenues are retained at the district level.

Additional support should be provided to conduct further research activities designed to determine the effects of user fees on utilization rates in both public and private sectors.

Greater effort should be made to involve the private sector and non-governmental organizations in the provisions of essential drugs and curative and preventive health services to improve facility management at the community level.

DISTRICT LEVEL STRATEGIES FOR ACHIEVING HEALTH FOR ALL IN AFRICA BY THE YEAR 2000

CO-CHAIRS:

Issakha Diallo, Ministry of Health and Social Action,
Senegal;
Rene Owona Essomba, Ministry of Health, Cameroon

SPEAKERS:

1) Akanni O.O. Sorungbe (Primary Health Care Agency, Nigeria); 2) Agostino Munyiri (REACH, Kenya); 3) Diawara Alassane (World Bank, Senegal); 4) Rene Owona Essomba (Ministry of Health, Cameroon); 5) Auguste Ambendet (Ministry of Health, Congo); 6) E. Lambo (WHO/AFRO, Brazzaville).

SUMMARY OF THE SESSION'S MAJOR ISSUES

The discussants identified a range of issues related to the delivery of health services at peripheral levels and efforts to strengthen district level management and support of primary health care. Policy issues included the tendency toward vertical, poorly articulated health programs; the financing of primary health services; and inadequate coverage of such services. Management issues discussed were inappropriate resource allocations to hospitals as a result of overly centralized systems, inadequate planning and budgeting processes, poor information systems, weak resource management skills, and poor supervisory systems. Other issues identified included the resulting failure of programs to optimally affect childhood morbidity and mortality, the lack of critically needed resources, particularly drugs, and the lack of adequate community-level decision making.

SUMMARY OF LESSONS LEARNED

Implementation of primary health care for the past 15 years has been a very rich experience. Among the lessons learned are:

- The peripheral facility and its performance as the corner stone of primary health care is critical;
- Political commitment at all levels is essential;

- Public health leadership skills development is one of the most important investments to be made;
- Decentralized management, including shared management with community institutions, is important;
- Clear assignment of responsibility for health services is required;
- Integrated health services are more efficient and more readily accessed by clients;
- National policies and budgeting must prevent allocation of excessive portions of total resource to secondary and tertiary care levels;
- Effective technical support systems are essential, particularly health information systems, supervision, quality control, and training; and
- There is a need for effective demonstration of district level management systems, diffusion of information concerning attributes of those systems, and evaluation of results.

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Recommendations focused primarily on improving general management capacities including the need to:

- Organize health services more effectively to concentrate adequate management and supervisory skills at the district-level;
- Use data more effectively to programs and policies and to make decisions;

- Establish more effective policies to promote community participation, intergrated service delivery systems, and comprehensive case management of the sick child;
- Improve the relationship between health workers and clients;
- Improve the financial management of programs and the process of setting program objectives and targets; and

- Develop more powerful evaluation methods.

These specific recommendations collectively form a strong call to develop management skills and to improve their applications to strengthen primary health care programs. The second focus of the recommendations involved the need for better coordination among international donors, national programs, and non-governmental organizations to support better managed health programs that encourage ownership and participation by communities as well as by supporting partners.

VISIONS FOR THE FUTURE

CO-CHAIRS:

Ndiro Ndiaye, Minister of Women, Children and the Family, Senegal;
Hope Sukin, A.I.D., Washington

SPEAKERS:

1) A.O.O. Sorungbe (Primary Health Care Agency, Nigeria); 2) Veronique Lawson (Minister of Health, Benin); 3) Deogracias Nshimirimana (Ministry of Health, Burundi)

SUMMARY OF THE SESSION'S MAJOR ISSUES

In the 1990's, Africa faces major challenges: political, social, economic, and epidemiologic. Each of these has direct impact on the health and survival of Africa's children. Living in countries without peace and political stability, children are at increased risk of undernutrition, morbidity, and mortality, as exemplified by Liberia and Somalia where mortality rates are increased 30 fold. Illiteracy, unemployment, and poverty all constrain the achievement of the goals set at the World Summit for Children.

The barriers to improved health and child survival are clear: ill-timed fertility (too early, too close, too many, and too late), unattended delivery, neonatal tetanus, lack of exclusive breastfeeding and appropriate weaning, ARI, diarrhea, malaria, and measles. In addition, the epidemic of HIV threatens children through infection transmitted from their mothers or orphanhood.

Despite these problems, Africa has demonstrated amazing progress during the last decade. Strategies to increase child survival are working and can continue to work. A more holistic approach to the sick child offers an opportunity for more effective and efficient use of limited resources.

Maximizing these opportunities will require new and improved partnerships at each level: community, health facility, district, region, nation, donor partner, and the international level. Basic to these improved partnerships are two prerequisites:

- political will, and
- national health policies with clearly defined goals.

