COMMUNICABLE DISEASES IN THE WHO AFRICAN REGION – 2001
2002

Division of Prevention and Control of Communicable Diseases
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Unless otherwise stated, all maps, figures, and photographs were produced by WHO staff members.

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Foreword

Throughout history communicable diseases have played a significant role in shaping societies and affecting peoples and communities. As we embark on the 21st century, they are still an important force to reckon with. Since the inception of the World Health Organization, communicable diseases have been a priority area and will continue to be so for some time to come. We are pleased to present to you highlights of the activities of the Division of Prevention and Control of Communicable Diseases (DDC), WHO-Regional Office for Africa. Although the major causes of premature mortality, morbidity and disability vary by age group, sex, location and other determinant factors, more than any other disease group, communicable diseases seriously affect all groups of Africans. Communicable diseases such as HIV/AIDS, tuberculosis, malaria, diarrheal diseases, acute respiratory infections, and vaccine-preventable childhood illness account for over 95% of the disease burden in the African Region.

Effective and affordable interventions are available to prevent, control, eliminate or eradicate communicable diseases from the Region. The challenge, however, is to make these interventions available to the poor and vulnerable segment of the population who are most affected by communicable diseases.

The mission of WHO/AFRO, and the DDC in particular, is to provide technical orientation and support to countries of the African Region based on the resolutions and the recommendations of the Governing Bodies regarding the prevention and control of communicable diseases. These include the elimination of leprosy and neonatal tetanus, control of measles, eradication of poliomyelitis and Dracunculiasis and the elimination or eradication of any other communicable diseases.

This report is intended to highlight the variety of activities undertaken in 2001 to combat communicable diseases and to give a brief overview of the major challenges we face in the area of control of these diseases. As we embark on 2002, we need to chart our directions, and these are also described in brief.

The DDC works in partnerships with Member States, international and local organisations, societies, and communities. This Report is produced and published to share information with our partners on communicable diseases and their control in the Region.

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Harare, Zimbabwe
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>A-D</td>
<td>Auto-Disposable</td>
</tr>
<tr>
<td>ADB</td>
<td>African Development Bank</td>
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<tr>
<td>AFP</td>
<td>Acute Flaccid Paralysis</td>
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<tr>
<td>AFRO</td>
<td>Regional Office for Africa/World Health Organization</td>
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<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>ANC</td>
<td>Antenatal Clinic</td>
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<tr>
<td>ANVR</td>
<td>African Network on Vector Resistance</td>
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<td>APOC</td>
<td>African Programme for Onchocerciasis Control</td>
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<tr>
<td>ARV</td>
<td>Anti-Retroviral</td>
</tr>
<tr>
<td>BCG</td>
<td>Bacillus Calmette-Guerin (vaccine for tuberculosis)</td>
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<tr>
<td>C/HBC</td>
<td>Community and Home Based Care</td>
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<tr>
<td>CCISD</td>
<td>Centre de Cooperation Internationale en Santé et Dévelopement.</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control – USA</td>
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<tr>
<td>CDD</td>
<td>Community Drug Distributor</td>
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<td>CDTI</td>
<td>Community Directed Treatment with Ivermectin</td>
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<td>CMFL</td>
<td>Community Micro-Filarial Load</td>
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<td>CSR</td>
<td>Communicable Disease Surveillance and Response</td>
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<tr>
<td>DALY</td>
<td>Disability Adjusted Life Years</td>
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<tr>
<td>DANIDA</td>
<td>Danish International Development Assistance Agency</td>
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<td>DDC</td>
<td>Division of Prevention and Control of Communicable Diseases</td>
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<tr>
<td>DEC</td>
<td>Diethyl-Carbamazine</td>
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<tr>
<td>DFID</td>
<td>Department for International Development - UK</td>
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<tr>
<td>DMCI</td>
<td>Drug Management for Childhood Illness</td>
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<tr>
<td>DOTS</td>
<td>Directly Observed Treatment, Short Course</td>
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<tr>
<td>DPC</td>
<td>Disease Prevention and Control Officers</td>
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<td>DPT</td>
<td>Diphtheria, Pertusis and Tetanus</td>
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<tr>
<td>DRH</td>
<td>Division of Reproductive Health, WHO/AFRO</td>
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<tr>
<td>EPI</td>
<td>Expanded Program of Immunisation</td>
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<td>ESACA</td>
<td>Eastern and South African Counselling Association</td>
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<td>GAP</td>
<td>CDC Global AIDS Program Initiative</td>
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<td>GAVI</td>
<td>Global Alliance for Vaccine and Immunisations</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GFCV</td>
<td>Global Fund for Children’s Vaccine</td>
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<tr>
<td>GTB/HQ</td>
<td>Global Tuberculosis Program/Headquarters</td>
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<tr>
<td>HAT</td>
<td>Human African Trypanosomiasis</td>
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<tr>
<td>HATCI</td>
<td>Horn of Africa Tuberculosis Control Initiative</td>
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<tr>
<td>HB</td>
<td>Hepatitis B</td>
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<tr>
<td>HBC</td>
<td>Home Based Care</td>
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<tr>
<td>Hib</td>
<td>Haemophilus influenza type B</td>
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<tr>
<td>HIV</td>
<td>Human Immune Deficiency Virus</td>
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<tr>
<td>HMIS</td>
<td>Health Management Information System</td>
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<td>HQ</td>
<td>Headquarters</td>
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<tr>
<td>ICC</td>
<td>Inter-personal Communication and Counselling</td>
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<tr>
<td>IDS</td>
<td>Integrated Disease Surveillance</td>
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<tr>
<td>IDSR</td>
<td>Integrated Disease Surveillance and Response</td>
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<tr>
<td>IMCI</td>
<td>Integrated Management of Childhood Illness</td>
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<tr>
<td>IPAA</td>
<td>International Partnership Against AIDS in Africa</td>
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<tr>
<td>ITN</td>
<td>Insecticide Treated Net (bed net)</td>
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IVM  Integrated Vector Management
LEM  Leprosy Elimination Monitoring
LF  Lymphatic Filariasis
MB  Multi-Bacillary
MCE  Multi-Country Evaluation
MDA  Mass Drug Administration
MDR  Multi-Drug Resistant
MDR – TB  Multi-Drug Resistant Tuberculosis
MDT  Multi-Drug Therapy
MDV  Multi-Dose Vial
MLM  Mid-Level Management
MNT  Maternal and Neonatal Tetanus
MSU  Management Support Unit
MTCT  Mother-To-Child Transmission
NGO  Non-Governmental Organisation
NID  National Immunisation Day
NPO  National Professional Officer
NT  Neonatal Tetanus
OAU  Organisation of African Unity
OCEAC  Organisation de Coordination pour la lutte contre les Endemies en Afrique Centrale
OCP  Onchocerciasis Control Program of West Africa
OPV  Oral Polio Vaccine
OTD  Other Tropical Diseases
PB  Pauci-Bacillary
PCR  Polymerase Chain Reaction
PEI  Polio Eradication Initiative
PLWHA  People Living With HIV/AIDS
PSI  Population Services International
RBM  Roll Back Malaria
RPA  Regional Program on AIDS
SADC  Southern African Development Community
SATCI  South African Tuberculosis Control Initiative
SIA  Supplemental Immunisation Activities
SRWG  Sub-Regional Working Groups
STD  Sexually Transmitted Disease
STH  Soil Transmitted Helminths
STI  Sexually Transmitted Infection
TB  Tuberculosis
TDR  Tropical Disease Research
TT  Tetanus Toxoid
ULR  Update Leprosy Registry
UN  United Nations
UNAIDS  Joint United Nations Program on HIV/AIDS
UNFPA  United Nations Population Fund
UNGASS  United Nations General Assembly Special Session on HIV/AIDS
UNHCR  United Nations High Commission for Refugees
UNICEF  United Nations Children’s Fund
US  United States
USAID  United States Agency for International Development
VBC  Vector Biology and Control
<table>
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>VCT</td>
<td>Voluntary Counselling and Testing</td>
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<tr>
<td>VPD</td>
<td>Vaccine Preventable Disease</td>
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<tr>
<td>VVM</td>
<td>Vaccine Vial Monitoring</td>
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<tr>
<td>WATCI</td>
<td>West African Tuberculosis Control Initiative</td>
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<tr>
<td>WHA</td>
<td>World Health Assembly</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WHO/AFRO</td>
<td>World Health Organization-Regional Office for Africa</td>
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<tr>
<td>WHO/HQ</td>
<td>World Health Organization/Headquarters</td>
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<tr>
<td>WHR</td>
<td>World Health Report</td>
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<tr>
<td>YF</td>
<td>Yellow Fever</td>
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Communicable diseases account for a large proportion of mortality, morbidity and disability in the African Region. This Report describes the magnitude of these diseases in the Region, and the activities, achievements and future directions of the Division of Prevention and Control of Communicable Disease (DDC) of the WHO-Regional Office for Africa. The mission of DDC is to provide technical orientation and support to countries of the Region based on the resolutions and recommendations of the Governing Bodies regarding the prevention and control of communicable diseases. These include the elimination of leprosy and neonatal tetanus, the control of measles, the eradication of poliomyelitis and Dracunculiasis and the elimination or eradication of any other communicable diseases. Close to 3.4 million new infections of HIV occurred in 2001, bringing to 28.1 million the total number of people living with HIV/AIDS in the Region. Within the context of health sector reform, WHO/AFRO has supported countries to intensify and decentralise their health system responses to the epidemic. Achievements have been made in strengthening Member States’ capacity to expand programs for HIV/AIDS surveillance, prevention and care.

Tuberculosis remains an important cause of adult and childhood morbidity and mortality in the African Region. It kills over 600,000 people each year in Africa, making tuberculosis one of the most common preventable causes of death from a single infectious agent. The Regional strategy for the control of tuberculosis was revised and implemented to address the new challenges posed by the TB/HIV dual epidemic. A revised strategy was also in response to the growing need to expand rapidly implementation of the DOTS strategy, using innovative approaches such as community involvement. To date, about 40 countries (85%) are implementing the DOTS strategy, although only 20 countries (44%) have achieved nation-wide coverage.

Malaria is a major public health problem in Africa today. The population prone to malaria epidemics and non-immune to the malaria parasite is around 110 million. An estimated 270-480 million cases of the disease occur in the continent annually. This amounts to about one million deaths, representing 90% of global malaria deaths. Thirty-six of the 42 endemic countries have developed capacity to plan and implement, monitor and evaluate malaria control activities. Correct case management of malaria cases has been ensured in 27 of the 42 endemic countries. Capacity has also been built in all 18 epidemic-prone countries to forecast, detect early and respond adequately to malaria epidemics.

Five major tropical diseases – human Africa trypanosomiasis, lymphatic filariasis, schistosomiasis, soil-transmitted helminths and onchocerciasis – are responsible for a substantial proportion of disease burden in the African Region. Using Regional strategies developed for these diseases, seven countries have prepared national plans for control of schistosomiasis, and three are already implementing their plans for control of trypanosomiasis. Lymphatic filariasis mapping is either completed or ongoing in nine countries, five of which have implemented mass drug administration. Onchocerciasis devolution project has been successfully reinforced in six countries in collaboration with the African Program for Onchocerciasis Control. Implementation of the WHO/AFRO Dracunculiasis Eradication Program, in partnership with Member States and donors, resulted in a 98% reduction in the annual incidence of the diseases between 1989
1989 and 2001. The number of endemic countries has also decreased from 16 to 12.

A Regional program for vector biology and control has been established and a framework for development and implementation of vector control interventions developed. A training course focusing on insecticide resistance testing, monitoring, and management was developed and implemented in 25 countries.

Vaccine preventable diseases (VPD) are major causes of morbidity, disability, and mortality among children in the African Region. Annually, there are 445,000 deaths from measles, 110,000 from maternal and neonatal tetanus, 106,000 to 190,000 from pertussis, 30,000 from yellow fever and 150,000 from Hib diseases. The earlier observed declining trend in EPI coverage has largely been reversed, with most African countries recording increasing coverage. To date, 32 countries have long-term plans to strengthen routine EPI, control measles, eliminate maternal and neonatal tetanus and introduce new and under-utilised vaccines in the routine program. Member States are achieving communicable disease eradication and elimination goals, particularly the eradication of polio and the elimination of neonatal tetanus. All 32 polio-endemic countries have successfully implemented National Immunisation Days (NIDs) and established surveillance of Acute Flaccid Paralysis (AFP). AFP surveillance has dramatically improved, reaching a non-polio AFP rate of 2.7 cases per 100,000 children aged 15 years or above.

Each year in Africa, three million children die from the effects of disease and malnutrition. Of those who survive, many are unable to grow and develop to their full potential. More than 70% of these childhood deaths are due to just six main causes: acute respiratory infection, diarrhoea, measles, malaria, HIV infections and malnutrition. In addition, about 80% of the children who visit health services suffer from at least one of these conditions. Forty of 46 countries have adopted the Integrated Management of Childhood Illness (IMCI) strategy and have national plans of action at different stages of implementation. Introduction of the IMCI strategy into more than 20 pre-service medical and paramedical training institutions in four countries has sustained implementation of the strategy. IMCI health facility surveys conducted in four countries show that IMCI-trained health workers provide quality case management, correctly managing between 70-80% of children.

Throughout history, those affected by leprosy have often been ostracised by their communities and families. Of all the diseases, leprosy has the most notorious history as a cause of deformity, disability, loathing and fear. The elimination of leprosy has been validated in nine countries, and the regional prevalence has dropped to 0.98 cases per 10,000 inhabitants from 1.29 in 1999.

Effective communicable disease control relies on effective surveillance and response systems. In Africa, the last two decades have been characterised by the recrudescence of epidemic-prone diseases and the emergence of new diseases. All Member States have received technical guidelines on Integrated Disease Surveillance and Response (IDSR) and assorted training materials. Twenty-seven countries have been assessed for existing surveillance and epidemic preparedness and response systems; 12 countries have initiated implementation of IDSR.

Research in communicable diseases is important in order to formulate and shape policies and strategies, to expand the frontiers of knowledge about these diseases and to inform leaders and the public. Several countries have built capacity in planning, implementing, evaluating, and disseminating research findings to influence strategies and policies in communicable disease interventions, particularly in the areas of malaria, HIV/AIDS, tuberculosis, schistosomiasis, lymphatic filariasis and Buruli Ulcer.
Introduction

High rates of premature mortality, diseases, and disabilities characterise this Region more than any other region in the world. By far, the most important causes of death and disability in Africa are communicable diseases, accounting for about two-thirds of the burden of disease. These diseases occur primarily among the poorest people who do not have access to drugs and commodities necessary for prevention and cure.

More than 95% of communicable disease mortality can be attributed to a few diseases – HIV, malaria, respiratory infections, vaccine-preventable diseases, diarrheal diseases, and tuberculosis. In addition to suffering and death, these diseases penalise poor communities, as they perpetuate poverty through work loss, school drop-out, decreased financial investment and increased social instability – creating sizeable social and economic costs.

The ravages of communicable diseases are made worse by the huge increase in population movements due to civil strife and political conflict. Not only are refugees and displaced people especially vulnerable to infectious diseases, but also their movement can help spread infectious disease into new areas. Wars usually result in the destruction of health infrastructures that may have existed. Furthermore, vaccination and outbreak response teams are unable to reach populations for security reasons.

