The World Health Organization (WHO) has been considered as Sudan’s technical partner in all issues related to health and development since 1956, when Sudan joined as a member of WHO.

Over the years, WHO has been working to reduce mortality, morbidity and disability, and to improve health, especially of vulnerable populations. This goal is achieved with partners through building national capacities, strengthening health systems, public health interventions as well as provision of humanitarian assistance during emergencies.
A report on 2010-2011 activities

This report highlights activities implemented and supported by WHO over the course of 2010-2011, covering programme areas of health services and systems development, health promotion, health protection and sustainable development, communicable disease surveillance and response, neglected tropical diseases, tuberculosis, HIV/AIDS, and emergency preparedness and humanitarian action. Programme activities were funded through both WHO’s regular budget and voluntary contributions from donors.
Sudan carries 15% of the TB burden in the Eastern Mediterranean Region. In 2011, the estimated incidence of new smear-positive cases was 119 per 100,000 populations. This gave a total estimation of 17,850 new smear-positive cases. In addition, it has been estimated that the prevalence of all TB forms was 188 cases per 100,000 populations (82,000 prevalent cases).

Tuberculosis care and treatment is provided by the National Tuberculosis Control Programme (NTP) with full support from WHO and partners. Although the TB Programme has scaled up TB care based on directly observed treatment short courses (DOTS), TB has remained a public health priority in Sudan.

The programme has faced several challenges which were addressed by strengthening the following areas of intervention: TB care in conflict areas, quality of DOTS, multi-drug resistance (MDR)-care, private-public mix (PPM), as well as advocacy, communication, and social mobilisation (ACSM).

In addition to pursuing of high-quality DOTS, interventions were conducted covering coordination and strengthening partnerships with uniformed forces, inmates, health insurance, and private clinics as well as charity organizations. Partnership with public and private practitioners has also been established in five states.

Capacity building activities were provided to staff & statisticians from 15 states on DOTS, MDR-TB, community volunteers supporting DOTs, contact tracing and management, HIV recording and reporting, PPM, DOTs, and health communication skills. The number of trained health workers reached 2,114 with an achievement rate of 115% against its target of 1,826.

An equally important intervention in 2011 was the continuous supply of 1st and 2nd line drugs available to all registered patients. This included the availability of TB drugs for children.

Access to TB services has improved in the three Darfur states. There were 254 new smear positive cases diagnosed in the newly established centers, exceeding the target of 220 cases, with an achievement rate of 115.5%. This has been achieved through strong co-ordination with the WHO Emergency Unit and the establishment of partnerships with non-government organizations that have provided services in IDPs camps.

Among registered TB patients, some 3,125 additional patients also received HIV counseling and testing which exceeded the target for 2011 which was previously set at 2,400 persons. The achievement rate of 130% was recorded by 12 TB management units (TMUs) with voluntary counseling and testing capacity.

Overall, TB activities encompassed raising awareness, and the involvement of communities. Politicians were encouraged to create a positive perception towards TB, (e.g. prevention, treatment efficacy and adherence, apart from reducing stigmatizing attitudes) and were addressed by a more comprehensive, multi-level, integrated advocacy, communication, and social mobilisation (ACSM) programme.

Way forward

To increase the adherence to treatment and decrease the defaulters’ rate, a task force will be established among all of central unit and state level to form synchronized activities and coordinated actions.

With the recognition of the importance of volunteers such as the Sudan TB Patients Association and other volunteer networks that have been helping decrease the default rate, partnerships with these groups will be strengthened. Simultaneously, TB advocacy activities will be implemented through the volunteer groups. In addition, ensuring sustainability of the partnership with NGOs and public and private care providers could improve the services delivery especially in war affected and post conflict areas.

Like many other countries around the world, Sudan has also been challenged by MDR-TB. There is a need to strengthen MDR diagnosis and management by activating the zonal labs, establishing clinics for MDR cases, regular follow-up of cases at state level, and provision of support to patients.
As part of the World AIDS Day celebration in 2011, the World Health Organization (WHO) together with Sudan National AIDS Programme and partners conducted advocacy activities among healthcare providers to address the issue of stigma within the healthcare setting. The World AIDS Day celebration was an opportunity for the States of Darfur and Blue Nile to scale-up mobile voluntary counseling and testing services (MVCTs).

Voluntary testing and counseling service has been key to early detection and treatment of HIV/AIDS.

**Milestones**

**HIV/AIDS Programme**

The objective of the national programme is to reduce the spread and impact of HIV/AIDS in Sudan. WHO’s support is to strengthen the health sector response to HIV/AIDS and to provide technical support to the Ministry of Health and its partners.

Sudan has been combating HIV/AIDS since 1987 after the country’s first AIDS case was reported a year earlier. WHO has been a key partner ever since. WHO supported Sudan’s efforts through the following strategies: behaviour change communication (BCC), voluntary counseling and testing (VCT), control of sexually transmitted infections (STIs), prevention of medical transmission in healthcare settings, provision of antiretroviral therapy (ART) and home-based care.

To support these strategies, WHO together with partners conducted advanced training courses for counseling supervisors as well as advocacy seminars aimed at gaining consensus on the delivery and promotion of mobile testing and counseling. With direct support from the States, mobile VCT sessions were carried out mainly targeting the most at risk populations (MARPs). In addition, WHO supported the national programme to establish a National Technical Working Group on Control of sexually transmitted infections (STIs) and conducted training courses on syndromic case management for 2,344 health workers.

To achieve the objective of ensuring sufficient and safe supply of blood and blood products, WHO supported the development of National Blood Policy and conducted training courses on Quality Management for blood bank staff and clinicians as well as training activities on voluntary non-remunerated blood donation. The percentage of voluntary non-remunerated blood donors has substantially increased from 14% in 2007 to 49% in 2011. The National Blood Donors Association of Sudan, which WHO helped organize, has played an important role in the voluntary blood donor programme.