The dynamic tension between national independence, self-sufficiency, and self-determination, on the one hand, and the partnerships with bilateral partners, and bilateral and international technical assistance agencies, on the other, is a major issue. Cooperation and collaboration within the framework of national health policies are essential.

SUMMARY OF LESSONS LEARNED

Despite economic difficulties, Child Survival has been a remarkable success. Democratization is making governments responsible for the health of their children.

Technically sound, culturally acceptable, affordable, and effective technologies are available to improve the health and survival of children.

Primary Health Care is the appropriate and correct strategy. Its effectiveness can be improved through use of operational research.

Six factors are essential to effective implementation of PHC: management, decentralization, integration, community partnerships, ongoing monitoring, and applied research.

Quality of care is emerging as the major determinant of effective versus ineffective PHC. High drop-out rates are directly attributable to poor client reception and hostility by of health staff.

Intersectoral collaboration, involving finance, education, literacy, and women in development, is essential.

Self-sufficiency is being achieved in Bamako Initiative areas where local communities are sharing in decision making and financing of health care. Systems for provision of essential drugs are an important component of this strategy.

Self-reliance in production of vaccines and essential drugs must be a long-term objective for Africa.

Media advocacy is an important component of PHC.

New patterns of sexual behavior will be needed in order for Africa to combat the problems of STDs and AIDS.

“Don’t sacrifice the future of our children for ourselves and today’s pleasure.”

Donor support instead of control of national policy is an important issue. i.e., “See where you fit in; otherwise, go home”

RECOMMENDATIONS FOR FUTURE DIRECTIONS

Be true to the spirit of Alma Ata, the World Summit for Children, and the OAU's ICAAC.

Sustain and expand the gains of the 1980's.

Increase political responsibility by providing better access to education and health services.

Economic situations demand new partnerships - both public and private, modern and traditional. New partnerships between communities, districts, nations, and donors will be needed.

Increase the efficiency of health services through improved policies, management, and thorough integration of service delivery programs.

Emerging diseases such as HIV pose a special challenge. HIV prevention and control efforts should be linked to Child Survival efforts.

Health systems support strategies need to be strengthened (e.g., HIS, training) and linked to morbidity and mortality outcomes.

Information for advocacy and decision-making is essential at community, district, and national levels.

REPORT ON THE FINANCING STRATEGIES FOR SUSTAINABILITY OF HEALTH AND CHILD SURVIVAL SERVICES IN AFRICA WORKSHOP

BACKGROUND

The Health Financing Workshop was designed and conducted by the Health Financing and Sustainability Project, with technical input from the Centers for Disease Control and Prevention. The target audience was senior decision makers from African ministries of health who have responsibility for developing and implementing national health financing strategies. Representatives from 14 countries and selected donors, including A.I.D., the World Bank and UNICEF attended the workshop.

OBJECTIVES

The workshop was intended to provide a forum for dialogue and for exchange of up to date information and ideas among senior officials and decision makers in African Ministries of Health, donors and technical experts. In addition, the workshop intended to generate discussion and action on health financing policies and strategies to promote the sustainability of child survival health programs in Africa during the 1990s.

The specific objectives of the workshop were to:

- Provide selected state of the art technical updates and lessons learned from health financing policy initiatives in Africa in the past decade.
- Promote problem solving to address key obstacles to developing and implementing health financing policy initiatives and strategies for the health sector.
- Encourage participants to list recommendations, based on presentations and discussions during the workshop, for:
 - steps to strengthen the sustainability of financing for child survival services, along with other priority health services

- actions that can be taken immediately to remove obstacles to implementing viable financing strategies for health services; and
- financing policy issues that need further research

WORKSHOP ACTIVITIES

The three day workshop included technical presentations, country case studies, panel discussions and substantial plenary discussions. Technical presentations addressed the recent history of health financing reforms in Africa, the use of the term sustainability, the financial sustainability of child survival initiatives in Africa, and Africa's experience with user charges, hospital reform and the Bomako Initiative.

Country case studies included presentations by representatives from five countries (Cameroon, CAR, Niger, Kenya) that are at a different stage in the process of implementing cost recovery programs and financing reforms.

During the donor panel, representatives from four agencies assisting with health financing reforms in Africa (the World Bank, UNICEF, A.I.D. and WHO) presented their perspectives and policies. The donor representatives urged African countries to continue the steps already taken towards reform and pledged financial and technical support for those efforts.

LESSONS LEARNED

During the course of the workshop, participants were encouraged to state their beliefs about important health financing issues in terms of the "conventional wisdom". At the end of the workshop, participants reviewed the "conventional wisdom" around the issues and

reclassified each as confirmed, inaccurate or in need of additional research. Previously inaccurate beliefs were restated to reflect the group's perspective. The following summary of the participants' consensus regarding the "conventional wisdom" surrounding important health financing issues represents a concise listing of key lessons learned from health financing efforts in Africa, arranged by major topic area.

Strategy

The lack of all information required to develop and implement a national cost recovery program should not impede the definition of program guidelines and strategies.