The growth of densely populated cities with unsafe water, poor sanitation and widespread poverty has created the perfect breeding ground for outbreaks of disease. Alteration of the environment, whether natural or human-made, contributes to the emergence and re-emergence of infectious disease. The alterations range from global warming and the resulting extension of vector-borne diseases - to ecological changes due to deforestation and agricultural development. Such changes favour the spread of mosquitoes and other vectors and parasites and lead to major disease outbreaks.

National leaders and development agencies are increasingly recognising that communicable diseases are a matter of national security: sustainable development is feasible if countries can control these diseases that disempower their people. If these diseases continue unchecked, they damage the social fabric, diminish agricultural and industrial production, undermine political, social and economic stability, and contribute to regional and global insecurity.
Effective control strategies are available to reduce the mortality and morbidity due to communicable diseases. These include: insecticide treated bednets and appropriate treatment strategies against malaria; directly-observed treatment, short course (DOTS) for the control of tuberculosis; integrated management of childhood illness (IMCI); use of vaccines against childhood illness; HIV-prevention and care strategies; intensification of measures to eradicate polio and guinea-worm disease and to eliminate leprosy; integrated vector control strategies; and, expansion of surveillance and response systems.

The WHO African Region consists of 46 countries with a total population of close to 640 million. The Division of Prevention and Control Communicable Diseases in WHO – Regional Office for Africa spearheads the Organisation’s efforts to assist Member States to control these diseases. It provides technical support to countries:

- in the setting of norms, standards, guidelines and tools for communicable diseases prevention and control;
- in activities related to communicable diseases surveillance, including strengthening laboratory capacities;
- for the management, implementation, monitoring and evaluation of communicable disease activities; and
- in epidemic preparedness, prevention and control;

The Division also has the following functions:

- development of computerised database for the surveillance of communicable diseases of major public health importance;
- development and promotion of information sharing on communicable diseases through the periodic publication of the Regional Epidemiological Bulletins; and,
- provision of support to countries in poliomyelitis and guinea-worm eradication, elimination of leprosy, neonatal tetanus and control of measles and yellow fever and the elimination or eradication of any other communicable diseases.

This Report is designed to provide information to Member States and partners on the annual status of communicable diseases in the Region. It attempts to show the magnitude and seriousness of communicable diseases that the various units in the Division address, and to describe their activities and achievements. Additionally, their constraints and future directions are also presented. The Report is formatted into several chapters with each chapter dealing with a particular unit of the Division. It is the intention of the Division to prepare and publish a similar report every year.

There are nine Units within the Division of Prevention and Control of Communicable Disease, WHO/AFRO, 2001.

DIVISION OF PREVENTION AND CONTROL OF COMMUNICABLE DISEASES
- Regional Program on AIDS (RPA)
- Tuberculosis Control
- Leprosy Elimination
- Malaria Control
- Other Tropical Diseases Control (OTD)
- Vector Biology and Control (VBC)
- Vaccine Preventable Diseases (VPD)
- Integrated Management of Childhood Illness (IMCI)
- Communicable Disease Surveillance and Response (CSR)
HIV/AIDS

HIV/AIDS is the leading cause of mortality and morbidity in the African Region. Close to 3.4 million new infections occurred in 2001, bringing the total number of people living with HIV/AIDS in the Region to 28.1 million. In several African countries, about 10% of those aged 15 to 49 are infected, and in southern Africa, at least 20% are infected. An estimated 2.3 million Africans died of AIDS in 2001. The significant increases in child and adult mortality have resulted in falling life expectancies in several countries and reductions in the numbers of the economically active age groups. More than 12 million children, orphaned by HIV/AIDS, have been left in need of love, care and support. Providing them with food, housing and education will impose a huge burden on the resources of the countries for many years to come. HIV/AIDS has impacted negatively on household resources as functional capacity to work is reduced, medical expenses increased and the income of both the infected and the caregivers is lost, deepening poverty among affected households.

Sub-Saharan Africa has both HIV-1 and HIV-2 epidemics with HIV-1 being predominant, accounting for about 99% of the total number of infections. The largest proportions of HIV-1 infections are due to subtypes C and A. Although there is scanty information on the status and trends of STIs in the Region, an estimated 69 million new curable STI cases occurred in Africa in 2000. Apart from being serious diseases in their own right, STIs enhance the sexual transmission of HIV.

The extremely rapid spread of the virus has outpaced program interventions. National AIDS Councils are being established to lead and coordinate the multi-sectoral response, but their role may need to be clarified to minimize confusion with health system actions. Ministries of Health have faced the challenge of developing the health sector response, while advocating for and supporting commitment of other sectors. Data generated through existing surveillance systems could be better used for advocacy, targeting, planning, monitoring and evaluating the national response, the coordination of which still remains a major challenge in most countries in the Region. Health systems are challenged by the need to provide care and support to the millions infected and to contribute to prevention efforts aimed at vulnerable groups.

Figure 3. The trend of prevalence of HIV among adults in the African Region, 1984-1999

HIV/AIDS and STI surveillance systems in the Region have yielded essential information for monitoring trends of the epidemic. Yet, many countries have poorly functioning systems that...
need strengthening to provide accurate and timely data. Most people with HIV do not have access to antiretroviral therapy. Countries have not benefited from the increased survival rates and from the reduction in incidence associated with antiretroviral drugs because of their high cost. In some countries, drugs for the treatment of opportunistic infections and STIs are not always available despite their inclusion in the essential drug list.

The response of WHO/AFRO

The Member States of the WHO African Region adopted the Regional HIV/AIDS Strategy (Resolution AF/RC46/R2) during the 46th Session of the Regional Committee in 1996. In 2000, the Member States adopted its Framework for Implementation (Resolution AF/RC50/11) during the 50th Session of the Regional Committee. The resolutions reaffirmed the major role of the health sector in any national response to the HIV/AIDS epidemic. The objective of the strategy is to contribute to the reduction of HIV/AIDS mortality and morbidity through a strong health sector response within multisectoral action.

WHO/AFRO strives to contribute to the prevention and control of HIV/AIDS and STIs in the African Region. By providing technical support and catalytic funding to countries, WHO/AFRO supports countries to strengthen their national capacity to adopt appropriate policies, plan, implement, monitor and evaluate health-sector based HIV/AIDS and STI activities. These actions are expected to contribute to the reduction of HIV transmission, improvement of access to quality care and support for people living with HIV/AIDS and mitigation of the impact of HIV/AIDS on the health sector.

Achievements

The HIV/AIDS control program areas include: program management support; surveillance and monitoring; care and support including the use of ARVs; laboratory services–Regional Network for HIV/AIDS Public Health Laboratories; and, STI treatment and prevention.

Program development support: Within the context of the UN system-wide action on HIV/AIDS, WHO/AFRO supports countries to intensify and decentralise their health system responses to the epidemic. Achievements have been made in strengthening Member States’ capacity to expand programs for HIV/AIDS surveillance, prevention and care.

WHO-AFRO supported five countries to elaborate plans on integration and decentralisation of HIV/AIDS/STI programs. In this regard, active promotion of the Framework for the Regional HIV/AIDS Strategy has contributed to decentralised management of HIV/AIDS programs. Another achievement was in resource mobilisation and strengthening of partnerships, notably the Italian Initiative on HIV/AIDS in Africa, which provided US$8 million to 10 countries.

Twenty inter-country meetings and expert consultations have resulted in technical policy updates, inter-country exchanges of best practice and experience and expanded consultant networks. Support was also provided for international advocacy and mobilisation, notably for the OAU Heads of State’ Summit on
HIV/AIDS, TB and Other Infectious Diseases. The OAU Declaration emanating from that Summit was a major policy directive at the highest level.

A Regional Consultation on HIV/AIDS strategy was conducted to strengthen health sector response to the epidemic within multisectoral national plans. The consultation identified critical elements of the health sector response to the epidemic and these elements then helped define an essential package of interventions for the health sector. Steps for countries to operationalise the Regional HIV/AIDS strategy were also developed.

An inter-country meeting on monitoring the Italian Initiative equipped the participating countries with a better understanding of the requirements for follow up, monitoring and reporting for the Initiative. Proposals for implementation of the activities under this initiative were developed, and 10 countries began implementation.

The OAU Secretariat received support to develop mechanisms for monitoring and reporting on the Abuja Declaration on HIV/AIDS, TB and Other Infectious Diseases. WHO/AFRO co-sponsored the International Conference on AIDS/STI in Africa held in Burkina Faso in December 2001.

Surveillance and monitoring: The objectives of surveillance and monitoring are: to strengthen the capacity of national health authorities to adopt policies and plans for implementation and evaluation of HIV/AIDS and STI surveillance activities; to provide technical support to countries to monitor the spread of the epidemic; and, to strengthen the collaboration between AFRO, national institutions and international partners in improving HIV/AIDS and STI surveillance. Strategies used to attain the objectives are: development of policy guidelines and training modules; provision of feedback on country proposals and reports, organisation of country technical support missions; maintenance of the technical network on HIV/AIDS/STI surveillance; conduct of inter-country meetings of national implementers; and preparation and dissemination of HIV surveillance reports.

To help build comprehensive and accurate databases on the HIV and STI situation in countries, three inter-country meetings on second-generation HIV surveillance were conducted. WHO/AFRO country epidemiologists, NPOs and DPCs, and national epidemiologists/surveillance officers for surveillance participated in these meetings.

Technical support missions visited 14 countries. These missions resulted in the preparation of country plans for second-generation HIV surveillance and the provision of catalytic funds for start-up activities.


Care and support: The objective of this activity is to improve the quality of treatment, care and...
support/counselling for people living with HIV/AIDS by delivering services within a continuum from the home to the hospital. The strategies employed are to: improve access to treatment, including with ARVs; strengthen community and home-based care services; and, collaborate with training institutions and regional networks to strengthen training and practices of health workers in HIV/AIDS care and counselling.

Technical support was provided to Ethiopia, Kenya, Lesotho and Swaziland for development of plans for HIV/AIDS care, including ARV treatment, and production of guidelines and training materials. The support was provided in collaboration with the UNAIDS Secretariat as part of the initiative for accelerating access to ARVs.

A workshop on strengthening and monitoring the HIV/AIDS HBC Kit initiative in the African Region was conducted for 14 countries. Consultants were briefed on the monitoring of C/HBC using a monitoring tool. This work will result in the design of a kit for mass production and the strengthening of home-based care programs.

WHO/AFRO organised a consultation on HIV/AIDS counselling in which experts from 12 countries, representatives of sub-regional training institutions and development partners participated. A review of HIV/AIDS counselling training and service provision within health systems was carried out and a strategy formulated for improving basic counselling training and individual, family and community counselling services related to HIV prevention and care. Modalities for strengthening collaboration between WHO/AFRO, regional training centres and counselling associations were also agreed upon.

As an outcome of this consultation, WHO/AFRO, in collaboration with the Zambia Counselling Council, organised a regional training of trainers workshop on HIV/AIDS counselling, with participants from nine countries. A manual on counselling training is now being revised and updated and will be available for use by these trainers. Plans were also developed for Eastern and Southern African Counselling Associations (ESACA) to support national counselling associations in monitoring the quality of counselling training programs and services in countries. Swaziland received technical support for development of national policy and training guidelines and a rollout plan for VCT.

Prevention of HIV/AIDS in health care settings was emphasised. Malawi, Tanzania and Zim-
babwe received technical and catalytic financial support for needs assessment and development of policy guidelines and training programs in infection control. As other countries develop this intervention, which is essential for reducing the impact of HIV/AIDS in health systems, an assessment tool for infection control is now available for use.

The Department of Nursing of the University of Zimbabwe got technical and financial support from AFRO to conduct an operational research on “Nurses involvement and capacity building to provide clinical care for the management of HIV/AIDS patients.” Based on the findings, a research report and plan of action for the review and revision of nursing curriculum were prepared. This experience will serve as a model for adaptation in other countries.

**STI treatment and prevention:** Following the training of trainers on STI case management by the syndromic approach organised in 2000, Burkina Faso, Ghana, Guinea, Lesotho, Malawi, Mali, Niger, Togo and Zambia were visited to assess implementation of the recommendations made during the inter-country workshops. Following these visits, the Regional Office was able to provide specific support to the countries to strengthen their STI programs.

Nine countries participated in an inter-country workshop on the integration of STI into reproductive health services, in collaboration with DRH. WHO/AFRO, in collaboration with UN-AIDS and Centre de Cooperation Internationale en Santé et développement (CCISD), organised a workshop on reinforcement of STI prevention and care within the sex work industry. The outcome is development of a strategy on HIV prevention and care for vulnerable groups, which is currently ongoing.

**Laboratory services:** The Regional Network of HIV/AIDS Public Health Laboratories was established as a result of a regional workshop organised in 2001 in collaboration with CDC GAP. The purpose of the network is to improve the overall capacity of public health laboratories in diagnosing and monitoring HIV/AIDS in the Region. The network will promote common approaches on policy, procedures and information systems, exchange of technical expertise between institutions and exchanges of information among members. The network will also promote and undertake advocacy and resource mobilisation for laboratory services, a relatively under-funded area of great importance for several HIV/AIDS prevention and care interventions. Since its inception, the network has stimulated and facilitated the development and effective dissemination of several tools and guidelines by AFRO.

A workshop to improve quality assurance for HIV diagnosis agreed on a plan of action for 2002-2003. An inventory of laboratories in Africa involved in genotypic and phenotypic HIV-1 testing of antiretroviral drug resistance was prepared. This is an essential activity in preparation for strengthening regional capacity to monitor efficacy of ARV treatment. Technical support was also provided to Ethiopia for HIV screening in the blood bank, to Uganda on harmonisation of HIV testing kits and to se-

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**Figure 6:** The proportion of HIV-1 envelope subtypes in the African Region, 2000
lected countries to monitor and evaluate the implementation of distance learning.

**Partnerships**

In an innovative new partnership, the government of Italy and WHO have joined forces to support countries in scaling up their efforts in the fight against HIV/AIDS. The two-year US$8 million WHO/Italian Initiative on HIV/AIDS in Africa was launched in February 2001. The main objective of the initiative is to support national efforts against HIV/AIDS in sub-Saharan Africa. Ten countries are scaling up key health sector interventions set out in their National Strategic Plans. The initiative is taking place within the multi-sectoral and multi-level context of the International Partnership against AIDS in Africa (IPAA), and involves partnerships with UN organisations and agencies, including WFP, international institutions and Italian and local NGOs.

Within the context of IPAA, the World Bank and the African Development Bank (ADB) provided support to AFRO for implementation and monitoring of interventions for HIV/AIDS prevention, care and impact mitigation in selected countries. In 2001, the implementation of activities under the support of the ADB was initiated in all four participating countries. Through this support, AFRO provided catalytic funding to NGOs for innovative activities in HIV/AIDS care.

Following an agreement by WHO/AFRO and CDC to collaborate in implementing some components of the CDC GAP Initiative, USAID amended an existing Cooperative Agreement and provided resources for HIV/AIDS control activities to be implemented by WHO/AFRO.

Activities implemented within this partnership include: a review of HIV surveillance systems and activities in countries; preparation of a Strategic Framework for Strengthening HIV/AIDS Surveillance in the Region; and development of a Regional HIV/AIDS Laboratory Network.