**Way Forward**

To strengthen collaboration at state level, WHO will support activities of the state programmes, national training institutions through WHO field offices in conflict areas. In addition, the National Routine Reporting system will be improved by launching the electronic patient monitoring system and HIV/AIDS databases, by providing monitoring tools, and activating patient tracking activities to minimize loss to follow-up. WHO will support the Ministry of Health through the Sudan National AIDS Programme (SNAP) in developing laboratory quality assurance and in training more health providers to improve quality of services.

Moreover, WHO will work in close coordination with the National Blood Transfusion Service to carry-out media campaigns to promote voluntary non-remunerated blood donation.

As part of the World AIDS Day celebration in 2011, the World Health Organization (WHO) together with Sudan National AIDS Programme and partners conducted advocacy activities among healthcare providers to addresses the issues of stigma within the healthcare setting. The World AIDS Day celebration was an opportunity for the States of Darfur and Blue Nile to scale-up mobile voluntary counseling and testing services (MVCTs). Voluntary testing and counseling service has been key to early detection and treatment of HIV/AIDS.
Malaria Control & Elimination

The objective of the programme is to reduce the existing malaria burden in Sudan with due consideration of the prevailing eco-epidemiological context through implementation of appropriate and cost-effective malaria control interventions.

Funds in 2010-2011: $2.5 M
Donors: The Global Fund to fight AIDS, Tuberculosis and Malaria, Bill & Melinda Gates Foundation, Global Environment Facility

Milestones

Malaria posed an enormous burden of morbidity and mortality in the country during 2010-2011. Although malaria was a top public health concern, the National Malaria Control Programme (NMCP) with WHO’s support remarkably reduced the number of cases from more than 4 million malaria cases in the year 2000 to less than 1 million malaria cases in 2010. Between 2001 and 2010, the number of deaths due to malaria has significantly reduced by 75%.

WHO worked in close collaboration with the NMCP by implementing appropriate and cost-effective malaria control interventions such as distribution of artemisinin-based combination therapy treatments (ACTs), rapid diagnostic tests (RDTs) and long-lasting insecticidal nets (LLINs) as well as introduction of home-based management of malaria (HMM) strategy.

In 2011, around 4,666 health facilities were providing free artemisinin-based combination treatments (ACTs) or 89% of the total number of health facilities targeted. First introduced in Sudan in 2005, ACTs are recommended as the first-line treatment for malaria caused by Plasmodium falciparum, the most deadly of parasites that infect humans.

To help promptly detect malaria parasites in human blood, RDTs were distributed to health facilities in villages. The number of health facilities with RDTs has reached 3,363 or 73% of the total targeted facilities.

Considered as the most effective intervention, WHO has been supporting the distribution of LLINs for free to families in risk areas. In Sudan’s far-flung villages, access to curative and diagnostic services have been limited. The home-based management of malaria or HMM has been identified as one of the strategies to reduce the burden of malaria, especially in malaria-endemic areas. So far HMM has been introduced to 988 villages across the country. With HMM, diagnosis and treatment has been brought near the home or within the community so that treatment is given within 24 hours of onset of symptoms.

Way Forward

Sudan has strongly positioned malaria control activities as one of its topmost interventions to ensure a healthier Sudan. However, the work is still far from done. Malaria remains a critical priority and effective malaria control will largely depend upon the sustained commitment among partners. To achieve its objective, WHO will continuously support the Malaria Control Programme in its efforts to maintain access to treatment services, and improve quality and access to malaria diagnosis.

Another way to achieve effective malaria control through increasing coverage of preventive measures such as use of bed nets and expanding coverage of awareness campaigns.

Together with the national programme, WHO will reinforce the role of community in its effort to expand home-based management of malaria, and the importance of community health workers at community level through capacity building as well as providing them with malaria control tools.

In addition, data gathering and management will be strengthened including monitoring and evaluation of cases, disease management, prevention, partnerships, behavior communication change, and social mobilization activities.

Over the years, the Malaria Control & Elimination unit at the WHO country office in collaboration with the National Malaria Control Programme under the Federal Ministry of Health advocated for partnership and true engagement of the community across the board on different malaria control activities. Hence, the list of partners grow and includes UNICEF, UNDP, national and international NGOs, Ministries of Agriculture, Education, Interior, Information, the universities, academia, private partners, and the community at large.

With consolidated efforts by all concerned, Sudan has witnessed over the past few years a significant progress in malaria control in a number of areas in vector control and case management, through policy advocacy, institutional arrangements including capacity strengthening, operational areas of vector control implementation and operational research to guide malaria control efforts. This progress, however, faced several challenges including the development of and spread of vector resistance to insecticides and past management in general (legislation and regulation) among others.
Sudan maintained its polio-free status during the year 2011. The annual update of polio certification report was submitted to the Regional Certification Committee in April 2011. The annual update was accepted.

The polio eradication programme in Sudan is a fully integrated programme in EPI and that is the safeguard for the sustainability of the programme in the future.

All pillars of polio eradication (Routine immunization, SIAs and AFP surveillance) in Sudan recorded high standards.

Milestones

Sudan’s drive to eradicate polio has been one of the most successful health stories in Africa in recent years. It required a robust collaboration among partners, both technically and financially, to make this possible.

To face-upfront the challenge of keeping Sudan polio-free, the country continued National Immunization Days (NIDs) campaign in order to maintain high level of immunity amongst children. During 2011, there were 4 NIDs and 4 Sub-National Immunization Days (SNIDs) campaigns. More than 6 million children under 5 years of age were vaccinated against polio in each NID round and drops of vitamin A were given twice a year.