Cost recovery programs should be implemented in phases.

Cross country comparisons of health spending should be carried out with caution, given the difference in input prices, disease epidemiology, accounting practices and population densities that exist between countries.

Revenue, Pricing and Willingness to Pay

Initial costs of implementing a cost recovery program may exceed the revenues.

There are acceptable levels of prices for health care services that exceed the cost of collecting fees.

User fees can generate sufficient revenues to make important improvements in the quality and/or quantity of health services at the local level.

Contributions in kind or in cash in return for health services is not new to most Africans.

People are willing to pay for health services.

A substantial portion of revenues must be retained and managed at the level where they are generated.

Improvements in the quality of primary health services at the peripheral level, as perceived by the consumer, can save patients money.

Both the price and quality of health services affect utilization rates.

The poor are more sensitive to price and quality changes.

User fees may limit frivolous utilization of health services.

Quality of Services

Quality improvements should accompany, and where necessary, should precede the implementation of cost recovery programs if cost recovery programs are to succeed.

Quality improvement should be one of the objectives of a cost recovery program.

Revenues from cost recovery should be used as necessary to improve the quality of health services.

Close and regular supervision of health facilities and communities is an important contributor to the success of cost recovery programs.

Efficiency

It is important to provide appropriate incentives to personnel throughout the health system.

Integration of services has a high potential to improve the efficiency of health service delivery.

Information needs for monitoring cost recovery programs must be carefully assessed and all information collected must be justified in terms of the time and cost required to collect it.

Role of the Community

Community participation in planning, managing, implementing and monitoring cost recovery programs is essential for their success.

Consumer misinformation about specific health interventions can limit service utilization and revenue collection.

RECOMMENDATIONS

Priority Issues and Recommended Actions

Participants identified the following key issues and their associated priority actions that they would recommend to their Ministers upon return.

Sustainability - Develop an overall financing policy and strategy for the health sector.

Resource Mobilization - Maintain government commitment to financing; Increase intersectoral collaboration; Define cost recovery policies.

Role of the Community - Manage and retain revenue at the local level; Increase community participation.

Quality of Services - Increase availability of drugs.

Efficiency, Cost Containment and Resource Allocation - Establish essential drug policy; Promote integration of services

Coordination and organization of resources - Define and coordinate the roles of all health sector participants, including private providers and donors.

Pricing policies and Costs - Estimate the cost of all health services

Accountability and Performance - Plan for health worker incentives; Determine criteria for use of revenues; Develop financial management information system

Legal Framework - Develop a legal framework for financing policy reform

Training and Implementation - Integrate financing issues into health worker training to improve budgeting, planning and management capabilities; Provide opportunities for exchanging information through workshops and study tours.

Issues Needing Future Research

Participants identified the key general areas and associated high priority topics requiring additional research:

Management and community participation, including the level and conditions of autonomy to be granted to hospitals and methods for promoting a realistic level of community involvement.

Costs and efficiency of health services, particularly the cost of individual services and the potential for cost savings that can be achieved through integration.

Equity, particularly mechanisms for protecting the poor. Provider response, particularly methods to measure performance and to provide incentives.

CONCLUSIONS

Participants concurred that there has been a remarkable innovation in the financing of health services in Africa. While the problem of limited, and in some cases declining, health budgets is very real, the workshop focused on identifying realistic solutions. There is a great deal of information about what strategies work, including the remarkable initial success of the Bamako Initiative in promoting community financing of primary health care services. Rather than starting from the beginning, countries which are initiating health financing policy reforms or cost recovery initiatives should evaluate and adapt to their local situation, policies and strategies developed by other countries.

REPORT ON THE HEALTH INFORMATION SYSTEMS WORKSHOP

OBJECTIVES

The objectives of the workshop were to update participants on current approaches to the implementation of health information systems managed by child survival programs in Africa; to identify information needs and system requirements for monitoring progress towards World Summit for Children goals; to review currently available software and computer tools for managing health information; to provide an opportunity for "hands-on" experience using available software; and to identify challenges confronting child survival programs in the domain of health information systems.

EXAMPLES OF NATIONAL HEALTH INFORMATION SYSTEMS

Representatives from Nigeria, Burundi, Togo, Cameroon, Niger, Zimbabwe, Namibia, and MSF/Epicentre discussed their health information systems. Data managed by these systems include general primary health care program data, sentinel hospital-based disease surveillance data, hospital-based morbidity and mortality data, routine disease notification data, vaccine logistics data, and nutritional surveillance data from emergency settings. MOH staff use data from these systems to monitor trends, develop capacity in epidemic preparedness, and monitor and evaluate program indicators at the local level.

MAJOR WORLD HEALTH OBJECTIVES

The goals of the World Summit for Children were presented, together with the recently proposed indicators and the data that are needed to monitor international progress towards these goals. Countries were encouraged to evaluate whether their information systems to ensure that they are collecting the data needed to calculate World Summit indicators and monitor progress.