**Challenges**

The main challenge to the Unit’s activities was the inadequate funding available in countries for health system activities in HIV/AIDS. The lack of key inputs such as drugs and HIV test kits has constrained the ability of country programs to benefit from technical support available from AFRO in such areas as HIV surveillance and care. Other constraints at country level are weak health systems, a lack of clarity of roles and, in some Member States, weakening Ministry of Health programs in the transitional period toward establishing multi-sectoral national HIV/AIDS commissions.

Other challenges were related to keeping the balance among planned activities, responding to the need for acceleration of support and maintaining an active role in international advocacy and mobilisation actions.

**Future directions**

Priorities for 2002-2003 will be on supporting health systems’ delivery of a package of care and prevention interventions at district and community levels. Networks of technical experts at country and sub-regional levels will be expanded and Member States supported in the application of technical tools for program planning and management. The HIV response in countries affected by complex emergencies will be expanded, building on actions initiated in 2000-2001.
Tuberculosis

Tuberculosis remains an important cause of adult and childhood morbidity and mortality in the African Region. An estimated 200 million persons in the region are infected with the tubercle bacillus, and approximately 1.6 million cases of infectious disease occur each year. The disease kills over 600,000 people each year in Africa, making TB one of the most common preventable causes of death from a single infectious agent. As a significant cause of premature mortality among the adult working population, TB makes a serious impact on general productivity and economic development. Morbidity from the disease contributes to absenteeism from work, loss of earnings and high costs of care. Productivity loses could also occur when adults leave work to care for sick children.

In several African countries, the number of reported TB cases has doubled or even trebled in the past decade, mainly due to the HIV epidemic. In most of these countries, the proportion of TB cases attributable to HIV infection ranges between 50% to 80%; up to 40% of deaths of people living with HIV and AIDS is believed to be due to TB.

Globally, TB strains that are resistant to a single drug have been documented in every country surveyed. Strains of TB resistant to all major anti-TB drugs also have emerged. The dreaded problem of multi-drug resistant TB (MDR-TB), however, has not yet become a major regional issue in Africa, although some focal areas exist in certain countries. Data from surveys in some countries in the Region show a range of between 1% and 5% MDR-TB rate.

Several factors including population increase and poor socio-economic situations prevailing in most countries are responsible for this high level of occurrence of TB mortality and morbidity. The HIV/AIDS epidemic is, however, the most important contributing factor, especially in Southern and Eastern Africa. Because of their suppressed immune systems, people co-infected with HIV and TB are many times more likely to develop active TB. Consequently, countries with high prevalence of TB and HIV co-infection feel the brunt of the rapidly deteriorating TB situation in the region.

Table 1: Estimated incidence rate (per 100,000) of TB in high-burden African countries, 2000

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>POPULATION</th>
<th>ALL CASES</th>
<th>SMEAR POSITIVE CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Rate</td>
<td>Number</td>
</tr>
<tr>
<td>Nigeria</td>
<td>113,862,000</td>
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<td>150,000</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>62,908,000</td>
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<td>South Africa</td>
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<td>93,000</td>
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<td>DR Congo</td>
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</tr>
<tr>
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<td>149,000</td>
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<tr>
<td>Tanzania</td>
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</tr>
<tr>
<td>Uganda</td>
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<td>35,000</td>
</tr>
<tr>
<td>Mozambique</td>
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<td>33,000</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>12,627,000</td>
<td>74,000</td>
<td>30,000</td>
</tr>
</tbody>
</table>

(Source: Global Tuberculosis Control - WHO Report 2002)

Figure 7: TB case notification rate (per 100,000) in the African Region, 2000
The response of WHO/AFRO
Since the early 1990s, WHO/AFRO has collaborated with Member States to revitalise TB control programs. This is evidenced by WHO/AFRO Regional Committee Resolutions of 1990, 1992 and 1994 calling for national and international action for effective policies, particularly to ensure that the WHO control strategy is adopted and implemented. In 1993, WHO declared TB as a global emergency. Since then, AFRO has taken measures at regional and sub-regional levels to prepare the ground for technical support to Member States to implement national TB control programs based on the DOTS strategy.

AFRO’s support to Member States has taken the form of: development and/or adaptation or provision of technical tools and advocacy materials; technical expertise to countries to undertake situation analysis and develop strategic programs and implementation plans; development of human resource capacity through organisation of training courses; provision of technical expertise to countries for monitoring and evaluation of control programs; supporting countries in mobilising needed resources from bilateral and multilateral partners to support country programs; development of capacity to carry out relevant operations research; and advocacy to governments and development partners to increase their investment in TB control.

Achievements
One of the key achievements has been the revision of the Regional Strategic Plan to incorporate, among others, the new challenge posed by the dual epidemic of TB and HIV. The objectives of the revised Strategic Plan are to: promote the accelerated implementation of the DOTS strategy in all Member States; contribute to the reduction in TB-related mortality, morbidity and transmission; support Member States to establish uniform surveillance systems; promote operational research aimed at improving the effectiveness of the DOTS strategy.

DOTS is the most effective strategy available for controlling the TB epidemic today. It has five main components: (1) government commitment to sustained TB control activities; (2) case detection by sputum smear microscopy among symptomatic patients self-reporting to health services; (3) standardised treatment regimen of six to eight months for at least all sputum smear positive cases, with directly observed therapy for at least the initial two months; (4) a regular, uninterrupted supply of all essential TB drugs; and (5) a standardised recording and reporting system that allows assessment of treatment results for each patient and of the TB control program performance overall.

Efforts so far have contributed immensely to the successful implementation of the DOTS strategy. To date, 40 countries out of 47 (85%) are implementing the DOTS strategy, although only 20 countries (43.5%) have achieved nation-wide coverage.

In the area of developing technical tools, AFRO has produced documents to provide guidance to Member States in various aspects of TB control. These documents include: “The TB/HIV dual epidemic: Guidelines on Supervision of National TB Control Programs”; “Framework for Collaboration between TB and AIDS Control Programs at Country Level”; and, “Framework for Teaching TB in Medical
Schools According to the Principles of the DOTS Strategy.”

Monitoring and evaluation of the epidemic and control activities are ongoing at country and regional levels. They include the use of a standardised recording and reporting system that captures total TB cases registered in a particular calendar year, broken down by type of disease, age and sex. They also provide treatment outcomes especially for new and retreated smear positive cases registered in a particular calendar year. The data also serve as input into the annual WHO Global TB report. Information in this database is shared with Member States as a feedback on the global data collection and analysis system started by WHO. This information provides a basis for forecasting regional trends of the epidemic. It also helps with the design and planning of appropriate interventions, and for monitoring and evaluation.

AFRO has provided technical guidance for the establishment of sub-regional TB control initiatives. These initiatives strengthen collaboration between countries within the same epidemiological block to harmonise their control efforts and harness their collective resources to combat TB. These sub-regional groups include the Southern African TB Control Initiative (SATCI) and the West African TB Control Initiatives (WATCI), and two inter-regional initiatives, namely, the Horn of Africa TB Control Initiative (HATCI) and the Maghreb TB Control Initiative. Recently, AFRO initiated a process to introduce the teaching of TB control according to the recommended strategy into the teaching curricula of medical schools in Member States.

AFRO has also facilitated improvement in communication between the region and some Member States by providing e-mail facilities.

With support from its collaborating partners, AFRO has been instrumental in carrying out studies on the operational feasibility and effectiveness of community TB care in several Member States. AFRO has compiled the lessons learned from this initiative into policy and technical guidelines to support countries to involve communities in implementing the DOTS strategy in a more cost-effective way.

AFRO is promoting collaboration between TB and HIV/AIDS control programs with the aim of achieving synergy and improved cost-effectiveness. It seeks to ensure: high-level agreement on an integrated approach for TB/HIV/AIDS control at country level; country/agency strategic plans with clear collaboration objectives and targets; coalition building for TB and HIV/AIDS control at Regional and country levels; harmonisation of packages for TB and HIV/AIDS care; improved laboratory support for both TB and HIV diagnosis and management; and improved access to anti-TB drugs, antiretrovirals and prophylactics.

Collaborations are expected to improve access to: TB care for people living with HIV/AIDS (PLWHAs); HIV/AIDS counselling and HIV testing services for TB patients; and antiretrovirals and basic health services for both groups of patients. Collaborations are also expected to lead to destigmatisation of both infections.
Partnerships
Globally, the Stop TB initiative has formed a coalition of partners to accelerate social and political action to stop the unnecessary spread of tuberculosis. The partnership works with public and private organisations at global, regional and local levels. Research institutions, industry and donors all play a role. Partners include international agencies, governmental and non-governmental organisations and civil society.

In the African Region two main partnership initiatives are being pursued. The first involves communities at all levels of countries in the delivery of DOTS services. The second involves the participation of private health care providers in the implementation of DOTS.

Challenges
Despite the achievements and initiatives outlined above, challenges and constraints still need to be addressed if control of TB in the region is to make significant progress. Major challenges include the following: TB continues to be a relatively low-profile disease not yet popular with politicians, decision-makers and even public health practitioners; insufficient government commitment to allocate proportionate resources for TB control; the raging HIV/AIDS epidemic, especially in the Eastern and Southern African sub-regions; weak health systems and poor coverage of basic health services in many Member States; limited resources due to the global economic recession and poor resource management; the challenges associated with implementation of health sector reforms; and, frequent political unrest and civil wars, with the attendant disruption of health services and infrastructure.

Future directions
To address these challenges, the TB Program will focus on building capacity for DOTS expansion at national, sub-regional and regional levels, using innovative approaches, such as community TB care, public-private mix and collaborative TB/HIV activities. It will also ensure regular availability of high quality anti-TB drug supplies at country level, sustain TB control in the context of health sector reforms and development, improve monitoring and surveillance; promote relevant program-oriented research and, increase political commitment and partnership development.

Expanding DOTS through community involvement: The Ugandan experience
The recent upsurge in TB cases in Uganda, mostly due to the HIV/AIDS epidemic, has led to overcrowded health units, an overstretched health system and staff frustrations. This situation is common to many countries facing the dual epidemic of TB and HIV/AIDS. In many districts of Uganda it is complicated further by high TB treatment interruptions and low treatment success rates. To address this new challenge to TB control, the Ugandan government adopted the Community TB Care Initiative, promoted by WHO/AFRO, as national policy. This was after two years of piloting the approach. This approach consists of: (1) a flexible, culturally sensitive partnership between conventional health services and the communities served; (2) involvement of the community from the planning, implementation and evaluation stages; (3) full integration of the strategy into the existing health system at the operational level; (4) the use of fully oral and effective anti-TB drug combinations; and (5) having an in-built, flexible and acceptable referral system linked to the conventional TB recording and reporting system. Implementation of this approach proved to be effective, leading to an increase in the treatment success rate from 56% to 83% and a decrease in the treatment interruption rate from 23% to 2% within two years. The approach is currently operational in 11 of 56 districts and plans are in place to ensure nation-wide coverage by 2003.
Malaria

Malaria remains a major public health problem in Africa. The population living in areas at risk of malaria is about 500 million. The population prone to malaria epidemics and non-immune to the malaria parasite is around 110 million in 23 countries. An estimated 270-480 million cases of the disease occur in the continent annually. This amounts to about one million deaths, representing 90% of global malaria deaths.

Seventy per cent of these deaths occur among children under the age of five years. With acute malaria, a child may die within two hours without prompt and effective treatment. In endemic countries, women are more likely to have malaria during pregnancy than at any other time. Pregnant women with malaria are more likely to develop anaemia, and with severe malaria there is a higher risk of maternal death. Infants born to mothers with malaria are more likely to have low birth weight – the single greatest risk factor for death during the first month of life.

Population movements, such as seasonal workers and refugees into malaria endemic regions and countries, are causing major disease outbreaks and impacting on economies in some countries of the Region. Malaria is a major killer of refugees and displaced persons in Africa. Agricultural development projects, through deforestation and irrigation, have altered the environment and have also affected transmission of malaria. Development projects in hydroelectricity, mining, industry, and agriculture have created ecological changes, increasing mosquito contact with humans, many of whom had no prior exposure to malarious mosquitoes, and hence natural immunity.

Resistance of the malaria parasite to chloroquine is spreading, thus the cheapest anti-malaria drug is rapidly losing its effectiveness in many endemic countries. There are also reports of increasing multiple-drug resistance to drugs other than chloroquine, such as amodiaquine, mefloquine, and Fansidar, rendering treatment of malaria even more problematic. The combination of factors relating to the environment, population movements, and drug resistance has resulted in a serious difficulty to the control of malaria in the Region.

Malaria causes death, reduced productivity in agriculture, affects tourism and external investments. Malaria is a major contributing cause of poverty and absenteeism from work and school in endemic areas. It may account for loss of up to 5% of the gross domestic product (GDP). The cost of malaria control and treatment drains Africa’s economies. Endemic countries have to use scarce hard currency on drugs, nets and insecticides. Multi-national firms choosing the location of foreign investments shun regions with high transmission rates of malaria.

![Figure 9](Image)

Figure 9: Mortality (graph on top) and burden of disease (DALYs lost) due to malaria in the African Region, 2000

Source: WHR, 2001
The response of WHO/AFRO

In the 1950s and early 1960s programs were organised to eradicate malaria. Initially these programs were largely successful; in many countries, however, success was short-lived because the vectors often developed resistance to the pesticides in use. Suspension of eradication programs eventually led to a return to significant levels of disease transmission.

When properly used, currently available interventions are cost-effective in reducing the malaria burden within poor communities. The malaria burden could be significantly reduced through the detection of – and rapid response to – epidemics, the use of insecticide-treated bed nets, early diagnosis, and prompt effective treatment of malaria cases. Sustained availability of these interventions requires effective health sectors able to empower communities to tackle a range of priority health problems.

In July 1998, the Director General of WHO established the Roll Back Malaria (RBM) project in response to unprecedented levels of support and efforts to control malaria by political leaders and development agencies. In the same spirit, a special Summit of Heads of State and Government held in Abuja, Nigeria, adopted the “Abuja Declaration” and a plan of action for malaria control in Africa. The Abuja Declaration set outcome targets to be achieved by 2005 as follows: 60% of the population in endemic countries should have access to appropriate treatment; 60% of pregnant women should have access to malaria prevention and 60% of children under five and pregnant women should sleep under insecticide-treated nets (ITNs).

To further facilitate implementation of RBM at country level, the WHO African Regional Committee in August 2000 adopted a Framework for the implementation of RBM in the Region. An adaptable guide has also been made available to countries to accelerate RBM implementation at district levels in the African Region. The objective of RBM in the African Region is to reduce mortality and morbidity. The RBM global targets are to halve malaria mortality and morbidity by the year 2010 with further reduction of the morbidity and mortality figures by 50% and 70% respectively by 2015. These levels will be further reduced by another 50% by 2025 and by 80% by 2030. By then malaria will no more be a major public health problem in the Region.

The seven pillars of RBM implementation are: ownership; contributing to health sector reform and socio-economic development activities; integrating malaria control activities into primary health care; increasing the coverage of cost-effective technical interventions; building and strengthening partnerships; strengthening community participation; strengthening health information system and research; building and strengthening collaboration among neighbouring countries.