2011 witnessed the following interventions:

- The immunity status of children was boosted, and the proportion of children who received more than 3 OPV doses or more reached 95% of children.
- One of the challenges the programme faced during the biennium was the inaccessibility of some areas in South Kordofan and Blue Nile states due to security issues.
- In April 2011, Sudan submitted its national certification annual update on polio eradication and was accepted by the Regional Certification Committee. The update confirmed Sudan maintained the Acute Flaccid Paralysis (AFP) performance indicators at certification level in 2011. AFP rate exceeded 2/100,000 children under 15 and specimen adequate collection rate remained 97%.
- Sudan’s national polo laboratory (NPL) accreditation was renewed in 2011 after achieving excellent score for onsite review and proficiency test.
- WHO technical and financial support was maintained all through the biennium. This support was crucial to sustain the high quality of polio eradication performance.

Polio Eradication Project

The objective of the programme is to maintain the Sudan polio free status until the end of the eradication initiative.

Funds in 2010-2011: $13 M

Way forward

Sudan’s challenge is to maintain its polio-free status. To achieve this, it is mandatory to sustain political commitment at all levels as well as continuous intensified support of partners. It is also important to continue supplementary immunization activities, continue reaching children in inaccessible communities, continue to implement special plans for nomadic populations, optimize collaboration with routine immunization programmes, and mobilize the financial resources required to implement immunization activities in 2012-2013.

It is also crucial for Sudan to maintain certification standard surveillance. The country’s surveillance data will continue to be closely monitored and surveillance reviews will be implemented.
Routine immunization is given through fixed facilities, outreach activities and by mobile teams. The outreach and mobile teams activities often need more funds than fixed sites. Therefore, high coverage is contingent on the availability of financial resources. Routine immunization programme in Sudan has political support, translated into modest financial support. The Ministry of Finance contributed to the cost of EPI syringes and committed to cost-sharing with GAVI to procure new vaccines such as Pentavalent (diphtheria, Pertussis, Tetanus, Hepatitis B, and H. influenza) and Rotavirus vaccine.

The rotavirus vaccine was introduced in Sudan on 17 July 2011 in a high-level gathering in Khartoum. The event coincided with the commemoration day of the immunization programme’s launch in Sudan 35 years ago.

Routine immunization is given through fixed facilities, outreach activities and by mobile teams. The outreach and mobile teams activities often need more funds than fixed sites. Therefore, high coverage is contingent on the availability of financial resources. Routine immunization programme in Sudan has political support, translated into modest financial support. Hence the establishment of post marketing surveillance of intussusceptions and Government co-sharing of the cost of new vaccines has been successfully carried out across the biennium.

In addition, GAVI Alliance approved to support introduction of meningococcal A conjugate vaccine in 2012-2013. This is part of the massive introduction of the vaccine in 25 countries comprising the African meningitis belt, with the ultimate goal of eliminating the disease from Africa. Aside from the conjugate vaccine, GAVI will also support the vaccination campaign against yellow fever as well as the introduction of pneumococcal vaccine in the country’s routine vaccination programme.

Expanded Programme on Immunization

The objective is to contribute to the reduction of infant mortality through vaccinating more than 95% of infants against vaccine-preventable diseases.

Funds in 2010 - 2011: $1.95 M
Donors: GAVI Alliance and Measles Initiative Partnership

Milestones

Sudan has witnessed a remarkable improvement in routine vaccination coverage during the last few years. The coverage rate of Penta vaccine 3rd dose reached 53% and measles coverage rate was 87%. This was a result of the stable implementation of routine immunization for the prevention and control of vaccine-preventable childhood diseases.

2011 witnessed the introduction of Rota virus vaccine in Sudan, the first country in Africa to introduce Rota vaccine with support from the GAVI Alliance. Rota vaccine addresses severe diarrhoeal disease in infants and young children caused by Rotavirus. The Rotavirus gastroenteritis surveillance was established to measure the impact of Rotavirus vaccine among children under one year of age. For monitoring the possible side effects of Rota virus vaccine on the incidence of intussusceptions, a case series study was established in July 2011 with support of CDC Atlanta and WHO.

The country was challenged by measles outbreaks with cases reported from the three States of Darfur, Abyei, Blue Nile, Kassala and Red Sea. Measles vaccine follow up campaigns in 2011 were implemented, vaccinating more than 2 million populations covering not only children, campaigns also included adolescents as well as adults.

Routine immunization programme in Sudan has good political support which has been translated into modest financial support. Hence the establishment of post marketing surveillance of intussusceptions and Government co-sharing of the cost of new vaccines has been successfully carried out across the biennium.

In addition, GAVI Alliance approved to support introduction of meningococcal A conjugate vaccine in 2012-2013. This is part of the massive introduction of the vaccine in 25 countries comprising the African meningitis belt, with the ultimate goal of eliminating the disease from Africa. Aside from the conjugate vaccine, GAVI will also support the vaccination campaign against yellow fever as well as the introduction of pneumococcal vaccine in the country’s routine vaccination programme.

Way forward

WHO will continue to support the introduction of new vaccines. In 2012-2013, special focus will be provided to the introduction of new vaccines - namely Pneumococcal vaccine, Meningococcal A conjugate vaccine and yellow fever vaccine. In addition, WHO will work with the national programmes to keep the high routine vaccination coverage of Penta3. The country has been continuously challenged by measles outbreaks and to help address this issue WHO will support the introduction of measles 2nd dose as a strategy of measles elimination, as well as the strengthening of post marketing surveillance of Rota vaccine.
In collaboration with Partner Aid International (PAI) and German Red Crescent (GRC), WHO conducted an assessment of the rational use of drugs in Alsalam and Aboushouk IDPs camps in North Darfur. This was followed by two training sessions for health cadres working in the camp as well as health promotion campaign focusing on the rational use of medicine targeting the displaced population.

Milestones

Emergency Preparedness

The emergency programme aims to contribute to better access for vulnerable populations to quality primary and secondary health care services; to strengthen local capacity to predict, prepare for, respond to, mitigate and manage health risks; and to contribute to the reduction of maternal and child morbidity and mortality.