The Healthy People 2000 plan of the U.S. was presented as an example. It explicitly identified surveillance and data systems as one of 22 priority areas, given that an

information infrastructure is required to monitor progress towards achieving goals. The U.S. Vital Registration System supplies data used to calculate 12 of the 18 are health indicators of Healthy People 2000, highlighting the importance of developing such systems in all countries.

Data to calculate World Summit indicators will come from multiple sources, including large-scale surveys that will provide data on mortality and other indicators. Currently, many African countries may not have the personnel or financial resources necessary to execute large scale mortality surveys and to calculate the suggested child and maternal mortality indicators. Participants discussed the need to develop indicators for World Summit goals that can be calculated at the national and local levels using routine sources of data.

MEASURING INFANT AND CHILDHOOD MORTALITY

Given the need to measure progress towards international goals, methods for measuring infant and childhood mortality were reviewed, including the Demographic Health Survey methodology, and the preceding birth technique (PBT) and verbal autopsy (VA) method. A WHO Consultation on PBT and VA concluded that PBT could be used at local levels because the data needed are already collected during health visits. Data on previous births are important for identifying and referring high-risk pregnancies. The WHO consultation recommended that PBT be implemented in many antenatal, maternity, and vaccination clinics to gain more experience with the method and to define appropriate uses more clearly. Use of the PBT at the national level requires further discussion, as the method may not be adequate for monitoring national progress towards the mortality objectives. Consultants also agreed that the VA method will not yield accurate information on many of the major causes of death (e.g. diarrheal disease, ARI, HIV, malaria). The consultation recommended the development of a standardized questionnaire for the VA method.

Participants expressed concerns about the general feasibility of measuring mortality at the national and local levels and, consequently, the practicality of establishing mortality reduction goals.

LESSONS LEARNED TO DATE FROM HEALTH INFORMATION SYSTEMS INTERVENTIONS

Information needs and uses by international agencies do not always correspond with information needs and uses at local levels. Furthermore, many international information needs, including data on mortality reduction objectives, can only be met by data collected in large surveys that are not easily replicated by national or local level staff.

Donor agencies frequently conduct health information systems and operational research activities, creating a gap between producers and users of health information. Consequently, many data are collected by health information systems without thought to their use at the local level. Substantial operational research has been conducted, but the results often have not been used for any purpose.

Health information systems should function autonomously and should be designed such that data are collected, analyzed, and used at local levels and are not dependent on feed back from more central levels. Local health workers need to be involved with developing and using indicators at their level of the health system.

The time lag between the collection, analysis, and dissemination of data must be reduced in order to maximize the use of data in public health decisions. Completeness, timeliness and accuracy of reporting must be improved.

Countries should frequently share experiences and information on the development and performance of their respective health information systems.

Data from multiple sources are often required to meet the full range of information needs within the MOH. The capacity of a health information system should include surveys, outbreak investigations, and special studies, as well as routine epidemiologic surveillance and program management data collection.

Information needs should determine the selection of software, rather than fitting information needs to available software, whether the software is public domain or developed commercially.

The location of the health information system in the organization of Ministries of Health influences its ability to fulfill its role.

Global approaches that use simple techniques to measure mortality are not available. National statistics offices could be better used, and other institutions and sectors could be contacted to obtain available data on mortality.

Health information systems often do not receive adequate financial and institutional support.

RECOMMENDATIONS FOR FUTURE HEALTH INFORMATION SYSTEMS ACTIVITIES

Country working groups should be convened to develop a minimum set of indicators that can be used at the local and national levels to monitor progress towards the World Summit objectives. Further, simple methods for measuring mortality and guidelines for collecting and using mortality data at the local level should be developed.

Countries should evaluate their information systems to determine if all required information is being provided and if all information being provided is necessary.

Donor agencies should include within their HIS activities a well-defined training program to increase MOH capacity to develop and manage national health information systems based on multiple data sources. This will include building national- and peripheral-level capacity to collect, manage, analyze, and use health information in order to respond to the public health needs of the nation. Epidemiology training programs should be provided to assist countries in these efforts.

The quality of health-related information should be improved by developing and then using standardized case definitions, simplifying the process of data collection, ensuring that the data collected are needed and used at the local level, and developing and

implementing supervisory systems to ensure timely and complete reporting.

Donor agencies should improve the coordination, communication, and collaboration of their health information systems activities.

Donor agencies working to develop health information systems should ensure that their systems are integrated into the MOH's HIS. The MOH should operate, supervise, and use the HIS to promote its sustainability.

Donor agencies should begin working with MOHs to develop robust vital registration systems. These

development efforts include mobilizing communities and peripheral health workers to collect necessary census and mortality data. Statistical offices and other institutions should be contacted to obtain available mortality data.