Cognisant of these facts, regional and global strategies for malaria control were developed in 1991 and 1992, respectively. The World Bank and WHO/AFRO decided to develop long-term collaboration on malaria control in 1995. The political support given to malaria control during the OAU Summit in 1997 led to the establishment of the African Initiative for Malaria Control in the 21st Century in 1998.
Achievements
Capacity development: The need to develop skills in managerial, advocacy, and partnership building alongside technical skills is well recognised. National control programs now place greater emphasis on human resource development. RBM National Professional Officers are in place in 22 countries to support program implementation. The Region has successfully and regularly run the “RBM International Course on Malaria and Planning its Control” for Anglophone and Francophone countries annually. It started a Lusophone course in 2000.

Drug policy and case management: The major achievements are: development of a framework for guiding countries faced with increasing resistance to commonly used antimalarial drugs to develop, implement and update national antimalarial treatment policy. Eleven countries have updated antimalarial treatment policies due to high level of chloroquine resistance, and 37 countries have capacity to monitor drug resistance.

Updated training manuals on case management have been developed in collaboration with the IMCI unit and are in use in 16 countries. In 30 countries, 126 trainers have been trained in case management and supervision. A pool of 37 consultants trained to provide technical support to countries for the conduct of case management training and supervision, have been made available. Cascade training in case management and supervision to the district level is ongoing in 16 countries.

Home based treatment of malaria: RBM has provided countries with technical assistance to implement large-scale programs on home management of fever/malaria episodes. Eighteen countries are specifically promoting the home management approach and have included the strategy in their countries’ strategic plans to roll back malaria. Several countries, including Burkina Faso, Ethiopia, Ghana, Nigeria and Uganda, are now ready to move from small-scale projects to large-scale implementation.

Sixteen countries have participated in two inter-country workshops on community-based interventions for malaria control. Currently, 12 countries have received technical support for development and implementation of community-based activities.

Promotion and use of ITNs: The Regional Director’s initiative to provide ITNs to target groups is now ongoing in 40 countries. Two training courses on monitoring and management of malaria vector resistance to insecticides have been held with participants from 14 countries. More countries are undertaking measures to increase affordability of nets through reduction and/or waiver of taxes. International partners (UNICEF, USAID, World Bank, UNHCR, PSI) support efforts for the promotion of ITNs in countries. Long lasting insecticides treated nets have been developed and are currently being field-tested in three countries.

Operational research: Linkages have been established and consensus built between the Region, research and funding agencies and malaria control programs in the area of opera-

Figure 10: Use of insecticide treated nets among under fives and pregnant women in selected countries, 2001
tional research. The Multi-lateral Initiative on Malaria and WHO/TDR are examples.

The capacity to conduct operational research in malaria was strengthened in 32 countries. As a result, 40 operational research projects were developed, 24 of which have been funded and are being implemented. Protocol for assessing the economic burden of malaria has been developed and 15 countries are preparing to undertake such studies. A multi-centre study on severe malaria conducted in 12 collaborating sites in 10 countries has been completed and its results are being published.

Monitoring and evaluation: The goal of monitoring and evaluation in the Region is that all countries establish functional systems at national and district levels for measuring changes in malaria morbidity and mortality, in addition to related milestones set by RBM and the Abuja Declaration and Plan of Action. Consensus has been built on impact, outcome, and process indicators to be used. Guidelines and tools for data collection and analysis have been developed and disseminated to countries. Twenty-two countries received support for baseline data collection, establishment of sentinel districts and capacity building at country level for regular monitoring and evaluation. Thirteen countries have completed base-line data collection, which is being processed into a regional database. Data are being used to develop country strategic plans and for advocacy for resource mobilisation.

Partnerships
Activities in this area have been successful in engaging a wide range of partners at all levels, including the private sector. Resource mobilisation was enhanced with support from DFID, USAID, World Bank and Africa Development Bank and most bilateral agencies and NGOs in the region. The development of country strategic plans provided an opportunity to establish country partnerships. Twenty countries have completed their strategic plans, which all local partners have endorsed. Twelve countries conducted partners’ roundtables to mobilise resources. They received pledges from government and country health partners covering, on average, 26% of the required budget.

Collaboration between RBM and IMCI began in the African Region in 1996. The two programs share the same goal of “reducing childhood morbidity and mortality in children under five years of age.” Some of these common features involve training health workers and other agents, supervising health facilities, ensuring the availability of essential drugs and improving working environments. The original collaboration has expanded to operations at country level. A joint task force on RBM and IMCI met twice in 2000-2001 and recommended specific approaches for reducing malaria and other childhood diseases.
Challenges
The RBM inception and implementation process has faced a number of challenges. Some of these challenges are how to: fully engage and sustain the private sector in the country partnerships; develop, strengthen and maintain the human resources base at all levels of planned activities; increase the treatment and re-treatment rates of available nets; operationalising combination therapy in the Region; accelerate the process of drug policy change and implementation; strengthen the national health information management systems/IDS to provide data on a routine basis for monitoring and evaluation purposes, and, ensure that mothers and caretakers have the capacity for prompt diagnosis and appropriate management of malaria and have ready access to antimalarial drugs.

Future directions
Key priorities for malaria control are to reinforce country capacity to scale up implementation, supervision, monitoring and evaluation of RBM interventions based on the national strategic plans developed during 2000-2001.

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### Summary of Regional RBM core indicators by data collection method

**Health Information System (HIS).**
- Mortality attributed to malaria
- Morbidity attributed to malaria among children under five (and other target groups, OTG)
- Case fatality rate for severe malaria among children under five (and OTGs) admitted to hospitals and health centres with inpatient facilities
- The proportion of malaria epidemics detected within two weeks of onset and properly controlled

**Health Facility Surveys**
- Percentage of children under five (and OTGs) with uncomplicated malaria properly managed at health facilities
- Percentage of children under five (and OTGs) admitted with severe malaria and correctly managed at health facilities
- The % of health facilities with no stock-outs of nationally recommended antimalarial drugs continuously for one week during the last 3 months.

**Community Surveys**
- The proportion of children under five (and OTGs) with a malaria/fever attack getting appropriate treatment within 24 hours
- The proportion of children under five sleeping under insecticide-treated nets
- The proportion of pregnant women (and OTGs) sleeping under insecticide-treated nets
- The proportion of households with at least one insecticide-treated net
- The percentage of pregnant women on intermittent antimalarial treatment or antimalarial chemoprophylaxis.

**Demographic Surveillance System (DSS)**
- Under-five mortality (all-cause) rate
- Under-five malaria mortality rate

**Modified Demographic Health Survey**
- Under-five mortality rate
Other tropical diseases

Five major tropical diseases – lymphatic filariasis, schistosomiasis, human Africa trypanosomiasis, soil-transmitted helminths and onchocerciasis – are responsible for a substantial proportion of disease burden in the African Region.

Lymphatic filariasis (LF), also known as elephantiasis, puts at risk more than 500 million people in Africa. Close to 28 million have already been affected by it, a substantial proportion seriously incapacitated and disfigured by the disease. The prevalence of infection is continuing to increase, because of rapid and unplanned growth of cities, which creates numerous breeding sites for the mosquitoes that transmit the disease.

Figure 14: Geographic distribution of lymphatic filariasis in the African Region, 2001

Schistosomiasis (sometimes called bilharziasis) is endemic in 41 countries in Africa, infecting more than 150 million people in rural agricultural and peri-urban areas. Of these, 10-15 million are symptomatic. In many areas, schistosomiasis affects a large proportion of children under 15 years of age. An estimated 300-400 million people in Africa are at risk from the disease.

Onchocerciasis (River Blindness) is one of the leading infectious causes of blindness, and is present in 30 countries in sub-Saharan Africa. An estimated 18 million people are infected, and of these more than 6.5 million suffer from severe itching or dermatitis and 270,000 are blind.

Soil transmitted helminths (STH), or intestinal worms, which include Ascaris (roundworm), Trichuris (whipworm) and hookworms, are
widespread. Transmission is intense among the poor in rural, peri-urban and urban slums where water and sanitary facilities are in short supply and hygienic practices are low. Of the two billion people (mostly children) affected worldwide, of the 300 million who are chronically ill, and, of the 155,000 who die annually, a large majority live in Africa. In children, STHs are associated with anaemia, wasting, stunting, cognitive impairment and lowered educational achievement, all of which, in turn, interfere with productivity and wage-earning capacity in adults.

**The response of WHO/AFRO**

WHO/AFRO has developed a Regional Strategy for elimination of lymphatic filariasis as a public health problem in Africa by the year 2020. The strategy underscores regular and maximal coverage of treatment of all persons living in the implementation unit, supported by improved hygiene and awareness to reduce acquisition of infection.

WHO/AFRO passed Resolution AFR/RC32 in 1982, which urged endemic countries to implement trypanosomiasis control. Two other resolutions later passed by the World Health Assembly endorsed the above WHO/AFRO Resolution (1983) and urged member states to reinforce control and surveillance activities.

WHO/AFRO has also instituted a regional strategy for the control of schistosomiasis based on the resolution of the World Health Assembly (WHA28.53, 1975). The objective is to reduce progression of schistosomiasis infections to advanced morbidity in young age groups using chemotherapy with Praziquantel and reduce development of additional complications of advanced morbidity among adult populations.

The Onchocerciasis Control Program (OCP) in West Africa was the first major program developed to control the disease. Launched in 1974, it originally encompassed seven West African countries; today, 11 countries are participating in it. The program has been jointly sponsored by WHO, World Bank, UNDP and FAO, and is supported by a coalition of more than 20 donor countries. WHO acts as the Executive Agency for the program.

The outstanding success of the OCP, when expressed in health, economic and development terms, was the motivating rationale for launching a new program, the African Program for Onchocerciasis Control (APOC) in December 1995. APOC shares the same co-sponsoring agencies and donors with the OCP. Unlike the OCP, however, APOC is non-vertical. Its objective is to establish, within 12 years, sustainable community-directed ivermectin distribution systems covering about 50 million people in 19 countries outside the OCP where onchocerciasis still is a serious public health problem.

For a long time, little attention has been given to STHs in African countries. However, the Executive Board of WHO recommended at its 107th session (January 2001) the adoption of repeated chemotherapy with safe, affordable drugs at regular intervals to keep infection with STHs below levels associated with morbidity, especially in children. It also sought the endorsement of systematic and regular treatment of high-risk groups, particularly school-age children, as the best means of reducing mortality and morbidity and improving health and development in affected communities. The Board urged member states to: sustain control
activities in low transmission areas in order to eliminate STH; ensure access to essential drugs against STHs, with the goal of attaining a minimum target of regular administration of chemotherapy to at least 75% of all school-age children at risk of morbidity by 2010; and promote access to safe water and sanitation through inter-sectoral collaboration.

Achievements
To address the control of these diseases, a unit for the control of tropical diseases other than malaria (OTD) has been established within the Division of Communicable Diseases in WHO/AFRO. The key issues addressed during 2000-2001 were: strengthening national capacity to assess disease distribution and control; supporting countries technically to develop national plans for disease control; and, developing regional strategies for disease control and guidelines for elaborating national plans for disease control for some of the target diseases. The diseases targeted were lymphatic filariasis (LF), schistosomiasis, soil-transmitted helminths, trypanosomiasis and onchocerciasis.

Two advances toward eliminating lymphatic filariasis are creation of a database and the Regional LF Elimination Program Review Group. Six countries in the Region have initiated LF elimination, with five of them implementing mass drug administration. In addition, 39 national experts from 19 countries were trained in methodology of mapping in three workshops conducted in collaboration with WHO/HQ.

In trypanosomiasis control, activities have been initiated to provide technical and financial support to three countries. To strengthen onchocerciasis control, programs in six countries of the Region received assistance in collaboration with APOC.

In the area of schistosomiasis control, seven countries have prepared national plans for control. Additionally, 15 national experts have been trained to serve as WHO consultants to strengthen the regional office’s capacity to assist countries.

Country activities in control of the Program’s target diseases are: the launch of mass drug administration for LF by the President of the Comoros in July 2001, which achieved up to 92% coverage; completion of LF mapping in five countries; implementation of mass drug administration (MDA) for LF in six countries; completion of rapid mapping of onchocerciasis in Central African Republic; and implementation of the national program for control of schistosomiasis and STHs in Uganda.

The Onchocerciasis Control Program in West Africa (OCP): Vector control activities are being applied as one of the most effective control tools in program areas. The results of entomological evaluation were largely satisfactory. Entomological surveillance conducted by national entomologists who received specialised onchocerciasis training was also satisfactory. The results confirmed the operational feasibility of such surveillance as conducted by national entomologists and the effectiveness of national black fly collection networks.
Aquatic monitoring, carried out by the national hydrobiological teams to advise the Program on the possible impact of larviciding on the aquatic fauna, showed overall satisfactory results. No disappearance of any entomofauna species was observed. Recolonisation by some taxa that had been affected by larviciding in the rivers no longer under treatment was recorded.

Community Directed Treatment with Ivermectin (CDTI) is now installed in all of the countries concerned with distribution. In all areas, community drug distributors (CDDs), trained by the district and regional teams, carry out treatment. In the past year, the CDDs treated more than seven million people in 20,000 villages and hamlets. The geographic coverage in the countries varied from 72.4% to 100%, with an average of 83%. The therapeutic coverage ranged between 51% and 82%.

Epidemiological/ophthalmological surveillance is ongoing. In 2001, 590 villages were evaluated in the OCP countries using the skin snip method; in some villages, the diethyl carbamazine (DEC) patch test was also used. The results obtained were excellent (prevalence of 0%) in most of the villages (Figure 17). The community microfilarial load (CMFL) was almost nil everywhere. The ophthalmological evaluations carried out in Ghana in 2000 had shown a regression of ocular lesions. No ocular microfilariae were detected.

The transfer of data-processing tools (equipment, programs and data) and appropriate skills to the countries has continued. OCP continued to support countries in their efforts to integrate the control of morbidity and detection of recrudescence of onchocerciasis into their national multi-disease surveillance systems. For the period under review, 30 fellowships in various fields were granted to nationals of the OCP countries. The Program has also organized several training sessions for the national teams on a continuous basis.

Challenges

Non-availability of donated drugs (or funds for drugs) and start-up funds are major constraints in implementation of control activities. For lymphatic filariasis, increasing demand for paying community-based drug distributors as well as the high cost of capital equipment (for example, vehicles) required by some countries could not be accommodated with funds available to the program.

Onchocerciasis is no longer a disease of public health importance in the OCP area. Nevertheless, it has not been eradicated. There is a need to remain vigilant through periodic and efficient entomological and epidemiological surveillance in order to detect any recrudescence and to take appropriate actions in time. Morbidity must be controlled by an efficient distribution of ivermectin with a geographic coverage of 100% and therapeutic coverage of at least 65% in each of the eligible villages. For this purpose, resources need to be made available and activities decentralised and integrated at the appropriate level into national health systems.
**Future directions**

The priorities for 2002-2003 are: continued implementation of the lymphatic filariasis elimination program; advocating and supporting initiation of national control programs for schistosomiasis, STHs and trypanosomiasis.

In the OCP, ivermectin distribution and entomological/epidemiological surveillance will continue. Emphasis will be on strengthening the skills of the national teams and on advocacy for the integration of the residual activities of onchocerciasis control into the countries’ national health systems.

**Dracunculiasis eradication**

Implementation of the WHO/AFRO Dracunculiasis Eradication Program, in partnership with Member States and donors, resulted in a 98% reduction in the annual incidence of the disease between 1989 and 2001. The number of endemic countries has also decreased from 16 to 12.

The main strategies being followed are: detection of all endemic localities; setting up active surveillance in each endemic locality; implementation of an information, education and communication system at the community level; promotion of filtration of unsafe water; provision of potable water supply to endemic areas; vector control by the application of Abate; and, management and containment of cases.