- Funds in 2010 - 2011: $19.2 M
- Donors: Common Humanitarian Fund, USAID, Government of Finland, Government of Spain, UN Central Emergency Response Fund, Italian Development Cooperation and ECHO

Sudan’s humanitarian need has been driven by conflict, displacement and vulnerability. The fighting in Abyei region, South Kordofan and Blue Nile States and the continued localized fighting in some parts of Darfur have led to new displacements. On top of the conflict, there is a huge challenge in the provision of services to populations who are already burdened by the return and reintegration process. These challenges are often compounded by access constraints, logistical difficulties and a host of natural disasters which together demand a sustained humanitarian effort to ensure the needs of the vulnerable populations are met.

WHO, through its emergency programme, supports vulnerable communities in conflict and post conflict-affected areas of Darfur, East, and the Three Protocol Areas - Blue Nile, South Kordofan and Abyei.

Activities in 2010-2011 revolved around provision of health assistance to directly respond to emergencies and to build capacity of health workers for stronger preparedness and response to health crises. During the latter part of 2011, WHO facilitated the transition of health support from humanitarian to early recovery in post-conflict areas.

Activities contributing to better access to quality primary and secondary health care services

- Provision of basic primary health, referral and secondary health care services to vulnerable population, IDPs, and host communities was supported by WHO. Essential drugs, kits and supplies were distributed to primary health facilities in Darfur, East Sudan and the Three Protocol Areas which were accessed by more than 5 million populations including displaced, returnees, and host communities. In 2011, 712 out of the 930 primary health facilities in Darfur representing 77% of the total facilities were functioning. Across Darfur, all 34 rural hospitals were operational and over 90% of the primary health care centres provided services to vulnerable communities particularly those in far-flung villages and security challenged localities.

In 2011, WHO and other UN agencies focused their support to 64% of the total number of rural hospitals, and to 52% of the total number of primary healthcare centres. Security concerns have limited the humanitarian space to assist population in need and implement interventions.
The crisis in South Kordofan, Abyei and Blue Nile showed that preparedness was key to mitigate the impact of any emergencies. In view of the Sudan referendum and the secession of South Sudan, the health contingency plan was put in place late 2010, to ensure access to health services and treatment of mass casualty for anticipated public health threats as results of conflict and displacement.

Despite the limited humanitarian access in many parts of Blue Nile, South Kordofan and Abyei, WHO continued to deliver health support through its collaboration with the Ministries of Health and local NGOs.

Human resource development through on-the-job training programmes as well as formal training courses for different cadres of SMoH and NGOs were conducted all through 2011. Some 5,600 health workers from Darfur, East Sudan and the Protocol Areas were trained in various health skills such as laboratory quality assurance, diagnosis of microbiological diseases, triage, basic life support, immediate life support, rational drug use, good storage practices, nosocomial infection prevention, and hospital statistics management.

With the yearly threats of floods and the conditions of camps for displaced population, environmental health (EH) has been integrated as priority intervention during emergencies. WHO through its partners and the Ministries of Health supported vector surveys, vector control campaigns targeting mosquito breeding sites, indoor residual spraying campaigns, as well as health promotion activities. Furthermore, WHO has been working to improve health facilities environmental health condition by setting-up waste management units, provision of equipment and insecticides, and implementing training activities. In 2011, 36 health care waste management campaigns were conducted in the states of Darfur and East Sudan, and around 1,400 EH staff and volunteers of the Ministries of Health and Health Partners were trained in EH.

Activities focused on strengthening local capacity to predict, prepare for, respond to, mitigate and manage health risks.

Early preparedness, capacity building of local staff and community has significant effect to prevent and contain/control outbreaks of diseases, and minimize deaths. WHO supported outbreak response and control activities including assistance to build capacity of Rapid Response Teams in different states and to preposition supplies essential medicines, diagnostic kits and reagent in areas prone to diseases outbreak.

In 2011, WHO supported Ministries of Health and partners by strengthening human resource capacity in disease surveillance and case management. Capacity building programmes were conducted for some 4,000 health workers from Darfur, East Sudan, and the 3 Protocol Areas, focusing on surveillance, disease prevention, early detection, diagnosis, treatment and control of communicable diseases as well as basic laboratory techniques. Likewise laboratory surveillance for confirmation of epidemic-prone diseases in South Kordofan, Abyei and Blue Nile by providing supplies and reagents, and by supporting training programmes for laboratory technicians.

In Darfur, the regularity of weekly surveillance reports under early warning alerts and response system (EWARS) system was 86.5% despite inadequate access during rainy season and reduction in humanitarian space. The benchmark for reporting timeliness has been set at 85%.
Over the last five years, Kassala state reported 3 outbreaks of meningitis (2006, 2007 and 2010). Meningitis epidemics added an enormous public health burden in the region frequently affected by other diseases like dengue fever and diarrhoeal diseases.

In 2010, outbreak of meningitis affected 5 localities of Kassala state. Rapid response teams in localities investigated reported cases and confirmed an outbreak of meningitis caused by N. Meningitides type A. A total of 58 cases were reported during the outbreak and the attack rate in the affected localities ranged from 0.01% - 0.18%.

During the first 5 months of 2011, the communicable diseases surveillance system in South Kordofan was well established with general reporting compliance of more than 90%. When the crisis erupted in June 2011, the reporting system collapsed and community-based surveillance of disease outbreaks was initiated because of a shortage in implementing partners including the absence of MoH facilities. By end of the year, WHO and SMoH revitalized the system with 70 sentinel sites working.

Activities focusing on safe motherhood and child survival interventions

In South Kordofan and Abyei, free health access was provided to children under five and pregnant women in state and 8 rural hospitals, and 30 primary healthcare centres. WHO supported facilities through the State Ministries of Health with essential supplies, logistics requirements, and technical expertise.