MOH staff committed to achieving the goals established at the World Summit for Children should ensure the development and use of an adequate HIS to monitor progress towards reaching those goals. MOHs should ensure that the HIS is a national priority and a component of health service delivery, thereby helping to secure an adequate budget and level of commitment for the HIS.

REPORT ON THE CASE MANAGEMENT OF THE SICK CHILD (ARI/MALARIA/DIARRHEA) WORKSHOP

OBJECTIVES

The objectives of the joint Acute Respiratory Infections (ARI), Malaria and Control of Diarrheal Diseases (CDD) workshop were to:

- Provide technical updates on ARI, diarrheal disease and malaria control.
- Identify technical and implementation issues common to CDD, malaria and ARI control programs; and
- Assess the need for new approaches to program management required to deliver comprehensive case management services to sick children.

Over 90 individuals participated in the workshop, including program managers from African ARI, malaria and diarrheal disease control programs, African clinicians, representatives from the World Health Organization's (WHO) headquarters office and the regional office in Brazzaville, staff from the Centers for Disease Control and Prevention, and staff from USAID and its cooperating agencies.

METHODS

The principle focus of the first day was to provide participants with technical updates on ARI, diarrheal diseases and malaria control. Separate sessions for the three interventions were held and participants gave and discussed numerous technical presentations. In preparation for the subsequent discussions which would identify commonalities between the three interventions, participants in each of the three sessions identified technical and programmatic issues related to six common topics:

- Diagnosis and Treatment,
- Monitoring and Evaluation,

- Information, Education, Communication and Health Education,
- Training,
- Human Resource Management and Supervision,
- Resource Management and Logistics.

Technical issues included such topics as the challenge posed by drug resistant pneumococci in choosing drugs for ARI control programs. Implementation issues included the currently inadequate support for health worker supervision in out-patient settings.

Following these discussions, three working groups were formed to discuss, in detail during days two and three, the commonalities between interventions among the six topic areas. Participants from each of the three technical intervention sessions assigned themselves equally to the three working groups to ensure a balanced mix of ARI, CDD and malaria specialists among each working group's members. Group One addressed topics A and B, Group Two addressed topics C and D, and Group Three covered topics E and F.

Day two began with the three technical intervention groups presenting a summary of the issues related to each of the six topics for their intervention. The three working groups then convened to review in detail the opportunities and constraints to implementing combined ARI, CDD and malaria services relevant to their two topic areas. Issues were summarized under one of three categories:

Unique versus shared issue between ARI, CDD and Malaria

Potential for collaboration within the current framework and obstacles to this collaboration

Potential solutions to obstacles required to permit full collaboration.

During day three the WHO/UNICEF sick child treatment algorithm was presented to all participants. The three working groups then reconvened to discuss the implications of the algorithm, given the issues identified by their group during the second day.

Participants concluded that the integrated case management of the sick child initiative was opportune but that it required field testing in order to identify and evaluate necessary modifications.

RECOMMENDATIONS

Participants noted that the experience from several countries including Nigeria and Namibia, and from international organizations like WHO and UNICEF, demonstrates a clear need for integrated case management for diarrhea, ARI and malaria. However, the following programmatic and technical issues should be addressed in order to assure the best chances of success for the integrated case management strategy:

Programmatic Recommendations

Donor level:

Improve coordination between donors and governments.

National level:

All partners, including donors, should participate in defining national policies for integrated child care.

Identify new methods to manage programs and to allocate resources that are required to implement integrated child care programs.

Identify the potential savings in time and resources that may result from implementing integrated programs.

Ensure that implementation does not diminish the output of already existing vertical programs.

Intermediate level:

Include program managers and trainers in an effort to redefine and rearrange existing supervisory systems

to make them more appropriate to integrated service delivery.

Ensure that adequate logistical support exists for integrated supervision and motivation of health personnel.

Ensure that high-quality, integrated training is provided to health personnel.

Strengthen the information, education and communication component of training to improve health care in the home.

Define a list of essential drugs and supplies.

Field test, evaluate and adapt, as necessary, the integrated case management algorithm at the peripheral level and allow each country to define the optimal operational level for implementing the initiative.

Use the integrated case management approach as an opportunity to improve the referral system at all levels.

Technical Recommendations:

Define the role of the laboratory, and address problems caused by the lack of laboratory equipment.

Define the context for collaboration between the Ministry of Health and Universities, particularly nursing and medical schools.

Define strategies to monitor drug resistance and side effects.

Define strategies to improve patient compliance in terms of completing the standard course of treatment and of using traditional, herbal or folk remedies.

Define the role of information, education and communication in training, in ensuring patient compliance with therapy and in improving home-based care.

REPORT OF EPI WORKSHOP

In conjunction with the ACSI-CCCD Forum on Child Survival in Africa, a 3-day Expanded Programme on Immunization (EPI) workshop was held on March 25-27, 1993. Forty-five participants, including EPI managers and Directors of Preventive Medicine from 14 countries, attended. In addition, the directors and staff of the divisions of EPI from WHO/AFRO and Geneva were present, along with staff from UNICEF, Epicentre, Non-Governmental Organizations, and USAID-funded projects.