The success of the Dracunculiasis Eradication Program in decreasing the incidence of the disease to very low levels may have worked against its complete eradication. This is because in very low incidence communities the staff is now less motivated to continue active surveillance.

The main challenges to be tackled by countries and their partners for the eradication of Dracunculiasis are: to maintain and intensify social mobilisation and motivation of field workers and communities; guarantee prompt availability of adequate resources to national programs; strengthen inter-sectoral collaboration, especially with the water sector, to accelerate provision of water supply to endemic localities without potable water sources; and, ensure adequate surveillance and implementation of eradication interventions in insecure areas, nomadic zones or small hamlets.

The future direction in the Eradication Program will be to intensify coordination, increase follow up and technical support to strengthen national capacities.

![Figure 18: The trend in the number of reported cases of Dracunculiasis in the African Region, 1989-2001](image-url)
Vector biology and control

Vector-borne diseases (malaria, lymphatic filariasis, trypanosomiasis, schistosomiasis, onchocerciasis and others) account for a significant portion of the disease burden in the African Region. Of the 300 million global clinical cases of malaria and the one million malaria-related deaths, an estimated 80% to 90% occur in Africa. About 55 million people are at risk of trypanosomiasis. Although onchocerciasis is controlled in 11 West African countries, it is still a public health problem in 19 countries. Plague continues to be a problem in at least 11 countries and outbreaks have recently been reported. In many countries, leishmaniasis and lymphatic filariasis are endemic. There are 164 million people infected with schistosomiasis and 477 million people at risk of the disease. The incidence of guinea-worm disease has been dramatically reduced but substantial efforts are still needed in some countries.

Major outbreaks of yellow fever in several African countries have resulted in significant mortality and morbidity. Moreover, the widespread population movement, poverty and poor sanitation in African countries continue to foment the breeding of disease vectors. This situation is further compounded by the resistance of parasites to drugs, the resistance of vectors to insecticides, environmental modifications without taking into consideration the impact on health, the weakness of national epidemiological surveillance, inadequate public health services and other competing priorities.

In light of the above, the strategies to control vector-borne diseases should combine curative measures targeting the parasite, preventive measures including vector control interventions, and promotive measures targeting human behaviour modification. Because the primary objective of disease-control programs so far has been to reduce mortality, case diagnosis and treatment have received the greatest attention. Morbidity continues to increase nevertheless because of insufficient action to reduce the transmission of disease.

An analysis of the situation of vector-control programs in the Region has shown that most countries have no established vector control. The vector-control interventions that are implemented lack appropriate guidance and resources, focus mostly on malaria, and have limited technical guidance and insufficient resources.

Vector control is not new in Africa. In colonial times, it was carried out along with hygiene and sanitation activities in urban areas. Hygiene and vector control services were well organised and provided with adequate manpower, logistics and financial resources. When WHO was established, vector control was high on its agenda. After the 1970’s and for the subsequent two decades, interest in vector control

Figure 19: Vector-borne diseases account for a significant portion of the communicable disease burden in the African Region. Percent of the total Disability Adjusted Life Year (DALYs) lost in 2000

(Source: WHR-2001)
control waned, resulting in disruptions of control activities at all levels.

In Africa, two major public health programs mainly involving vector control -- the Pilot Project for Malaria Eradication and the Onchocerciasis Control Program -- have been implemented. Although eradication of malaria has not been successful, onchocerciasis has now ceased to be a public health problem in West Africa, where 35 million people are protected, and 500,000 potential cases of blindness have been prevented.

The response of WHO/AFRO
The 50th session of the Regional Committee for Africa adopted resolution AFR/RC50/R6 on a Framework for the Implementation of Roll Back Malaria in the African Region. Among other things, the resolution requests Member States to promote personal and community-based protective measures such as the use of insecticide-treated mosquito nets and environmental management.

The Regional Director established the Regional Program for Vector Biology and Control in March 2001. The Vector Biology and Control Unit, with six professional staff, began operating in May of the same year. Since the creation of the Program, a strategic framework for guiding implementation of activities has been prepared.

Achievements
Between January and June of 2001, more than 80% of the planned activities were initiated. The main achievements for that period were: 23 staff members of malaria control programs in 12 countries were trained in vector resistance monitoring and management, following which baseline data on vector susceptibility to insecticides were made available from 60 sites in seven countries; three staff members of control programs in two countries were trained in insectory management; a report on a framework for implementation of vector control based on an integrated vector management (IVM) approach was produced and disseminated; a guideline on monitoring and evaluation of ITN was translated into French and Portuguese and disseminated; an outline of a regional guideline on IVM was prepared; in collaboration with the USAID Environmental Health Project, a proposal on the support to countries in progressive reduction of reliance on DDT was endorsed by countries and submitted to the Global Environmental Facility (GEF) for funding; and information on the current vector control systems was made available to four countries.

For the second half of 2001, eight countries were selected for intensified support in selected districts for re-impregnation of nets and improved residual house spraying. Five countries achieved the following: in Eritrea, 116 community members in three administrative zones were trained in net treatment, allowing an increase in re-impregnation rates in these zones to 80% from the average of 20%; in Botswana, 20 spray persons and environmental health technicians were trained in spraying and net treatment; in Namibia, more than 80% of the 163 environmental health officers and environmental health assistants involved in the implementation and supervision of indoor residual spraying of insecticides in four health directorates were trained on insecticide application; in Cameroon, 26 community members were trained in net treatment, 20 impregnation centres were established and...
equipped with supplies, more than 40,000 doses of insecticides were provided and a mass campaign was undertaken and more than 60,000 nets were re-impregnated; in Chad, 35 staff members of the malaria control program were trained in net treatment, over 60,000 doses of insecticide were provided and a mass treatment campaign was organised.

To implement the Regional Director’s Initiative to provide ITNs free of charge to pregnant women and children under five years of age, data on specification of nets and insecticides were collected from 39 countries. In collaboration with WHO/HQ, these countries received 47,000 doses (tablets) of insecticide, 6,277 litres of insecticides and 267,500 nets.

Apart from these activities, Côte d’Ivoire has been supported to control a yellow fever epidemic, with vector control methods as one of the critical interventions. Eight technicians were trained on spatial insecticide application using thermo fogers, allowing spraying of the ten municipalities of Abidjan in a few days. In Togo, four technicians were trained in bioassay and susceptibility test techniques. In the Comoros, staff members were trained in vector control susceptibility test technique. In addition, baseline data on the susceptibility status of malaria vector were established, 15 sentinel sites were developed for continuous monitoring of vector susceptibility status, and baseline information on the status of ITN use in Angola and Mozambique was collected from representative districts.

Results of studies in West, East, Central and southern Africa revealed the need for close monitoring of the situation in order for malaria control programs to design appropriate management strategies should insecticide resistance be detected.

In the past two years, efforts have been made to build national capacities for testing, monitoring and managing vector resistance to insecticides. Despite these efforts, capacity remains weak in most African countries. To address this issue the African Network on Vector Resistance (ANVR) was established to ensure an effective and judicious use of insecticides in disease vector control in the African Region.

In 2001, ANVR focused its work on two major activities: capacity building for vector resistance testing, monitoring and management; and technical support to field epidemiologists for the assessment of vector resistance testing activities. The WHO training course on vector control, focussing on insecticide resistance monitoring and management, was initiated in 2000 and continued in 2001. The course was implemented in collaboration with two ANVR institutions, the Medical Entomology Department of the National Health Laboratory Services (Johannesburg, South Africa) and the Organization de Coordination pour la lutte contre les endemies en Afrique Centrale (OCEAC), Yaounde, Cameroon. Twenty-one field entomologists were trained in South Africa and Cameroon, bringing the total trained to 40 field entomologists from 25 countries of the Region.

Country needs for technical support were also assessed on the basis of national malaria control program action plans. Coordinators of the four sub-networks (West, Central, East and southern Africa) were subsequently requested to make experts available from ANVR institu-
tions for technical support to the identified countries. ANVR consultants supported 10 countries, with funding from WHO/AFRO, and made baseline information available on the susceptibility status of malaria vectors to insecticides in these countries.

**Challenges**
In some parts of Africa, the appearance of vector resistance to insecticides, particularly to pyrethroids, is challenging chemical control of malaria vectors. In many countries, resources allocated for vector control are still far from adequate.

**Future directions**
Some of the regional priorities for 2002 include: demonstrating the impact of vector control interventions on disease transmission; in selected settings, ensuring implementation of vector control activities based on IVM approaches with appropriate technical guidelines and resources; designing and implementing vector control projects with linkages to health delivery systems using existing structures; increasing ITN coverage in areas where untreated net coverage is significant; ensuring proper monitoring and evaluation of program implementation at all levels; providing more technical capacity building for monitoring and evaluation and follow up; and, intensifying support to the development and implementation of national ITN strategic plans.
Vaccine preventable diseases

Vaccine preventable diseases (VPD) are major causes of morbidity, mortality and disability among children in the African Region. Poor routine immunisation (EPI) performance is largely due to civil unrest, lack of resources and poor program management. This poor performance has resulted in more than one million deaths, attributable mainly to measles, Hib diseases, hepatitis B, pertusis, neonatal tetanus, meningococcal diseases and yellow fever. Annually, there are 445,000 deaths from measles, 110,000 from maternal and neonatal tetanus, 106,000 to 190,000 from pertusis, 30,000 from yellow fever and 150,000 for Hib diseases. Other factors contributing to these deaths are the stagnation of routine immunisation coverage at low to medium levels and the lack of adequate attention and support for the implementation of strategies aimed at eliminating neonatal tetanus.

Measles is the number one priority EPI disease in Africa. The sub-Saharan region accounts for 50% of all global measles deaths. Although efforts are being stepped up to ensure that polio is eradicated, problems remain. It is still widespread in a few countries like Nigeria and Angola.

Neonatal tetanus (NT) causes approximately 124,000 cases in the African Region annually. As the surveillance system is mostly facility based and most of the deaths occur at home, the reported disease incidence figures under estimate the actual disease burden. In 1999, five countries in the Region (Cameroon, Chad, DR Congo, Guinea and Nigeria) reported the highest number of cases, accounting for approximately 60% of all reported cases. NT is responsible for an estimated 14% to 25% of neonatal deaths and for at least 5% of maternal deaths annually. Most of the deaths occur in communities with poor access to health services and low socio-economic status. In 2000, four countries reported yellow fever outbreaks to WHO, and in 2001 another four reported outbreaks. The largest outbreak occurred in Guinea, involving 15 out of its 38 districts. There were 800 cases and 210 deaths.

From 1995 to 2001, 21 of the 46 Member States, accounting for nearly 67% of the population of the Region, reported a declining trend in immunisation coverage of at least 5%. Significant decline in coverage was observed in Equatorial Guinea, Ethiopia, Gabon, Gambia, Guinea Bissau, Madagascar, Mauritania, Senegal, Togo, and Uganda. Several countries with large populations (DR Congo, Ethiopia and Nigeria) and many in central Africa reported DPT-3 coverage level below 50% in 2000. The major reasons for the low coverage include low prioritisation of routine immunisation globally and at national level, coupled with civil unrest in many countries of the Region.

The response of WHO/AFRO

In September 1995, the Regional Committee endorsed resolution AFR/RC/R5, having considered the proposed strategies and activities
for each epidemiological block, as part of the Regional EPI plan of action for 1996-2000. This plan marked a shift from a focus on coverage as observed in the 1980s, to coverage and disease control. Member States have embarked on implementation of specific interventions aimed at achieving disease control (e.g. polio eradication, elimination of neonatal tetanus and accelerated measles control). These interventions include implementation of supplementary vaccination (e.g. national immunisation days) and expansion of enhanced surveillance activities.

The objectives of WHO/AFRO in this area are: to contribute to the achievement of the global goals of polio eradication, control of measles and yellow fever, and elimination of maternal and neonatal tetanus; to achieve and sustain routine immunisation coverage of at least 80% in all countries; and to enable Member States to introduce new and under-used vaccines, vitamin-A supplementation and related new policies and technologies into their routine immunisation programs.

Achievements

Immunisation system strengthening

The specific objectives of this program area are that by the end of 2005: at least 80% of the countries will attain minimum DPT3 coverage of 80% in all districts; all countries will attain 100% safety of immunisation injections; and, all countries will assure sustainable funding of EPI, particularly by increasing government funding through a budget line for immunisation in the national budget. The strategies to achieve these objectives include: political commitment, capacity building and training, coordination of EPI partners, program management, advocacy, social mobilisation and communication; and logistics and vaccine supply and quality.

The overall reported DPT3 vaccination coverage of infants increased from 55% in 2000 to 59% in 2001. The coverage levels vary by epidemiological blocks. Country variations are still substantial, ranging from around 10% in Guinea Bissau to 96% in Seychelles.

Planning, monitoring and evaluation: In 2001, 16 countries were selected for targeted support for immunisation system strengthening. The impact is yet to be assessed.

The EPI Strategic Plan of Action 2001-2005 was widely disseminated to Member States and EPI partners. A strategy document will be presented during the September 2002 Regional Committee of Ministers of Health for endorsement.

Capacity building and training: Mid-Level Management (MLM) modules were drafted, illustrated, pre-tested, finalised and translated into English and French. MLM training was conducted for 12 Anglophone countries and 11 Francophone countries. Forty-four trainers and 64 EPI managers were trained. Also, during the year, the unit participated and facilitated the Global Alliance for Vaccine Immunisations (GAVI) training workshop.

Social mobilisation and communication: Social mobilisation continued to focus on polio eradication during 2001. Several achievements also were noted in immunisation system strengthening. The increase in regional social mobilisation staff both at WHO and UNICEF resulted in better support to the countries through technical assistance. Networking with the GAVI Advocacy Task Force strengthened the part-
ners’ communication network. Communication sub-regional groups were established for central/western Africa and eastern/southern Africa. This decentralisation of expertise is expected to result in better support to the countries, especially in terms of strengthening strategies to improve routine EPI, including introduction of new vaccines.

**Logistics and vaccine supply and quality:** During 2001, vaccine management assessments and injection safety studies were conducted in many countries in all four epidemiological blocks. Assessment findings were presented at policy workshops, where participating countries committed to improving vaccine management, injection safety and increasing the qualification of national logisticians.

Immunisation safety and waste management was a major positive spin-off in all countries targeted for measles supplemental immunisation activities (SIAs). All countries were assisted to put in place systems for monitoring adverse events following immunisations.

More attention is being paid to cold chain refurbishment and maintenance because of the more expensive vaccines coming in with the GAVI initiative. WHO and Children’s Vaccine Program (CVP) conducted transport management studies jointly in 2000 in four countries, and the report was finalised in 2001.

**Surveillance and disease control:** Twenty-seven countries are currently establishing a Hib sentinel surveillance system. Of these, 13 countries are already sending data. Sensitisation and briefing meetings were conducted, and funds and other resources were provided. Improved yellow fever surveillance systems were established in six West African countries. Early in 2001, yellow fever outbreaks were detected in Côte d’Ivoire and Liberia and control measures were instituted.

**Staffing and organisation:** Most vacancies at the Regional Office and in the countries have been filled. The program currently has 786 WHO-paid staff members, including 338 professional officers in the epidemiological blocks and countries and 45 professional and general staff at the Regional Office.