Over the years reports have shown that cases of measles, diarrhoea, acute respiratory infections, malaria and malnutrition have affected population of children caught up in emergencies in Sudan. Thus, immunization has been identified as one of WHO’s priority interventions, along with vitamin A supplementation. Across the priority states of WHO’s emergency programme, 7 national immunization days (NIDs) and 4 sub-national immunizations days (SNIDs) campaigns, 3 accelerated child survival initiative (ACSI) campaigns, and 1 measles campaign were conducted.

Around 400 health workers, village volunteers, and midwives underwent capacity building activities in the field of IMCI, emergency obstetric care and safe delivery.

WHO’s emergency programme operates in six sub-offices located in South Darfur, North Darfur, West Darfur, Kassala, Blue Nile, and South Kordofan, to ensure that field coordination and humanitarian interventions are delivered to communities.

Way forward

WHO will continue to prioritize the provision of life-saving assistance to vulnerable populations through improved needs analysis. Consequently, the delivery of assistance will focus on Ministry of Health promoting self-reliance and reducing dependence on aid, with programming that will enable early recovery activities and self-facilitate sustainable solutions. In addition, there is a need to increase focus on strengthening the capacity of national actors and local communities to respond to humanitarian needs and build resilience to future man-made or natural crises, especially in areas where humanitarian access is challenging.
The biennium witnessed outbreaks of diseases in Sudan. Among the diseases, dengue fever was considered a major concern as it hit the locality of Port Sudan in the Red Sea State. Port Sudan, where the country’s main port city is located and where heavy movement of population is reported, recorded more than 2,900 suspected cases of dengue fever between January 2010 and May 2010. Outdoor and indoor vector spraying activities were conducted and key supplies such as insecticides, fogging machines and spray tanks (as well as the hiring of vehicles for spraying activities) were provided by WHO to SMoH.

Milestones

Sudan continues to suffer from avoidable morbidity and mortality due to multiple outbreaks of communicable diseases. From 2006 to 2011, main disease outbreaks were measles, diphtheria, yellow fever, watery diarrhoea, bacterial meningitis, Rift Valley Fever, Crimean Congo Haemorrhagic Fever, gastro-enteritis due to E. Coli, dengue fever and viral hepatitis. With less than 50% of the population with access to piped water, and chlorination remaining inconsistent due to resource constraints, high burden and outbreaks of water borne diseases was expected.

The country has a sentinel surveillance system for communicable diseases. The reporting flow is well-organized from health facilities to locality, state and federal level. In 2011, more than 1,500 health facilities reported on 22 communicable diseases and on weekly basis, in a standard form. By end of 2011, the average reporting rate recorded in the early warning alert and response system (EWARS) was 85.5%, slightly higher compared to 83.5% in 2010. WHO has been supporting the system in terms of training, updating guidelines and forms, providing tele-communication support and supervisory visits in the field.

Communicable Diseases, Surveillance & Response

The objective of the programme is to reduce the health, social and economic burden of communicable diseases, particularly focusing on the detections and control of epidemics and implementation of International Health Regulations

Way forward

WHO will continue to digitize its surveillance system and will cover more sentinel sites as well as ensure building capacity for staff to properly use technology for surveillance.

Another essential intervention planned is the introduction of bio-safety level 3 at the Central Public Health Laboratory to ensure safe handling of pathogenic microorganisms.

The vaccination campaign with the “new” conjugate meningitis A vaccine will be conducted into two phases in 2012 and 2013. Phase 1 will cover states of Khartoum, Waite, Blue Nile, Gezira, Karima, Western Darfur, Northern Darfur and South Darfur. While Phase 2 will target Kassala, South Darfur, Northern Kordofan, Nile, Northern, Red Sea and White Nile.

WHO will continue to mobilize funds to address the needs and activities as per the work plan.

In addition, WHO will provide necessary support to Sudan in its implementation of IHR 2005.
Visceral leishmaniasis (VL) is affecting 6 states in Sudan namely Gedaref, Sinnar, North Darfur, South Darfur, Blue Nile and White Nile. Every year, an estimated 6,000 to 9,000 patients are being reported and treated. It has become a disease of children. WHO provides technical support to the National Leishmaniasis Control Programme and supports three treatment centres in Gedaref treating an average of 1,000 patients per year. In 2011, leishmaniasis taskforce was reactivated and has involved ground partners. The national control programmes of NTDs were recently strengthened, however, these were not as active as other disease prevention and control programmes due to insufficient funds to implement activities. In addition, the mycetoma control programme has been established at the Ministry of Health in 2010 after many years of research conducted by the University of Khartoum. This step was taken as result of evidences indicating increase in morbidity and disability due to mycetoma (also called madura).

All throughout the biennium, WHO focused its support for the following NTDs: leishmaniasis, guinea worm, schistosomiasis, leprosy and lymphatic filariasis. These were the activities conducted during 2011:

- Regular supply of anti-leishmaniasis treatment was secured for Ra-had area of Gedaref state.
- Regular drug supply for leprosy patients was maintained.
- By revitalizing disease surveillance at village-level in previously guinea worm endemic and at risk states, the Republic of Sudan has maintained its disease free status by end of 2011.
- Mass drug administration (MDA) campaigns against schistosomiasis for all age groups were conducted in 6 localities of 4 States covering 30% of the targeted population.
- MDA campaigns against schistosomiasis were conducted among school children in 5 states, reaching 50% of the targeted population. MDA results in reducing the parasites and interrupts transmission.
- Night blood film survey to guide the control of lymphatic filariasis was conducted in River Nile state.
- National guidelines on leprosy control for health care workers was developed.

Control of Neglected Tropical Diseases

The objective is to reduce the health, social and economic burden of communicable diseases, particularly focusing on the control of neglected tropical diseases (NTD).

**Milestones**

Prevention and control of high burden of neglected tropical diseases (NTDs) remains a major public health challenge in the country. WHO has been supporting the Federal Ministry of Health in its efforts to fight NTDs such as leishmaniasis also known as kala-azar, schistosomiasis, onchocerciasis, trachoma, guinea worm disease, lymphatic filariasis (commonly known as elephantiasis), and mycetoma.