The World Summit for Children goals of the EPI were reviewed by WHO/Geneva Director of EPI, Dr. Robert Kim-Farley.

- Attain 90% coverage by the year 2000 with all antigens
- Eliminate neonatal tetanus by 1995
- By 1995, decrease measles morbidity and mortality by 90% and 95% respectively.
- Eradicate polio by the year 2000.

The objectives of the workshop were to review progress in EPI implementation, to review new technical developments, and to identify strategies to ensure achievement of the World Summit for Children EPI targets.

Remarkable advances have been made since the first EPI training began in 1979. Immunization coverage has increased from less than 5% in 1979 to almost 60% in 1990. Accessibility to quality immunization and other health care delivery services has dramatically improved. Through improved management and use of data, more effective and efficient delivery systems are being developed. The incidence of cases and deaths due to vaccine-preventable diseases has been significantly reduced.

EPI priorities are to sustain and expand levels of coverage, establish effective surveillance systems, obtain the necessary resources, and introduce new vaccines. Expanded use of EPI contacts are being used to test:

- The feasibility of introducing new vaccines for diseases such as hepatitis B,

- The simultaneous administration of micronutrients, and
- The integration of family planning.

Presentations focused on progress achieved, innovative technical strategies, operational approaches to maintain and increase coverage, and the strengthening of disease surveillance (Appendix I). The constraints felt by many countries are financial, political, and technical. The key points made during the discussions of the technical presentations, which highlighted these concerns and the direction of the EPI, were the following:

EPI priority is shifting from an exclusive focus on coverage to focus both on coverage and surveillance. District-level management in planning, training, implementation, monitoring, and evaluation is an important programmatic priority for the 1990's. Quality of services and their sustainability are key elements.

Training, supervision, and logistic support are necessary to ensure that every injection is carried out with a sterile needle and a sterile syringe and that vaccines remain potent at the time of immunization.

Vaccination strategies, vaccine usage, and vial size need to be continually assessed to ensure optimal use of available vaccine.

Elimination of missed opportunities is an effective strategy to improve immunization coverage. Major issues to be addressed include:

- Ensuring that simultaneous vaccinations (all vaccinations for which a child is eligible) are given at the same session,
- Screening and immunization at all contacts (including sick children and child care takers),
- Eliminating false contraindications,
- Addressing health workers' fears of vaccine wastage and vaccine shortages, and

- Ensuring adequate supplies of vaccines at all levels of the health system (facility, district, and national). Parental refusal is not a major problem.

Ensuring sustainability means that countries will need to take on increasing responsibility for procurement, especially those items available in country. EPI software is an important tool for improving the quality of planning, implementation, and monitoring of the EPI.

Urban areas provide a special challenge for the EPI due to the high rates of growth, their potential as a reservoir and disseminator of infection, the development of new underserved urban areas (frequently slums), the high volume of clients at health facilities, and the potential for significant involvement of private providers. In Togo and Burundi, studies on the use of the EPI contact to provide one-on-one communication on the availability of family spacing services indicate increased use of contraceptives.

While countries are assuming increasing responsibility for financing, partner assistance will continue to be needed in countries with limited foreign exchange.

Disease specific issues confronting EPI managers in the 1990's are:

Measles

Measles still kills an estimated 500,000 African children each year. Key priorities in achieving regional targeted reductions in morbidity and mortality include:

- High vaccine coverage in at-risk infants (usually 9 to 11 months of age);
- Reducing risk of nosocomial infection through screening and vaccination of all attenders at health facilities and pediatric admissions 6 months to 5 years of age;
- Aggressive mass vaccination of refugee populations;

- Appropriate case management of measles including treatment with Vitamin A when indicated; and
- A disease reduction mentality in which surveillance and investigation are used to assess disease transmission for the purposes of assessing policy and improving implementation.

Neonatal tetanus

An estimated 100,000 neonatal tetanus deaths occur annually in Africa. The elimination of neonatal tetanus as a public health problem requires a dual agenda of high tetanus toxoid coverage and safe delivery. Improved surveillance is needed to identify high-risk areas and to monitor program effectiveness. While high tetanus toxoid coverage in all women is the long-term program goal, priority needs to be given to 100% coverage in women at high risk. Monitoring of coverage will be facilitated by adoption and use of a lifelong record for tetanus toxoid.

Polio

Global polio eradication is targeted for the year 2000. To prepare for the final push, countries need to:

- Achieve and maintain 80% or greater coverage with 4 doses of OPV in all districts;
- Develop a timely system of district-level disease surveillance, including reporting of cases of acute flaccid paralysis; and
- Develop the capability to investigate cases of acute flaccid paralysis, and to use national and regional reference laboratories for confirmation of diagnosis.