The function of the VPD unit was improved with the creation of three sub-units (Immunization Systems Support, Polio, and Surveillance and Disease Control) and one Management Support Unit (MSU). A senior staff retreat discussed the orientation of the work of EPI staff in the coming years, as the program expands its scope beyond polio eradication. The work of WHO was reorganised with regards to GAVI implementation in coordination with the GAVI Regional Director and the SRWGs.

**Accelerated disease control**

**Polio eradication:** The specific objectives of polio eradication by the end of 2005 are that there will be no cases of acute flaccid paralysis (AFP) associated with wild poliovirus in the Region and no wild poliovirus found anywhere in the African Region, through virologic sampling of AFP cases, contacts and possibly waste water, and that the process of independent verification of polio-free status will lead to full regional certification. Strategies to achieve polio eradication include high routine immunisation coverage with at least four doses of oral polio vaccine (OPV) in the first year of life; supplementary doses of OPV to all under-five children via National Immunisation Days (NIDs); AFP surveillance with laboratory investigation of all cases; and, house-to-house mop-up campaigns to interrupt the final chains of polio transmission.
Following the successful synchronisation of NIDs in Central and West Africa in 2000, in 2001 NIDs were repeated in 16 West African countries, including Cape Verde. In July 2001, Ministers of Health from northern countries of Central Africa, as well as Niger, Nigeria and Sudan, met to synchronise NIDs for the end of 2001 and early 2002. The Heads of State of Mali, Nigeria and Sierra Leone launched the synchronised NIDs for West Africa in Sierra Leone jointly.

The first synchronised NIDs involving Angola, Congo Brazzaville, DR Congo and Gabon were implemented in three rounds between July and September 2001. In these countries, 17 million children received three doses of OPV. A similar effort covering Cameroon, Central African Republic, Chad, Equatorial Guinea, and Sao Tome and Principe resulted in over five million children being reached with three doses of OPV.

The performance indicators for AFP surveillance by country improved dramatically in 2001 compared to 2000. The non-polio AFP rate more than doubled from 1.3 cases per 100,000 children aged under 15 years in 2000 to 3.1 in 2001. Acceleration of polio eradication activities in the African Region during 2001 resulted in reduction of the extent of transmission with the number of countries where wild polio was detected decreasing from 11 in 2000 to six in 2001, the decline in intensity of transmission in the remaining polio endemic countries, and reduction in the diversity of the virus lineages.

Maternal and neonatal tetanus elimination: AFRO is committed to the goal of assisting member states to eliminate neonatal tetanus (NT) by 2005. That is, when 80% of the countries reach NT incidence rate of less than 1 case per 1,000 live births in every district, and 80% of the countries achieve at least 80% TT2+ coverage among pregnant women in every district. This will be achieved by: vaccinating more than 90% of women of childbearing age in high-risk districts with three doses of tetanus toxoid (TT) through supplemental immunisation; promoting clean delivery practices; sustaining 80% routine TT2+ coverage among pregnant women; as well as active surveillance for NT.

During 2001, WHO and UNICEF collaborated to provide training, technical assistance and funds to 30 Member States. A Lot Quality Assurance sampling survey for validation of MNT elimination was conducted in Namibia. NT mortality survey, which also assessed the care-seeking behaviour of neonatal cases, was carried out in Niger. By the end of 2001, Ethiopia, Ghana, Kenya, Zambia and Zanzibar had conducted TT campaigns targeting 3,989,350 women. MNT surveillance is now integrated into the established AFP surveillance system. Currently, case-based data are available for the southern and western epidemiological blocks. MNT elimination has also been validated in Namibia and Zimbabwe.

Measles control: In line with AFRO’s Strategic Plan for measles control, WHO, UNICEF, CDC and American Red Cross and the UN Foundation raised US$24 million in 2001 for AFRO’s accelerated measles control activities (target:
eight countries -- Benin, Burkina Faso, Cameroon, Ghana, Mali, Tanzania, Togo and Uganda). Country selection ensured that measles activities do not negatively affect polio eradication efforts. Intensive support provided to these countries included planning preparations and post-campaign evaluation of mass campaigns. All countries had more than 90% coverage of the target. In addition, priority countries were assisted to initiate intensified measles surveillance, including laboratory confirmation of suspected measles cases in 23 of these countries. The activities in 2001 will save an estimated 140,000 children over the projected three-year duration of impact.

A follow-up proposal for US$20 million has also been submitted to the UNF Board for approval.

**Yellow fever:** AFRO’s goal is to control yellow fever by 2005. This is to be achieved by increasing routine immunisation coverage to at least 80% and conducting emergency response for all confirmed cases of yellow fever within three days. The strategies for yellow fever control include: introducing yellow fever vaccine into routine EPI in high-risk countries; implementing "catch-up" campaigns in high-risk districts; establishing a reliable surveillance system, including a national laboratory capacity.

In 2001, Côte d’Ivoire, Ghana, Guinea, and Liberia reported yellow fever outbreaks. As a result of the intensification of yellow fever surveillance, a public health catastrophe was averted in Abidjan due to rapid detection of the outbreak in the capital city. Liberia also prevented many deaths due to yellow fever with excellent surveillance and response.

**Innovations**

**New vaccine introduction:** The specific objectives of this program area are that by 2005: all countries will be supported to include hepatitis B (HB) vaccine in their national immunisation programs; all countries using HB vaccine will reach HB vaccination coverage equal to that of DPT3; and half of the countries will be supported to include haemophilus influenza type B (Hib) vaccine.

During 2000-2001, 12 countries received support for the next five years from GAVI’s Vaccine Funds (VF) to introduce new and underutilised vaccines. In addition, 11 countries submitted applications for new vaccines and/or immunisation services support and/or injection safety support. Fourteen countries received technical assistance for this activity.

Two workshops to introduce Hib vaccine and the Hib rapid assessment tool were held for Anglophone and Francophone countries; a workshop was held for countries to develop/revise their action plans with a view toward introducing new vaccines; and a logisticians workshop was held for countries of eastern and southern Africa to ensure the smooth introduction of new vaccines. Other achievements during the year include: AFRO linking with the South African Development Community (SADC) inter-university network on HB, which aims at promoting prevention and control of HB.

**Vitamin-A deficiency:** The specific objective in this area is that by 2005, 80% of countries at risk for vitamin-A deficiency will have integrated vitamin-A supplementation with routine immunisation services. In 2000-2001, 32 coun-
tries added vitamin-A supplementation during campaigns and 20 countries reported to have integrated vitamin-A supplementation into routine immunisation.

**New technologies:** The specific objectives of this program area are that by 2005 countries will: adopt the multi-dose vial (MDVP) and vaccine vial monitors (VVM) and introduce methods for monitoring their use as daily vaccine management tools; adopt auto-disposable syringes and/or any equally safe injection technologies for all immunisation injections; adopt and implement technologies and management systems for safe disposal and destruction of injection material and other sharps. The Bamako workshops on sustainability of vaccine financing, and training on the construction of De Monfort incinerators were undertaken to move toward the achievement of these objectives.

**Partnerships**
CIDA, CVP, DFID, MI-IDRC, UNF and USAID provided funds totalling approximately US$7.5 million through WHO for 16 countries for enhancing their activities. These activities include increasing access to immunisation services, integrating vitamin A into routine EPI, and increasing and maintaining community participation. The Global Alliance for Vaccine and Immunizations (GAVI) likewise has provided funding for strengthening immunisation systems and introducing new vaccines.

**GAVI:** A communication on immunisation in Africa was made to the GAVI Board in Ottawa, Canada in October 2001. The presentation showed how quickly the GAVI process has expanded in the African Region, due to strong adherence of countries and technical assistance from the GAVI Sub-regional Working Groups and the global TFCC, now called ITF (Implementation Task Force). AFRO and GAVI Secretariat held a meeting for Health Ministers on GAVI during the Regional Committee meeting in Brazzaville, which helped maintain a high level of advocacy for EPI.

In April 2001, the African Regional GAVI Working Group, created in 2000, was split into two Sub-regional Working Groups (SRWG). The separate working groups will bring technical assistance closer to countries. One SRWG will deal with countries in western and central Africa and the other with countries in eastern and southern Africa. A Regional GAVI Coordinator is maintained in AFRO in order to carry out common functions and represent African positions whenever necessary.

GAVI is committed to support injection safety and will provide a 3-year supply of auto-disable syringes bundled with safety boxes for all immunizations. In addition, the measles partnership spearheaded by WHO and UNICEF and other partners such as the American Red Cross, UN Foundation, US CDC will support the implementation of the US$24 million measles control drive starting with 9 countries in Western, Central and Eastern Africa. Efforts will continue to be made to improve vaccine management at national and sub-national levels and to rehabilitate cold chain. We are now confident that polio will be eradicated in the African Region by 2005 or shortly thereafter and the polio infrastructure will be used to strengthen routine immunisation in all countries of the Region.

**Challenges**
Constraints to social mobilisation for strengthening immunisation systems included: inadequate capacity for micro-planning of social mobilisation at the district level; insufficient financial resources to encourage more effective community-level interpersonal communications; and lack of systematic planning and implementation of activities for social mobilisation for routine EPI.

Challenges to measles control included: a shortfall of funds to implement measles activities; injection safety and waste management issues; ensuring high quality SIAs as well as strengthening the first opportunity--routine measles vaccination. The most important constraint to MNT elimination in the Region is inadequacy of funds. Yellow fever control was hampered because of a world-wide shortage of yellow fever vaccine. The shortage was
exacerbated by an increased demand for vaccine in response to outbreaks in four countries in West Africa. Some national programs experienced complete stock-outs at the central level, and others did not have enough vaccine to promote vigorously an increase in yellow fever immunisation coverage in their high-risk districts.

**Future directions**

Substantial progress has been made with immunisations in the African Region between 1999 and 2001. Poliomyelitis transmission is on the verge of being interrupted; 12 countries have eliminated neonatal tetanus and seven southern African countries have sustained measles elimination from 1999-2001. The earlier declining trend in EPI coverage has been largely reversed, with the majority of African countries reporting increasing coverage. To date, 32 countries have multi-year plans to strengthen routine EPI, implement integrated disease surveillance, control measles, eliminate NMT and introduce new and under-utilised vaccines in the routine program using the momentum created by the GAVI initiative, capacity building in micro-planning during the mass campaigns in the countries.

Priorities for MNT elimination for 2001 include: continued collaboration with UNICEF and other partners; training for the remaining priority countries; improving NT case-based surveillance in the Region; close monitoring of the study of community involvement in surveillance in Guinea to assess its impact and determine if this could be adapted to other countries; and re-validation of MNT elimination in the nine countries of the Region assessed for MNT elimination.

Future efforts will focus on encouraging more countries to integrate vitamin A supplementation with routine immunisation services. This will be especially important as the number of countries conducting polio NIDs decreases.
Childhood diseases

Each year in Africa, three million children die from the effects of disease and malnutrition. In several countries, more than 15% of children die before they reach their fifth birthday. And, of those who do survive, many are unable to grow and develop to their full potential.

Over 70% of these childhood deaths are due to just six main causes: acute respiratory infection, diarrhea, measles, malaria, HIV infections and malnutrition. Also about 80% of the children who visit health services are suffering from at least one of the above conditions. Of the three million childhood deaths, pneumonia accounts for 15%. Pneumonia often affects children whose immune systems are weakened by malnutrition or HIV. Diarrheal diseases account for 12% of deaths. Children die as a result of dehydration and through lack of nourishment. The burden of diarrheal diseases is highest in areas where there is poor sanitation, inadequate hygiene and unsafe drinking water.

Malaria kills approximately 900,000 African children a year, accounting for one in six of all childhood deaths. Malaria can rapidly overwhelm a young child, causing high fever, convulsions and breathing difficulties. With the onset of cerebral malaria (an acute and severe form of the disease) the child lapses into a coma and may die within 24 hours. Measles, a highly contagious infectious disease, is a major childhood killer in the African continent. It is responsible for about 7% of childhood deaths a year. The measles virus is also responsible for other deaths when it leads to complications that result in pneumonia, diarrhea and malnutrition.

Over 28 million Africans are now living with HIV. The rate of HIV infections in pregnant women varies from 10% to 45%. The mother-to-child transmission (MTCT) of HIV ranges between 25% and 45%, thus it is eroding gains in child survival. In a number of countries, particularly in southern Africa, infant and childhood mortality is increasing due to the large number of children infected through MTCT.

The response of WHO/AFRO

In order to address the high childhood mortality, the World Health Organization’s Regional Office for Africa adopted the Integrated Management of Childhood Illness (IMCI), as a cost-effective strategy to contribute to the reduction of morbidity and mortality in children. The World Bank’s World Development Report (1993) described IMCI as a cost-effective intervention likely to have the greatest impact in reducing global burden of disease in Africa. In 1995, three countries in the African Region began implementing IMCI. By December 2001, 40 of the 46 countries in the African Region had started implementation of IMCI.
At the heart of the IMCI strategy is case management of the five most common causes of mortality among children. Children brought for medical treatment in Africa are often suffering from more than one condition. Diagnosis of one condition, therefore, is neither appropriate nor possible. Such children may need combined therapy for successful treatment. An integrated strategy takes into account the various factors that put children at serious risk. It ensures the combined treatment of major childhood illnesses, it speeds up urgent treatment of seriously ill children, it involves parents in the effective care of their children at home whenever possible, and it emphasises prevention of disease through immunisation, improved feeding practices and nutrition, and exclusive breastfeeding.

IMCI allows for greater efficiency during training and in the supervision and management of outpatient facilities. It reduces wastage of resources such as intravenous fluids and antibiotics by treating sick children with the most cost-effective intervention for their condition. The approach also avoids the duplication of effort that may occur in a series of separate disease control programs.

The burden of these relatively few major diseases of children can be reduced through full implementation of IMCI. Its implementation is possible by: achieving adequate coverage, particularly for poor populations; developing new technologies and delivery strategies; and sharpening the focus on family practices. IMCI’s three-pronged approach seeks to improve health workers’ case management skills, health systems that support IMCI and family and community practices that support child survival. Already IMCI is making a difference in health care delivery to children under five in the African Region.

**Achievements**

Implementation of IMCI involves three phases: introduction, early implementation, and expansion. In the introduction phase, consultants from WHO/AFRO make preliminary visits to assess the readiness of the country to start IMCI implementation and to orient the country’s stakeholders in the implementation strategy. The preliminary visits include an assessment of the countries’ health systems, including drug availability and partners to support IMCI implementation. In 2000, consultants made preliminary visits to three countries, and additionally, held national orientation meetings for seven. IMCI/AFRO also held an intercountry orientation meeting in Sao Tome and Principe for the Lusophone countries (Angola, Cape Verde, Guinea Bissau, Mozambique and Sao Tome and Principe).

Early implementation phase includes implementation of the three approaches in a limited number of districts and includes also adaptation of material to the individual countries’ needs. During 2000, eight countries completed adaptation of IMCI training materials to their local situation, bringing the total to 20 countries having completed adaptation. In 2001, 10 more countries adapted IMCI materials to their country-specific structures. With the advent of the HIV epidemic and subsequent increase of the prevalence of HIV/AIDS in children, IMCI has adapted the training materials to include HIV/AIDS. Twelve countries have adapted and revised their training materials to include identification and care of the child with HIV/AIDS.
and to support appropriate infant-feeding practices to decrease maternal-to-child transmission of HIV.