The national control programmes of NTDs were recently strengthened; however, these were not as active as other disease prevention and control programmes due to insufficient funds to implement activities. In addition, the mycetoma control programme has been established at the Ministry of Health in 2010 after many years of research conducted by the University of Khartoum. This step was taken as result of evidences indicating increase in morbidity and disability due to mycetoma (also called madura).

All throughout the biennium, WHO focused its support for the following NTDs: leishmaniasis, guinea worm, schistosomiasis, leprosy and lymphatic filariasis. These were the activities conducted during 2011:

- Regular supply of anti-leishmaniasis treatment was secured for Ra-had area of Gedaref state.
- Regular drug supply for leprosy patients was maintained.
- By revitalizing disease surveillance at village-level in previously guinea worm endemic and at risk states, the Republic of Sudan has maintained its disease free status by end of 2011.
- Mass drug administration (MDA) campaigns against schistosomiasis for all age groups were conducted in 6 localities of 4 States covering 30% of the targeted population.
- MDA campaigns against schistosomiasis were conducted among school children in 5 states, reaching 50% of the targeted population. MDA results in reducing the parasites and interrupts transmission.
- Night blood film survey to guide the control of lymphatic filariasis was conducted in River Nile state.
- National guidelines on leprosy control for health care workers was developed.

**Way forward**

WHO has been working with the Federal Ministry of Health for the certification of Sudan as free of dracunculiasis or guinea worm by 2013. To be declared free of guinea worm disease, Sudan needs to have reported zero transmission and afterwards maintained active surveillance for at least three years.

To cover operational cost for mass drug administration (MDA) campaigns, WHO will continue its effort to actively secure for funds. MDA campaigns and vector control activities will be integrated into the neglected tropical diseases programmes.

WHO together with health partners will continue to firm-up Vision 2020 plans in all States where rapid assessment for avoidable blindness (RAAB) survey were carried out. Vision 2020 is basically a global initiative through the World Health Organization to eliminate the main causes of avoidable blindness by the year 2020. WHO through the Sudan country office will continue uninterrupted and prompt provision of drug supplies. Likewise, capacity building of NTDs surveillance and health information system at all levels will be strengthened.
On the occasion of the World Health Day in 2010, the World Health Organization (WHO) in Sudan in collaboration with the Federal Ministry of Governance (FMoG) and Federal Ministry of Health (FMoH) and health partners called upon local authorities, advocates for healthy living, and concerned residents to look into the health inequities in cities and take urgent actions.

The urban health campaign in Sudan was launched on 6 June, through a ceremonial gathering of national and local government officials and health sector partners at Burj Al-fateh in Khartoum. During the launching event, sixteen (16) cities and localities in Sudan received certificates of recognition for their commitment to prioritize health concerns in planning development for cities and localities and to ensure healthy living condition for the local populace.

### Health Protection, Promotion & Community Development

#### Noncommunicable Diseases and Mental Health

The objective of the programme is to prevent and to reduce disease, disability and premature death from chronic noncommunicable conditions, mental disorders, violence and injuries.

#### Noncommunicable diseases (NCD) such as diabetes, cardiovascular diseases, risk factors, chronic respiratory diseases and cancer share the major causes of morbidity and mortality in Sudan. They cause significant challenges burden on public health services.

Taking into consideration the complex emergencies in which the country underwent for decades, mental health has also been seriously considered as a priority activity among the displaced population and those affected by years of conflict. Though Sudan was a pioneer country in mental health services in the Eastern Mediterranean Region (activities initiated during the 1970s), introduction of innovative approaches and enhancement of psychosocial interventions to address the needs of traumatized populations were considered necessary.

Between 2010 and 2011, the following were the developments under these programmes.

- To address NCDs in Sudan, institutional capacity of NCDs and mental health was strengthened through development of NCDs and mental health strategies, management guidelines and protocols.
- Production of the first cancer report in Sudan which provides information on the most common cancers in Sudan.
- Knowledge, attitudes, and practices (KAP) survey on main NCDs risk factors was conducted to look into the risk factors for the development of NCDs.
- Family physicians students were trained on MNH in Gezira State in East Sudan for future integration of mental health into primary healthcare.

---

**Funds in 2010-2011:** $670,015

**Donors:** Government of Spain, Kuwait Fund
Community-based Initiatives, Social Determinants of Health, and Gender

The objective of the programme is to address the social and economic determinants of health, enhance health equity, institutionalize community-based initiatives and integrate pro-poor, gender-responsive, and human rights-based approaches in National Health Policies.

Community-based initiatives, social determinants of health, and gender are three interwoven interventions to ensure equality in health and good quality of life.

These were WHO’s support during 2010-2011:

- Expansion of community-based initiatives (CBIs) to 14 states, 127 communities
- Registration of 17 cities to be part of Healthy Cities Initiative, implementation started in 8 cities by training of governmental authorities on healthy cities guidelines, compilation of city profiles and planning
- Formulation of multi-sectoral committees for development of plan of action for social determinants of health (SDH)
- Assignment of a national gender focal person
- Development of gender in health training manual
- Training of national & state health cadres on gender mainstreaming in health
- Adaptation of Urban Health Equity Assessment and Response Tool (Urban HEART), a guide for local and national officials to identify health inequities and plan actions to reduce them.

Health Promotion & School Health

The objective of the programme is to promote health and development and prevent or reduce risk factors for health conditions associated with all risk behaviours.

Milestones

In support of Sudan’s efforts to gather information about general health practices and beliefs in Sudan, the knowledge, attitudes, and practices (KAP) survey for behaviour risk assessment was conducted, reviewed and finalized. The KAP survey results have become the basis for health promotion interventions.

