CDC's Neglected Tropical Diseases Program

Young children in Nigeria gather during evaluation of Guinea worm disease prevention and control efforts.

Neglected Tropical Diseases

More than 1 billion people—one-sixth of the world's population—suffer from one or more Neglected Tropical Diseases (NTDs).

- NTDs are a group of infectious diseases that are the source of tremendous suffering because of their disfiguring, debilitating, and sometimes deadly impact. In addition to causing severe sickness and disability, they compromise mental and physical development, contribute to malnutrition, reduce school enrollment and hamper economic development.
- Seven NTDs – lymphatic filariasis (LF), onchocerciasis, schistosomiasis, infections from soil-transmitted helminths (hookworm, *Ascaris*, whipworm), and trachoma, can be controlled or even eliminated by providing safe and effective medicines to individuals in affected communities through mass drug administration (MDA).
- Along with MDA, efforts to control the mosquitoes, blackflies, and other vectors that transmit these diseases, and to improve basic water, sanitation, and hygiene are highly effective against these NTDs.
- MDA-based programs are considered one of the best buys in public health – with a low cost of about $0.10 to $0.50 per person/year and the benefit of helping prevent or treat several different diseases.
- These programs have benefited from donations of medications by major pharmaceutical companies, support from the U.S. Government (led by the U.S. Agency for International Development), the Bill and Melinda Gates Foundation, the Japan International Cooperation Agency, and the U.K. Department for International Development, among others.

Guinea worm disease (GWD), an NTD for which no treatment exists, causes agonizingly painful blisters in the skin when the worm slowly exits the body. With country leadership, health education, medical management of cases of disease, and use of other measures, including simple, low-tech filters for drinking water, this devastating disease is now on the verge of being eradicated, Nigeria, which had 650,000 infected persons per year when the public health program started, currently reports none.

Recent public health successes

- **Guinea worm disease** affected some 3.5 million people in the 1980s, but in 2009 only 3,200 cases were reported.
- Since 2000, more than 2 billion treatments targeting **lymphatic filariasis** have been delivered, reaching people in 48 of the 81 countries where the disease is common.
- **Onchocerciasis** has been eliminated in 7 of the 13 major areas where the infection was being transmitted in the Americas, and the debilitating blindness it causes has been prevented throughout much of sub-Saharan Africa.
- Blinding **trachoma** has been eliminated from Iran, Mexico, Morocco, Oman and the United States; additional countries are expected to eliminate this devastating disease.

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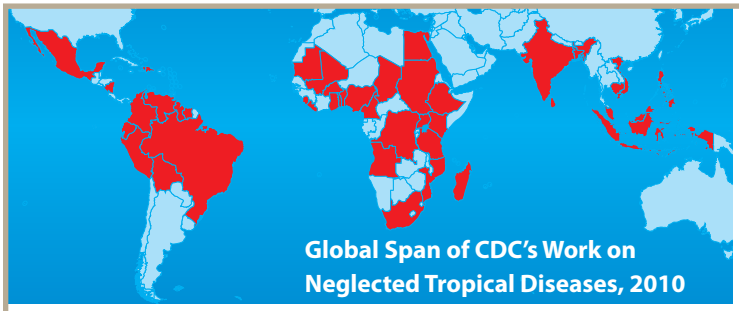

CDC and NTDs

For more than 2 decades, CDC has been working to reduce the illness, disability, and death caused by NTDs. Together with our partners, we help to:

- Develop global policy and guidelines for NTD control programs
- Conduct research to improve diagnostic and other tools needed to monitor programs
- Provide technical assistance to countries and other partners to build capacity and improve programs
- Monitor and evaluate progress towards elimination/control of NTDs
- Study additional NTDs to identify and develop better tools and approaches to control and eliminate them

CDC and USG Initiatives

The U.S. Global Health Initiative (GHI), announced by President Obama in May 2009, represents an expanded approach to U.S. Government-supported NTD control and elimination efforts, underscoring current activities and emphasizing strategies to coordinate NTD and other disease control efforts to prevent avoidable deaths and illnesses.

The goals related to NTDs under GHI are to reduce the prevalence of seven NTDs by 50 percent among 70 percent of the affected population, and to contribute to the 1) elimination of onchocerciasis in the Americas by 2016, 2) elimination of lymphatic filariasis globally by 2020, and the 3) elimination of leprosy.

CDC is a partner in the U.S. Government NTD and Global Health Initiatives. Our critical contributions include scientific research to guide programs and policies, such as the evaluation of a test for LF antibodies that will be crucial for knowing when transmission of the disease is stopped in Africa. CDC is also well poised to provide technical expertise related to monitoring and evaluation of program efforts to assess progress, and consultation and training to Ministries of Health and other partners to help build global capacity to control and eliminate NTDs.

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CDC NTD Research

CDC experts contributed to the science that informs current global health policies and programs for NTDs such as LF and onchocerciasis. For example:

- Studies conducted by CDC and partners on LF demonstrated that mass treatment with drugs is a safe and effective way to control and eliminate NTDs.
- CDC and its partners helped to draft the World Health Organization (WHO) monitoring and evaluation guidelines now being used in countries to assess progress of initiatives.
- CDC developed and evaluated new tools and approaches to control and eliminate onchocerciasis, LF, and schistosomiasis. These tools are being used by several countries, including the People's Republic of China, Morocco, and Togo, to document progress and achievement of program goals.
- Most recently, CDC researchers demonstrated that LF health education campaigns and morbidity control programs in India can increase adherence with MDA for LF by as much as 40%.

Looking towards elimination and eradication

There is still much to be done to help countries start, scale up, and regionally coordinate integrated programs. For some NTDs, eradication — the permanent elimination of a disease-causing organism — is within reach. CDC is working with the WHO, USAID, and other partners to provide scientific leadership toward the control and elimination of NTDs, by:

- Developing more cost-effective tools for mapping, validating coverage, and measuring impact
- Putting into practice a process to stop MDA
- Addressing critical research questions related to integrated programs, interrupting transmission, and ensuring the effective use of resources
- Developing and evaluating critical diagnostic tools needed for program monitoring and interrupting transmission of LF and onchocerciasis
- Developing strategies to rapidly detect and respond to any recurrence of disease after MDA is stopped
- Integrating NTD programs with other global health efforts.

For more information, see http://www.cdc.gov/globalhealth/ntd/

A patient being treated for LF in Orissa State, India