Early implementation also includes implementation of the three components of IMCI in a limited number of districts. This gradual approach enables a country to build up a pool of experienced facilitators, course directors and clinical instructors. The country gains experience in tackling health system issues such as referral, drug supply and begins introduction of the community component of IMCI before embarking on countrywide implementation. Six countries held their first IMCI facilitation skills and case management course in 2000 and a further 14 countries in 2001.

The expansion phase includes efforts to increase access to interventions initiated during the early implementation phase and to broaden the range of IMCI interventions, including pre-service training, operations research and different approaches to case management. In 2000, two countries and in 2001 seven more countries entered the expansion phase.

Improving case management skills: In 2000-2001 the countries implementing IMCI trained more than 12,500 health workers in case management and followed up about 70% of them. Additionally 144 senior health workers received training in these courses in eight countries, WHO also supported initial capacity building for countries implementing IMCI so that they can train their facilitators. Follow up after training was supported and conducted in six of these countries.

In order to support appropriate infant-feeding practices towards decreasing malnutrition and maternal-to-child transmission of HIV, breastfeeding and HIV and infant-feeding counselling courses were conducted in four countries in collaboration with UNICEF. The breastfeeding course helped health workers develop the clinical and inter-personal skills to support optimal breastfeeding practices The HIV and infant-feeding course gave health workers the knowledge and skills to give appropriate advice about infant feeding when working with HIV-positive mothers and their babies.

To establish the long-term sustainability of IMCI and to reduce the gap between newly trained and practicing health workers, IMCI/AFRO promotes the inclusion of the IMCI strategy into pre-service training curriculum. In 2000, it conducted pre-service orientation meetings in five countries. More than 600 students in Ethiopia, South Africa, Tanzania and Uganda have received IMCI training incorporated into their pre-service training. In 2001, an additional, five countries conducted IMCI pre-service training and planning meetings, and two countries adapted IMCI materials for pre-service training.

Improving the health system: The planning and management of activities related to improving the health systems to support delivery of IMCI include: improving the availability of drugs and supplies at first-level health facilities; maintaining service quality and organisation of the health facilities; referral pathways and care, identifying methods for sustainable finance; ensuring equity of access; and linking IMCI and Health Management Information Systems (HMIS).

In 2000, Zambia and Uganda used the Drug Management for Childhood Illness (DMCI) assessment tool and were able to describe the
basic problems associated with drug availability in these countries. In 2001, a training workshop on IMCI costing tool was conducted in Nigeria. Regional review of follow up after training and health facility supervision was held in Tanzania.

IMCI/AFRO has been supporting operations research with a focus on development and evaluation of new or improved systems and methods. Countries received assistance in development of proposal and execution of studies in 2000 and 2001. The studies focused on: financing mechanisms influencing drug availability; organisation of work of a health facility; assessment of various methodologies for IMCI pre-service training; and compliance of care-takers after counselling by health workers. Results of these studies provided important information on the length of the adaptation process (that it can be shortened), the training of health providers (non-residential training may be an alternative to residential training), and the health systems that support IMCI (availability of essential drugs is not satisfactory). Researchers also found that it is possible to reduce under-five mortality in endemic areas by training local mother coordinators to give antimalarial drugs to children.

Improving family and community practices that support child survival: Improving family practices at household level can significantly reduce childhood morbidity and mortality, as most children in Africa die at home without assistance from an appropriate health care provider.

WHO and UNICEF have identified 12 key family practices -- Uganda added four more -- and divided them into four categories: care seeking, home care, growth promotion and development, and disease prevention. Seven countries conducted baseline studies on community perceptions of the health problems of children in 2000. Planning guides for consultants, baseline and needs assessment tools, and indicators for family and community IMCI were also developed during 2001-2002. National orientation meetings were conducted for eight Francophone and Anglophone countries each. Communication strategies were also developed in three countries.

In 2001, two countries received technical assistance to develop strategies and operational plans for community IMCI following their annual review activities. Another four countries introduced and implemented the household and community component of the strategy. IMCI has also supported capacity building for community-level activities for Francophone countries by conducting a workshop on participatory methodology for community IMCI.

Reviews: The multi-country evaluation (MCE) is a set of studies using complementary designs to assess behavioural, nutritional and mortality impact of IMCI. In addition, the evaluation describes the costs of IMCI implementation. The MCE, which is coordinated by WHO/CAH/HQ, has two sites in the African Region – Tanzania and Uganda. Results from Tanzania showed that 98% of health facilities in the four districts have at least one health worker trained in IMCI, and follow ups have been done for all IMCI-trained health workers.
Monitoring (a continuous review of IMCI implementation to identify and solve problems) and evaluation (a periodic assessment of progress towards the objective) is ongoing. In 2001, three countries in the Region began to develop a systematic user-friendly approach to monitoring. Health facility surveys were conducted in South Africa and Zambia. The results have shown that the care provided to under-five children in the health facility has improved through introduction of IMCI.

In 2001, first year reviews of IMCI implementation were conducted in seven countries. Review findings for Ethiopia, for instance, showed that support supervision is likely to improve and sustain health worker performance, thus ensuring provision of quality care to sick children. In Niger, the review resulted in changing the treatment for dysentery and suggested the need to include HIV/AIDS in adaptation of IMCI guidelines.

**Partnerships**

Collaboration between RBM and IMCI began in the African Region in 1996. The two strategies share many of the same methods in reducing childhood morbidity and mortality in children under-five years of age. The original collaboration has expanded to operations at the country level. RBM and IMCI significantly strengthened their collaboration during 2000-2001. A joint task force on RBM and IMCI met twice in this period and recommended specific approaches for collaboration in reducing malaria and other childhood diseases. There have also been collaborations with RPA in the incorporation of HIV/AIDS in IMCI activity areas. UNICEF, UNF, USAID and DFID have supported IMCI by funding several activities.

**Challenges**

Constraining factors included limited resources at country level for the start-up costs of IMCI and weak national health systems support.

**Future directions**

The priority for 2002 is to scale-up implementation of IMCI in collaboration with RBM. One of the underlying challenges is to ensure that countries improve and maintain the quality of health care provided to children at health facilities and households.

Another key challenge is to develop partnerships with organisations and institutions working at community, national and regional levels. Collaboration gives each partner advantages in areas such as research, drug management, communication and community orientation.

![Figure 28: The impact of IMCI on health workers' prescribing practices and quality of care](image-url)
Leprosy

Throughout history, those affected by leprosy have often been ostracised by their communities and families. Of all the diseases, leprosy has the most notorious history as a cause of deformity, disability, loathing and fear. Leprosy mainly affects the skin and nerves. If untreated, it can cause progressive and permanent damage to the skin, nerves, face, limbs and eyes. Paucibacillary (PB) leprosy results in less than five numb skin patches, while Multibacillary (MB) leprosy results in more than five numb skin patches.

In 1981, a WHO Expert Committee for leprosy recommended multidrug therapy (MDT). MDT consists of three drugs: dapsone, rifampicin and clofazimine. This drug combination kills the pathogen and cures the patient. PB patients are cured within six months with a combination of two drugs, and MB cases are cured in 12 months with a combination of the three drugs. The widespread use of MDT has reduced the disease burden considerably.

MDT efficacy was so impressive that, in 1991, government delegations at WHO’s World Health Assembly resolved to eliminate leprosy as a public health problem by the end of 2000. The international community came forward with generous financial support. All countries in the African Region established a national leprosy elimination program based on the standard MDT treatment protocol recommended by a WHO expert committee. This treatment regimen was not only safe and effective but also free of charge for all country programs.

During the 1990s, significant progress was made toward the elimination of the disease. The International Leprosy Conference held in November 1999 highlighted the achievements at country level. On the eve of the target date of elimination, only 12 countries in the world did not achieve the elimination goal. In the African Region tremendous progress was also noted. As of December 2000, there were 57,516 registered cases (prevalence = 0.92 per 10,000). Approximately 52,751 new cases of leprosy were detected during 2000. Thirty-one countries had reached the elimination goal, while seven countries had a prevalence of up to two cases per 10,000 inhabitants. During 2000, the priority in the Region was to intensify leprosy elimination activities.

The response of WHO/AFRO

In September 1994, following the resolution of the World Health Assembly in 1991, the Regional Committee adopted Resolution AFR/RC/44/R5 to consolidate engagement of Member States of the African Region to eliminate leprosy as a public health problem.

The effectiveness of MDT in treatment of leprosy. A patient before being treated with MDT (left) and after.
The objectives of WHO/AFRO program for the elimination of leprosy are to: help member states organise a national program for the elimination of the disease; support national programs; contribute to the development of new initiatives in Member States to ensure total country coverage; help countries mobilise required resources to carry out national plans; contribute to developing and strengthening national capacity building in the areas of program management and patients’ care; promote and participate in the development of partnerships; coordinate sharing of experiences and mutual support among countries; and, develop operational research in the areas of patient care, community participation in leprosy elimination activities and new treatment regimens.

Between 1991 and 2000, the leprosy profile of the Region improved substantially. The following actions are part of the ongoing leprosy elimination activities: ensuring accessible and uninterrupted MDT services are available to all patients through flexible and patient-friendly drug delivery systems; ensuring the sustainability of MDT services by building the ability of general health workers and community volunteers to treat leprosy; encouraging self-reporting and early treatment by promoting community awareness and changing image of leprosy; monitoring the performance of MDT services, the quality of patient’s care and the progress being made towards elimination by developing a simple information system.

A strategy called The Final Push aims to eliminate leprosy by the year 2005 was launched at the third International Conference on the Elimination of Leprosy, held in Abidjan, Côte d’Ivoire, in November 1999. The activities undertaken by the Leprosy Unit of WHO/AFRO were based on the Final Push strategy. For this period, the countries of the African Region are categorised into three groups based on their prevalence.

Seven countries are in Group I, where leprosy is most endemic. They are Angola, Central African Republic, DR Congo, Guinea, Madagascar, Mozambique and Niger. The prevalence in these countries was more than 2 cases per 10,000. Group II countries are of intermediate endemicity and have a prevalence of between 1 and 2 cases per 10,000. Included in this group are Cameroon, Congo, Côte d’Ivoire, Guinea Bissau, Liberia, Mali and Sierra Leone. Group III countries have eliminated leprosy at national level, and include the rest of the countries in the African Region.

WHO/AFRO supported countries in Group I to plan and carry out intensified activities to eliminate leprosy. These activities include: enabling all health facilities in endemic districts to diagnose and treat leprosy; ensuring easy and uninterrupted access to free MDT drugs; ensuring high cure rate through flexible and patient-friendly drug delivery systems; promoting case finding by informing the public about the disease and encouraging suspect cases of leprosy to come forward for diagnosis and treatment; sustaining high geographic cover-
age with MDT services by involving the community; changing the community image of leprosy through information, education and advocacy; and, closely monitoring progress towards elimination at the district level by updating leprosy registers (ULR) and Leprosy Elimination Monitoring (LEM) exercises.

By the end of 2001, Angola, Central Africa Republic, Guinea, Mozambique, and Niger were implementing intensified activities. Democratic Republic of Congo and Madagascar were in the planning process. As a result of these activities, the prevalence of leprosy has decreased below 2 per 10,000 in four Member States.

Support to countries in Group II was accelerated in the following activities: ensuring easy and uninterrupted access to free MDT drugs; ensuring high cure rate through flexible and patient-friendly drug delivery systems; sustaining high geographic coverage with MDT by involving the community; and, closely monitoring progress towards elimination at the district level by ULRs and LEM exercises. Accelerated activities, carried out in Cameroon, Chad, Congo, Côte d’Ivoire, Ethiopia and Mali, are to be organised for Guinea Bissau and Sierra Leone. The elimination goal at the national level was reached in Cameroon, Chad, Ethiopia, Guinea Bissau, Mali and Sierra Leone.

Leprosy elimination activities in Group III countries was sustained by: providing simplified guidelines and materials for diagnosis and treatment of leprosy at the health centre level; providing easy access to free MDT; identifying geographical areas where the disease is more prevalent (to implement the core activities of the intensified strategy); and, putting in place a simple and integrated surveillance system and referral systems. Support and follow-up missions were carried out in Benin, Burkina Faso, Comoros, Gabon, Gambia, Ghana, Equatorial Guinea, Kenya, Senegal, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

**Partnerships**

In November 1999 in Côte d’Ivoire, a global alliance was forged to bring together all partners in the final push to eliminate leprosy. The Global Alliance included the governments of 12 major endemic countries, WHO, the Nippon Foundation/Sasakawa Memorial Health Foundation of Japan, Novartis/Novartis Foundation, international NGOs and associate partners such as the Danish International Development Assistance Agency (DANIDA) and the World Bank. Of the 12 countries, seven were from the African Region. The Global Alliance is a partnership dedicated to ensuring that all leprosy patients, wherever they may live, and however poor, have free and equal access to the most modern treatment available. WHO supplies MDT free of charge to those who need it.

**Challenges**

In countries where leprosy remains a public health problem, political commitment needs to be strengthened. In order to reach all patients, treatment of leprosy needs to be integrated into the general health services. This is a key to successful elimination of the disease. Strong leadership by ministries of health is
absolutely necessary, especially in some of the major endemic countries. Partners in leprosy elimination need to further accelerate activities and ensure that human and financial resources are available. The age-old stigma associated with disease remains an obstacle to self-reporting and early treatment. The image of leprosy has to change at regional, national and local levels. A new environment, in which patients will not hesitate to come forward for diagnosis and treatment, must be created.

Additional challenges at the country level include: the low level of security in some countries causing difficulties to organise follow-up of activities at district level; sub-optimal levels of motivation of health workers due to the poor social conditions and conflicts; inadequate participation of communities in case-loading activities; and inadequate drug supplies.

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**Future directions**

Future activities will focus on:

- Countries where war, insecurity and civil conflicts have delayed implementation of leprosy elimination activities. These countries include Burundi, Central African Republic, Congo Republic Democratic Republic of Congo, Guinea, Guinea Bissau, Liberia, Sierra Leone and Uganda. In these countries, core activities of leprosy elimination will be accelerated.
- In countries where leprosy, although eliminated at national level, is still endemic in some districts or geographical areas, sustaining leprosy elimination core activities will be the major task. These countries are Burkina Faso, Comoros, Ghana, Mali, Nigeria, Tanzania and Zambia.

- The three countries with prevalence of more than 2 per 10,000 – Angola, Madagascar and Mozambique – to implement intensified activities to eliminate leprosy.
Information on communicable diseases is a key part of public health. Communicable disease surveillance provides information essential to: detect and respond timely to epidemic and emerging diseases; describe the geographical distribution of diseases and detect unusual disease pattern; set priorities, plan, mobilise and allocate resources; and, monitor and evaluate the impact of prevention and control activities. Effective communicable disease control relies on effective surveillance and response systems.

The last two decades have been characterised by the recrudescence of epidemic-prone diseases and the emergence of new diseases in Africa. Diseases such as meningococcal meningitis, cholera, yellow fever and Ebola hemorrhagic fever are prone to epidemics characterised by high mortality rates and disruption of health services.

In 2001, 29 Member States in the African Region reported 61,988 cases and 6,172 deaths from an epidemic of meningococcal meningitis. The most affected five countries (Benin, Burkina Faso, Chad, Ethiopia and Niger) accounted for 75% of cases and 67% of the deaths.