WHO supported the development of health promotion policy, a tool for mounting an integrated vision of health promotion in relation to Sudan’s different public health issues. Similarly, WHO collaborated with the Ministry of Health to develop school health policy, a strategic means to prevent important health risks among youth and to engage the education sector in efforts to change the educational, social, economic and political conditions that affect risks.

To ensure proper implementation of health promotion interventions in the field, three community health promoters manual were developed which were adapted from the regional training manuals. This was in addition to the produced three catalogues for maternal and child health, non-communicable diseases, and disaster and emergency.

As part of the holistic approach for promoting health, WHO assisted the establishment of a mobile video library with various health promotion materials, covering issues such as diarrhoea, dengue fever, safe water, safe food, hand washing, personnel hygiene, immunization, exclusive breast feeding, home management of sick child, safe motherhood and flood preparedness.

The global school-based student health survey (GSBUS) was conducted to measure and assess the behavioural risk factors and protective factors in key health topics among young Sudanese aged 13 to 15 years.
The main strategic issues under this intervention are the need to strengthen national capacities to assess and address malnutrition and diet-related problems through the development and implementation of advanced nutrition programmes; and the development of standards, guidelines and strategies for nutrition and food safety.

In 2011, WHO fully assisted the Federal Ministry of Health in the implementation of the following activities:

- Adoption of Sudan as a regional training centre for severe acute malnutrition/community-based management of acute malnutrition
- Adaptation of inpatient care for severe acute malnutrition
- Introduction of essential nutrition package, a package of interventions aimed at integrating nutrition and health activities to effectively address the nutrition needs of children under age, in five states in Sudan
- Strengthening of nutrition information system and training of care providers in the management of severe acute malnutrition
- Assessment of infant and young child feeding training module/lesson in medical and midwifery schools
- Development of food inspection, sampling manual and food safety strategies and standards

The objective of the programme is to provide the Federal Ministry of Health with the required technical guidance to monitor, prevent and reduce malnutrition and diet related problems in Sudan.

Nutrition and Food Safety

The main strategic issues under this intervention are the need to strengthen national capacities to assess and address malnutrition and diet-related problems through the development and implementation of advanced nutrition programmes; and the development of standards, guidelines and strategies for nutrition and food safety.

In 2011, WHO fully assisted the Federal Ministry of Health in the implementation of the following activities:

- Adoption of Sudan as a regional training centre for severe acute malnutrition/community-based management of acute malnutrition
- Adaptation of inpatient care for severe acute malnutrition
- Introduction of essential nutrition package, a package of interventions aimed at integrating nutrition and health activities to effectively address the nutrition needs of children under age, in five states in Sudan
- Strengthening of nutrition information system and training of care providers in the management of severe acute malnutrition
- Assessment of infant and young child feeding training module/lesson in medical and midwifery schools
- Development of food inspection, sampling manual and food safety strategies and standards

The objective of the programme is to provide the Federal Ministry of Health with the required technical guidance to monitor, prevent and reduce malnutrition and diet related problems in Sudan.

Way forward

Noncommunicable diseases and mental health

NCDs and mental health services will be integrated into primary health care, and non-communicable diseases and mental health care providers will be trained on integration of services. WHO will ensure provision of mental health services in emergency affected areas and conduct NCDs awareness raising activities based on the KAP results. WHO will also focus on capacity building of national staff in management of NCDs and Cancer Registry.

Maternal, Neonatal, Child and Adolescent Health

WHO will support the Ministry of Health’s initiatives to increase access to maternal, neonatal and child health services by expansion of antenatal/postnatal care, family planning and IMCI programmes. As consistent approach to provision of health services across all populations, WHO will support the establishment of adolescent health services in communities, improve management of referral cases through separation of emergency obstetric care, and emergency triage assessment and treatment services. Moreover, WHO will continue its support to institutionalize maternal death review system as well as strengthen the capacity building activities for health cadres in management and care provision through pre-service and in-service training courses.

CBI, SDH, and Gender

WHO will continue its technical support to address social determinants of health and human rights through expansion of community-based and healthy cities initiative, focusing on community empowerment on development agenda, partnership, inter-sectoral collaboration and reducing inequities in health.

In order to enhance gender mainstreaming, gender training activities will be supported as well as gender sensitivity assessment to identify practical and direct links of gender issues to programme areas.

Nutrition and Food Safety

Focus will be made on strengthening the management and prevention of severe acute malnutrition both in routine settings as well as in emergencies, and promotion of good infant and young child feeding practices in communities. WHO will actively support the Ministry of Health and other nutrition partners in the expansion of nutrition surveillance system in other parts of the country based on Darfur experience. Technical support will be provided to Sudan to help reduce the burden of food borne diseases and conduct close monitoring of food safety by building the capacity on food inspection.

Health Promotion & School Health

Expansion of health promotion interventions based on the risk behavior assessment will be implemented and will cover areas of maternal and child health, communicable disease, emergency, epidemic and environmental health, non-communicable diseases, and healthy lifestyle through community health promoters.
Sudan’s Health System

The programme’s objective is to strengthen the national capacity for the organization and management of health services, to strengthen the national leadership and capacity to formulate evidence-based health policies and strategies, to strengthen information and knowledge for building capacity in developing systems and sustainable policy for health workforce, and to improve access to quality and rationally used medical products and technologies.

Funds in 2010 - 2011: $ 2.2 M
Donors: Multi-Donor Trust Funds, The Global Fund to fight AIDS, Tuberculosis and Malaria, International Health Partnership (IHP+), Global Health Workforce Alliance, European Union

Planning, Policy, Health Economics, Information Management, and Curative Medicine

Milestones

In the area of Health Systems and Services Development (DHS), WHO is involved in developing systems such as planning and policy formulation, health economics, information management and curative medicine.

Under curative medicine, WHO assisted the FMoH in developing a private sector health policy, defining a policy for national employment and deployment of specialists in states, developing an investment plan for rehabilitation and refurbishment of rural hospitals, re-equipping and refurbishing of secondary care health facilities in states. In addition, a one week course in leadership and management was designed and then delivered for health managers at the state and locality levels. A short course was also designed for administrative and finance staff at the state and locality with the aim for inculcating good management practices.