Yellow Fever

Countries at risk for yellow fever and not currently including yellow fever vaccine in routine immunization should include this vaccine in routine EPI at the time of measles immunization.

APPENDIX 1 EPI WORKSHOP

EPI Overview

Dr. Kim-Farley summarized global progress in increasing immunization coverage from 5% in 1977 to 80% in 1991. Current concerns are a leveling off in coverage and issues of sustainability. Priority is shifting from an exclusive focus on coverage to focus on both coverage and surveillance. An estimated 2.8 million deaths due to measles, neonatal tetanus, and pertussis are being prevented yearly at present (EPI Information System, April 1993). Achievement of the four World Summit for Children goals related to immunization (90% measles immunization coverage and 95% reduction in measles mortality by 1995, neonatal tetanus elimination by 1995, and polio eradication by 2000) will require increased political, technical, and financial advocacy, as well as support and coordination.

Dr. Okwo-Bele stressed the importance of district management in the continued improvement of the EPI in Africa. Specific priorities included strengthening of surveillance and the improved use of coverage and surveillance data in the immunization planning and management at the local level. Setting forth a vision with measurable targets is essential to mobilizing the political, technical, and financial resources necessary to ensure sustainable EPI programs in Africa.

Missed Opportunities

The problem of missed opportunities remains a major obstacle to achieving high rates of vaccination coverage.

In Lagos surveys of health workers and caretakers identified four major causes for missed opportunities:

- Lack of integrated services;
- Lack of availability of vaccine;
- Provider misconceptions about contraindications;
- Failure to screen ill children and mildly ill children.

Using a population-based survey, CAR investigated integrated child health records to assess the potential for increasing coverage through full utilization of each immunization contact and use of all health contacts. If these two types of missed opportunities were eliminated, measles vaccination coverage would increase from 54% (survey level), to 70% (full use of simultaneous vaccination), to 76% (including sick child visits).

Dr. Aplogan from Togo described the strategy Togo invoked to reduce missed opportunities. This strategy involved the development of a new register which facilitated screening and immunization at all contacts, including the caretakers of children.

Logistics

Mr. Zaffran outlined the current options for vaccine delivery (non-reusable single use - 0.13 cents per dose, disposable - 0.05 cents per dose, and reusable - 0.02 cents per dose). Injection practices surveys are identifying noncompliance with established guidelines in sterilization, use, and disposal of needles and syringes. Quality assurance will require identification of needs, training, and supervision.

Vaccine wastage issues were discussed, including issues of impact, coverage, scope and quality of services, and costs.

Mr. Pierre reviewed issues in transportation management and identified the importance of planning and monitoring in effective fleet management.

Urban Immunization

Increasing urbanization is a major demographic issue for developing countries. It is estimated that urban areas will grow from 20% in 1970 to 60% in 2025.

Assessments in Lagos have identified high access but poor full immunization. Obstacles identified include lack of adequate supplies of vaccine, lack of health worker understanding of policy, high levels of missed opportunities, and poor coordination with the private

sector. Coverage surveys were carried out in each of the 12 urban and 3 rural Local Government Areas (LGAs) of Lagos State. Together with data collected in facility-based surveys and a qualitative study of caretakers, coverage data were used in the development of LGA workplans.

Dr. Othepa outlined the measles strategy in Kinshasa, where age of vaccination was reduced from 9 months to 6 months. Key interventions related to policy, logistics, training, supervision, and formation of local health committees. Measles incidence has been significantly reduced.

Dr. Okwo Bele stressed the importance of disease reduction as the priority focus for urban EPI. In view of the rapid increase in health services delivered by the private sector, coordination is important. Identifying a local area as responsible for area monitoring has proven useful.

Software

Three software packages were demonstrated: CEIS (Computerized EPI Information System), Commodities and Vaccine Logistics, and COSAS (Coverage Survey Analysis Systems).

The role of coverage surveys in EPI is evolving from a routine monitoring tool to a management tool used to meet identified needs for data.

Validation of coverage estimated by administrative methods.

COSAS-derived data on age, interval appropriateness of vaccination, providers, and missed opportunities for immunizations.

Planning tool for district-level planning.

Problem-solving planning tool for high-risk areas.

Lot quality sampling techniques for coverage estimates for high risk areas (e.g., urban slums) deserve further exploration.

Measles

Measles still kills an estimated 500,000 African children per year. The first priority in control is the achievement of high measles vaccine coverage.

As described by Dr. Bizimana, Burundi has achieved high measles vaccine coverage and significant measles reduction. He also described the Muyinga outbreak, where an accumulation of susceptibles led to an outbreak of more than 4000 cases. Vaccine efficacy was in the expected range.

Mrs. Nkuebe described the Lesotho decision to move to a 2 dose schedule. With high coverage, measles emerged as a disease of school children with transmission to younger siblings. After reviewing a number of policy options and documenting serologically a 15% seronegativity in children entering school, policy evolved from mass vaccination of school children, to school enterers, to a two dose strategy with the second dose at 18 months.