The cholera epidemic in South Africa that started in August 2000 continued in 2001. By the end of 2001, South Africa reported 99,305 cases and 217 deaths, with a case fatality of less than 1%. Six other southern African countries also reported a total of 23,809 cases and 851 deaths. Great Lakes Epidemiological Block countries reported a total of 8,336 cases and 261 deaths. The West African Epidemiological Block countries reported a total of 20,174 cases and 722 deaths. The Uganda Ebola hemorrhagic fever epidemic was declared over at the beginning of 2001. Gabon and Congo Republic, however, reported an outbreak due to Ebola in November 2001. By the end of the year, Gabon reported 20 cases and 17 deaths and Congo Republic reported 13 cases and 7 deaths. Several cases of Marburg hemorrhagic fever and Lassa fever were also reported from the Region in previous years.

The nine plague endemic countries reported 636 cases and 56 deaths. The Democratic Republic of Congo and Madagascar reported two-thirds of the cases and three-quarters of the deaths. Even more cases and deaths had occurred in 2000.

Outbreaks of yellow fever have occurred in Côte d’Ivoire, Gambia, Ghana, Guinea-Conakry and Liberia.

The response of WHO/AFRO
Since 1996, WHO/AFRO has played a critical role in preparation of and signing Protocols for Cooperation in Epidemic Prevention and Control. Through the protocols, countries having common epidemiological and geographical characteristics committed themselves to share...
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information and resources for epidemic prevention and response, with the support of WHO.

In 1998, the Regional Committee for Africa adopted the Integrated Disease Surveillance (IDS) strategy during its 48th session. The Committee was aware of the pressing need for appropriate information on disease trends and the effectiveness, efficacy and impact of intervention programs. In addition, application of the integrated approach to epidemiological surveillance was likely to enhance cost effectiveness. The Regional Director created IDS to coordinate better surveillance activities within all programs of DDC and to follow implementation of the IDS strategy in the African Region.

The IDS approach envisages integration of all surveillance activities (e.g. collection, analysis, interpretation and dissemination of surveillance data) at district level. All supports to implement the IDS system, including training, supervision and resources, both financial and material, from all programs and donors are streamlined and directed to districts. At the central level, a surveillance unit coordinates all activities to implement the IDS system and handles the data management for routine surveillance systems. A specialised analysis is undertaken in collaboration with the concerned intervention program.

The IDS strategy was developed with the overall guiding principle of flexibility, usefulness and simplicity of the system. It is a district-centred and outcome-oriented strategy that focuses on linkage of data to public health action at all levels. It promotes national ownership, decentralised decision making and actions at all levels as well as integration and coordination of surveillance activities.

The objectives of communicable disease surveillance and response are threefold: (1) to set up or strengthen IDS for early detection of epidemics and timely response at all levels of the national health system, particularly at district level; (2) to establish, in collaboration with different programs, a regional database for selected priority communicable diseases for effective monitoring of epidemiological trends and progress towards disease elimination and eradication; (3) to improve the level of epidemic preparedness and response through implementation and regular monitoring of national action plans and the application of cooperation protocols among neighbouring countries in the area of epidemic prevention and control.

To meet the pressing demand, DDC was restructured and the Communicable Disease Surveillance and Response (CSR) Unit was

**Figure 32: Cases of meningococcal meningitis reported from Member States, 1990-2001**

**List of priority diseases for IDSR**

- Diseases targeted for eradication or elimination
  - Poliomyelitis
  - Dracunculiasis
  - Neonatal tetanus
  - Leprosy

- Epidemic prone diseases
  - Cholera
  - Bacillary dysentery
  - Plague
  - Yellow fever
  - Meningococcal meningitis
  - Viral hemorrhagic fever

- Disease that are major public health problems
  - Diarrhoea (under-five children)
  - Pneumonia (under-five children)
  - HIV/AIDS
  - Malaria
  - Trypanosomiasis
  - Tuberculosis
  - Onchocerciasis
created. The priorities of the CSR Unit, within WHO/AFRO, are to strengthen: (1) country capacity for improving priority disease surveillance and epidemic preparedness and response systems; (2) laboratories and involve them in surveillance; and, (3) data management and its use for public health action; (4) communication network for surveillance; (5) the capacity of inter-country teams and enable them to provide rapid and effective technical support to countries.

Achievements

Integrated Disease Surveillance: The Regional IDSR Task Force held its second meeting in May 2001 and forwarded 10 recommendations on improving implementation of IDSR to the Regional Director. National surveillance systems in eight countries were assessed, bringing to 28 the number of countries assessed. Seven countries formulated national 5-year plans of action of Integrated Disease Surveillance and Response (IDSR), bringing the number of countries having formulated plans to 23.

Terms of Reference of the IDSR Task Force

Task force members represent national governments, agencies and professional organisations that share with AFRO the vision, goals and objectives for the implementation of IDSR. Task Force meetings are an opportunity for partners to engage in useful dialogue on IDSR-related topics and to provide AFRO with advice, recommendations and suggestions for program directions. Within these objectives, the Task Force will do the following:

- Review the Regional progress in the implementation of IDSR, making recommendations on priority activities.
- Assist in the identification of financial and technical resources for IDSR at both the regional and national levels and recommend ways to improve the coordinated use of IDS resources.
- Recommend ways to assist in the establishment and support of national IDSR coordination mechanisms.
- Recommend ways to promote the exchange of information on IDSR issues among participating agencies and member states.
- Advise the Regional Director on the implementation of IDSR.

Figure 33: Cases of yellow fever reported to WHO/AFRO, 1995-2001

The Generic IDSR Technical Guidelines were made available to countries for adaptation. A draft adaptation protocol was used to facilitate the process. Ghana and Malawi have completed adaptation of generic IDSR technical guidelines. By the end of 2001, three countries completed adaptation of the generic guidelines. Eleven countries were also supported to prepare an initial draft of National IDSR Technical Guidelines. *IDS Bulletin* was published in all of the epidemiological blocks.

Generic IDSR Training modules were developed, field-tested and made available in French, English and Portuguese.

Laboratory strengthening: Three epidemiological block meetings were organised for national bacteriology laboratory directors from 30 countries to follow up and strengthen laboratory networks. Fifty-eight senior laboratory technologists from 39 countries participated in a laboratory-training workshop on cholera, shigella, and bacterial meningitis agents on standard public health diagnostic methods. The training has enabled countries laying ground for regional and sub-regional networks of laboratories to standardise their different methods and procedures. It has also facilitated sharing of information and bulk purchase of reagents and antigens, as well as the establishment of external quality assurance and control.
The training of six senior laboratory technologists from five plague-endemic countries has also strengthened laboratory capability in the diagnosis of plague in these countries.

Laboratory supplies essential for confirmation of selected bacterial epidemic-prone diseases were procured and distributed to the countries. Laptop computers were also procured and distributed to strengthen national public health laboratories’ capability on data management. In order to enhance communication capacity, e-mail connections have also been provided.

Epidemic preparedness and response: Support for outbreak response: yellow fever in five countries; meningitis in eight countries; and Ebola viral hemorrhagic fever in three countries. Effective surveillance followed by prompt organised response of the Government, WHO and partners stopped a potentially large urban yellow fever epidemic in Abidjan, Côte d’Ivoire. Three million people were vaccinated within 10 days.

Dissemination of information: An essential component of surveillance and response is the preparation and dissemination of up-to-date information to those who need to know. To meet regional, sub-regional and national needs in this respect, publications and documents have been made available online (www.whoafro.org). Hard copies are also sent regularly to stakeholders.

Partnerships
Since 1996 USAID has significantly contributed to WHO/AFRO activities for epidemic preparedness and response. This contribution aimed at strengthening WHO/AFRO capacity at regional and sub-regional level to implement IDS strategy and Epidemic Preparedness and Response activities.

The UN Consortium has also provided support that includes regional, epidemiological block and national capacity building for implementation of IDSR. The project, which started in May 2000, runs over three years.

Challenges
The pace of implementation of planned activities has been slow since the IDSR process has proved to be more complex than anticipated. In many areas human and financial resources were also limited.

High technology increasingly is employed in disease surveillance but it is not yet available or affordable to most countries of the African Region. The facilities offered by molecular biology, gene sequencing/gene probe and use of polymerase chain reaction (PCR) for identification of etiological agents and their resistant variants could be made available to Member States through centres of excellence.

While strengthening disease surveillance, it is equally important to address the problems that are identified through information generated thereby. Among such problems, confirmed epidemics need immediate and appropriate response. While Member States have adhered to sub-regional Cooperation Protocols for Epidemic Prevention and Control, their epidemic response capacity is still limited. Recent experience has shown a number of shortfalls in epidemic management. Countries are not adequately prepared. Trained human power, critical supplies and logistics, including fast means of communication at field level (e.g.
satellite phones, PRACTOR) are often insufficient. Epidemic response is often delayed and, as a result, control measures put in place have limited effect on the course of epidemics.

**Future directions**

The priorities for 2002-2003 include two components: a regional component and a sub-regional component. The regional component will address the issues raised above by scaling-up implementation of the IDS strategy as well as Epidemic Preparedness and Response. Support will be provided to countries to prepare national guidelines for integrated disease surveillance, train relevant health personnel, strengthen public health laboratory capacity for confirmation of etiological agents of priority communicable diseases, and improve epidemic preparedness and response.

Countries also will be supported to improve national capacity and epidemic management. To this end, national rapid response teams will be trained; countries will receive technical support for setting up and maintaining adequate stocks of drugs, vaccines and essential materials for epidemic response. Logistic support and expertise will be provided to countries facing major epidemics.

The sub-regional component relates to the establishment of, and support to, disease surveillance centres of excellence such as the Multi-Disease Surveillance Centre in Ouagadougou. This Centre will focus on the monitoring of the susceptibility of etiological agents of priority communicable diseases, advanced epidemiological analysis, including elaboration and testing of predictive models, and laboratory quality control.
Research in communicable diseases is important to formulate and shape policies and strategies; to expand the frontiers of knowledge on the transmission, control and other aspects of communicable diseases; and, to inform the public and their leaders.

The focus of communicable disease research and development was to build capacities of countries in planning, implementing, evaluating, disseminating and developing the research finding to influence strategies and policies in communicable disease interventions. The major target diseases were malaria, HIV/AIDS, tuberculosis, schistosomiasis, lymphatic filariasis and Buruli Ulcer.

The WHO strategy in the area of communicable disease research development is to provide support to countries to strengthen capacity for operational research in communicable disease and to use results obtained to influence policy and practice for prevention and control. WHO/AFRO has made available extra-budgetary funds particularly for operational research on malaria, and has appointed a focal point person for research within the Division of Prevention and Control of Communicable Diseases to coordinate research activities.

Achievements
Malaria: Capacity has been built for designing and conducting operational research studies in 32 as against the targeted 21 malaria-endemic countries of the Region through workshops and country technical support missions. Seventeen countries received financial support to undertake research studies developed at workshops.

Technical and financial support was provided to 15 countries for ongoing studies on the therapeutic efficacy of antimalarial drugs, as well as for establishment of 10 new sentinel sites. In 2000-2001, six countries reviewed antimalarial treatment policy and four initiated the process of change. Capacity for economic analysis of malaria was built in 14 countries.

VPD: Support was provided for the completion of operational research projects in measles, yellow fever and meningitis. Measles, yellow fever and meningitis control strategies were fine tuned using the results of operational research.

CSR: Epidemiological blocks in the Region have conducted operational research for improving surveillance and epidemic control strategies. As a result, improved strategies are available for surveillance and control of epidemics. Additionally, a functional network of collaborating laboratories that monitors anti-

Figure 36: Status of malaria drug policies in the African Region, 2001
microbial resistance for selected bacterial diseases has been established.

In IMCI: The major achievement has been the dissemination of research results to countries in the implementation phase of IMCI. Some countries have translated these results into policy and practice.

Tuberculosis: Four countries conducted studies on the operational effectiveness of DOTS. The results are being translated into policy guidelines for community TB care.

HIV/AIDS: 10 countries received support through the Inter-Agency Working Group on Prevention of Mother-to-Child Transmission to pilot intervention studies in these areas.

In schistosomiasis and lymphatic filariasis, data has been generated that will be used for resource mobilisation among partners for the control of these diseases.

Buruli Ulcer: support was provided to carry out research projects in selected countries to address relevant questions about the epidemiology, case management and socio-economic aspects of BU. The results of these researches have been disseminated in endemic countries.

Challenges
Constraining factors were lack of a coordinated approach to research within countries and inadequate country capacity to undertake research.

Certain diseases such as schistosomiasis and lymphatic filariasis are not in countries’ list of priority diseases. Consequently, adequate financial resources are not allocated to conduct operational research.

Future directions
In 2002-2003, the emphasis will be to use new and proven technologies and approaches for control of communicable diseases. Areas will be identified where traditional remedies and approaches could be adapted for use within current health structures.
The way forward

This Report has attempted to highlight the variety of activities undertaken in 2001 to combat communicable diseases. It has also given a brief overview of the major challenges we face in the area of control of these diseases. As we embark on 2002, we need to chart our directions, and these are described in brief in this section.

The Division’s emphasis in the area of control of HIV/AIDS/STI will focus on supporting health systems to deliver a package of care and prevention interventions at district and community levels. Priorities for tuberculosis control will be to reinforce capacity building at all levels to: accelerate the scaling up of DOTS coverage in all countries; implement and expand appropriate interventions to contain the TB/HIV dual epidemic; and, improve monitoring and surveillance.

Future directions for malaria control will be to reinforce county capacity to scale up implementation, supervision, monitoring and evaluation of RBM interventions. Priorities for other tropical diseases include: scaling up of lymphatic filariasis elimination program in affected countries; and, supporting more countries to develop and implement control programs for schistosomiasis, soil-transmitted helminths and trypanosomiasis.

VBC will focus on three major areas, namely: supporting countries in the preparation and adaptation of guidelines for vector control; capacity building; and, supporting countries to establish vector control demonstration projects in selected districts using the integrated vector management approach.

To maintain equitable population immunity and sustain gains through disease control, elimination and eradication efforts, more efforts and funds will be required. Funds are needed to reinforce technical assistance to the countries to support routine EPI, measles and yellow fever control, and to improve routine immunisation coverage. During 2000 efforts will be made to interrupt the transmission of wild poliovirus in the remaining endemic areas.

Further government and donor commitment is needed to secure timely polio eradication, neonatal tetanus and leprosy elimination, and Dracunculiasis eradication in the remaining endemic countries. IDS at all levels, including the community level, will be key for monitoring progress made. The main priorities for IMCI include scaling up of activities at country level, ensuring that health systems are improved to support implementation of quality IMCI, especially availability of essential drugs, and empowering families and communities to prevent and manage common illnesses and conditions in children.

The priorities for communicable disease surveillance and response will be to scale up implementation of the IDS strategy as well as Epidemic Preparedness and Response in Member States. Another priority will be to establish and support disease surveillance centres of excellence such as the Multi-Disease Surveillance Centre in Ouagadougou. In the area of research development, emphasis will be to use new and proven technologies and approaches for control of communicable diseases and identification of areas where traditional remedies could be adapted for use within current health structures.
Annexes

Country statistics
- Annex 1: HIV/AIDS
- Annex 2: Tuberculosis
- Annex 3: Malaria
- Annex 4: Other tropical diseases
- Annex 5: Vaccine-preventable diseases
- Annex 6: Epidemic-prone diseases