To ensure quality and safety in healthcare facilities, WHO supported capacity building programmes for surveyors on accreditation for hospitals at all health system levels, for quality managers on quality in healthcare, and for orienting hospital managers in accreditation of health care facilities. In addition to assisting in developing standards for primary, secondary and tertiary care, a national workshop was conducted to endorse these standards.

Data analysis for the National Health Accounts was conducted following the completion of two surveys namely Household health expenditure and health services utilization survey and mapping of financing agents. In order to introduce health economics, a short course was designed and delivered for the health managers. WHO worked with Khartoum State Health Insurance Corporation in conducting the feasibility/cost effectiveness analysis or Actuarial study as a prelude to embarking on universal coverage in Khartoum state.
Human resources for health is an integral component of health systems development. Without an effective human resources management, there will be no major improvement in the country’s health system. During the biennium, while efforts at building capacity continued, support was provided to equip training centers, libraries, and institutes.

WHO supported the Sudan Medical Council (SMC) in improving the quality of medical education by developing the accreditation standards for postgraduate and undergraduate medical schools and designing a training module and a guideline for medical ethical practice and profession.

WHO assisted Sudan Medical Specialization Board (SMSB) that organizes postgraduate training programme by updating the curricula used for the teaching and training of different specialties and by building capacity of SMSB teaching staff on modern teaching methodologies and concepts. In addition, basic audio-visual equipment was provided to facilitate the training programmes conducted at the SMSB. An important milestone was setting up a secretariat for health systems development, thus mandating SMSB to accredit courses in health management.

WHO supported the Academies of Health Sciences (AHS) by providing skill labs and drafting of a comprehensive investment plan for rehabilitation and refurbishment of AHS, and building the systemic and structural capacity of schools affiliated with AHS.

A Directorate of Continuing Professional Development (CPD) is the hub for providing in-service training, both at its headquarters in Khartoum and regional centers. WHO assisted in developing a policy for CPD and assisted in providing basic audio-visual facilities to improve the quality of training programmes.

The Public Health Institute accredited by SMSB was established and WHO assisted in developing systems including the following:

- development of the institutional manual, including course handbooks, students’ guides, institutional routines and standard operating procedures.
- finalization of curricula and modules for the postgraduate courses in public health.
- development of essential institutional support systems: establishing a students and reference library (conventional as well as e-library).
- development and adaptation of library system.
- development of students’ support (administration, finance and students’ affairs).

WHO tools for human resources mapping was piloted in Sudan along with other three African countries.

Another major activity was WHO’s support to the health system observatory. The observatory will act as a national electronic resource centre to hold a database on health statistics, disaggregated by states, gender and age, and to develop on standardized templates health system profiles, in a phased manner for national, state and localities.

WHO, with resources from Global Health Workforce Alliance, assisted the Human Resource for Health (HRH) observatory in upgrading its website (www.hrhobservatory.sd), developing HRH strategic plan, and updating the current HRH database from organizations at federal level such as Medical Corp, Police Medical Services, Health Insurance and the States.
A major intervention aiming at organization and management of primary care and first level referral care was initiated. A study was launched to assess capacity in terms of number of health managers, their qualification and skills, the support systems, and the enabling environment. Protocols for state and locality health management teams were developed.

In order to assure comprehensive integrated health services, a framework was developed for provision at the community level and job description was developed/redefined for the community health workers. This will form the basis for designing training material. Similarly a framework was developed for integrated services at the facility level to form the basis of curricula and training material for multipurpose health workers.

WHO will continue to support the Federal Ministry of Health in strengthening national health workforce and addressing the challenges such as brain drain from public to private as well as to the other countries, correcting the imbalance in skill mix, and improving the shortage of skilled health workforce. In addition, WHO will work with Ministry of Health in strengthening the accreditation system for teaching and training facilities and the curricula, whether for pre-service or in-service teaching and training, as well as update the curricula and training methodology. Similarly, teachers and practitioners will be supported for continuing professional development.

WHO will support the Ministry of Health to improve the national health laboratory and build up the capacity of teaching and general hospitals. Also, the system of health technology management will be strengthened. In addition to supporting the National Medicine & Poisons Board in developing guidelines for importing medical devices, a study will be launched for determining the factors influencing the pricing of medicines in order to generate evidence for organizing a policy dialogue.

WHO will support initiatives for strengthening health financing functions such as supporting the National Health Insurance Fund in conducting actuarial study, and organizing community based health insurance schemes. A study will be launched to determine a formula for equitable distribution of resources between sectors and regions, and within sector between different programmes and institutions. For good governance and improving the management capacity, state and locality health management teams will be supported and trained and their work environment will be improved. A comprehensive programme for integrating the vertical programmes into the mainstream primary health care will be supported. In order to expand services to the communities particularly in the remote areas, community health workers will be trained.
WHO would like to thank its Donors for their generous support.

Bill & Melinda Gates Foundation  
Carter Center  
Centers for Disease Control and Prevention-Atlanta  
Common Humanitarian Fund  
Australia  
Denmark  
Ireland  
Norway  
Netherlands  
Spain  
Sweden  
UK DfID  
European Union and ECHO  
GAVI Alliance  
Global Environment Facility  
The Global Fund to fight AIDS, Tuberculosis and Malaria  
Global Health Workforce Alliance  
Government of Finland  
Government of Germany  
Government of Netherlands  
Government of Norway  
Government of Saudi Arabia  
Government of Spain  
International Health Partnership  
Italian Development Cooperation  
Kuwait Fund  
Measles Initiative Partnership  
Multi-Donor Trust Funds  
Rotary International  
UK’s Department for International Development  
UN’s Central Emergency Response Fund  
United States Agency for International Development

Partnership remains key in shaping a healthier Sudan.