Dr. Othepa described the EZ medium-titre trials in Zaire and the effectiveness of 6-month vaccination in reducing disease incidence.

Dr. Moren described measles vaccination in refugee populations in Malawi, the need for an aggressive two-dose vaccine policy, with vaccination at 6 months and at 9 months.

Floor discussion emphasized the importance of a holistic approach to mortality reduction, including high coverage and case management that would encompass treatment of complications and use of vitamin A.

Neonatal Tetanus

Dr. Kim-Farley reviewed the global status of NNT elimination. Dr. Okwo Bele summarized the African incidence and tetanus toxoid coverage status.

Dr. Gasse described the global strategy for elimination of neonatal tetanus as a public health problem. The NNT elimination strategy includes high coverage, safe delivery, and surveillance.

Dr. Yarou from Benin outlined the country's success in increasing TT coverage from 50% to 80%. Strategies included high political commitment including semiannual review by the Counsel of Ministers, training of staff, supervision, and monitoring. Within the context of the Bamako initiative and the availability of drugs, integrated services were key to the improvement in coverage.

Dr. Arsene Ferrus from the Child Institute of Haiti presented the results of his study that assessed TT status through a national TT coverage survey and serological study of women in Haiti who had given birth during the previous year. Results from the serological study showed that lack of good documentation by card and in-depth interviews led to a significant underestimation of TT coverage and, consequently, children born protected against neonatal tetanus.

Dr. Deming from CDC described a revised procedure for estimating through routinely collected data the number of births protected from neonatal tetanus. The recommended procedure consists of assessing at the time of an infant's DPT1 the number of doses the mother had received before delivery. The numerator is the number of children who were covered against NNT at their birth, as indicated by cards documenting the doses their mother received, and the denominator is the number of children receiving DPT1.

Poliomyelitis

After a global overview of polio by Dr. Kim Farley, Dr. Sutter described the global epidemiology and strategic approaches that have led to the interruption of polio virus transmission in Africa and plans for a phased program for global polio eradication.

Key elements were identified as:

- Social mobilization,
- High coverage,
- disease surveillance and laboratory backup,
- Community-based rehabilitation, and
- Accomplishment that will yield accumulating benefits that can be applied to other health problems.

Surveillance, which is essential for polio eradication, requires the timely reporting, investigation, and response to every case of flaccid paralysis. Country studies are currently ongoing in countries of low incidence to assess sensitivity and timeliness of surveillance systems.

Dr. Tomori outlined the role of the laboratory in polio eradication, the development of the regional network of reference laboratories, and laboratory needs at the country level.

Dr. Lobanov reviewed the semiannual reporting form for reporting to WHO. The form involves an assessment of district-level reporting of cases of acute flaccid paralysis. Key issues involve the use of a standard case definition, the immediate reporting and response to cases, laboratory backup, and aggressive control.

Dr. Nsanzabaganwa of Rwanda presented the status of polio coverage in his country. While the country maintains high coverage of 3 doses of polio vaccination, 2 cases occurred in 1992. The main problems the program faces are drop-outs, completeness and timeliness of reporting, and lack of laboratory support for analysis of polio specimens.

Dr. Koffi Tsogbe of Rotary International discussed the support provided by Rotary in Africa. Rotary is continuing to supply polio vaccine, support for social mobilization at the highest levels, and support for surveillance activities.

Yellow Fever

Drs. Tomori and Nasidi summarized the current epidemiology of yellow fever, including the fact that 80% of the world's cases occur in Africa. The recent outbreak of yellow fever in Kenya has renewed attention on this important cause of child mortality. A total of 33 African countries are at risk of yellow fever. Intervention strategies involve the inclusion of yellow fever vaccine as part of routine EPI, the upgrading of surveillance to identify and investigate suspected outbreaks, and the implementation of epidemic control procedures.

Dr. Robertson outlined the resources available to countries from WHO: technical information and assistance and training materials. Sixteen of the 33 at-risk African countries are including YF as part of EPI (for children at 9 months with measles vaccine), and are achieving coverage equivalent to that reported for measles vaccine. UNICEF has agreed to serve as a procurement mechanism for YF vaccine.

EPI/Family Planning Integration

Dr. Aplogan from Togo presented the first of two studies on the integration of family planning with the EPI. Registration forms were revised to identify and refer women attending clinics for counseling on family

planning. Four simple key messages were provided to women at the time of the clinic visit. Preliminary results show that the percentage of referrals for family planning services increased. An increase in immunization coverage was also documented.

A family planning and EPI integration study being conducted in Burundi was presented by Dr. Bizimana. Mothers are offered individual family planning counseling and prompt family planning services at the time their children are vaccinated. Health facilities where this intervention is implemented are compared to control health facilities. The integration of activities appears to have increased new visits to family planning services and has had no negative effect on EPI coverage.

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