



The U.S. Government Response to Global Neglected Tropical Diseases

May 2011

Neglected Tropical Diseases (NTDs): A group of parasitic and bacterial tropical infections that primarily affect the most impoverished and vulnerable populations in the world and, as such, have received scant attention until recently.^{1,2,3}

Overview

More than 1 billion people — one-sixth of the world’s population — are infected with one or more NTDs, an additional two billion are at risk, and each year, half a million people die as a result. NTDs have low mortality but high morbidity rates and are the fourth most devastating group of communicable diseases behind lower respiratory infections, HIV, and diarrheal diseases — ranking higher than either malaria or tuberculosis. The majority of the NTD burden is concentrated in Africa, Asia, and Latin America.^{1,2}

NTDs have only recently garnered greater international attention from the U.S. and other global donors, spurred on by growing recognition of their potential threat to the achievement of the UN Millennium Development Goals (MDGs).^{4,5} In addition, the development and expansion of an integrated NTD treatment approach capitalized on the availability of safe and effective treatments for the most prevalent NTDs. The U.S. government launched its first NTD program, based at the U.S. Agency for International Development (USAID), in 2006. The program expanded under the U.S. NTD Initiative, announced by President Bush in 2008. Most recently, President Obama called greater attention to and proposed increased funding for NTDs with the May 2009 launch of the U.S. Global Health Initiative (GHI).⁶

Current Global Snapshot

NTDs are grouped together due to their often chronic, disfiguring, and stigmatizing impact; their close association with poverty; and their geographic overlap. Individuals are often infected with multiple NTDs simultaneously. While there are numerous NTDs in the world, the World Health Organization (WHO) has highlighted 17 that particularly impact poor, politically marginalized populations; cause significant morbidity and/or mortality; are neglected by research; and can be controlled using effective methods.⁷ A subset of NTDs can be controlled and even eliminated with low-cost and effective interventions, and these “tool-ready” NTDs are increasingly the focus of donor efforts, including the USAID NTD Program (see Figure 1).

- **Impact of NTDs:** Infection with NTDs often results in severe disability, disfigurement, blindness, and malnutrition. This health impact negatively affects economic development, hampers educational achievement and cognitive development, and reduces agricultural productivity and food security. In effect, NTDs help perpetuate the cycle of poverty in developing countries.⁸ Lack of access to clean water, health services, adequate housing, and good sanitation contribute to NTDs’ prevalence and impact.² Women, children, and ethnic minorities are more vulnerable to and suffer disproportionately from NTDs.¹
- **Effective NTD control interventions:** A number of strategies have been successful in controlling and, in some areas, even eliminating certain NTDs. Although many interventions are relatively inexpensive, challenges persist in delivering tools and services to the most at-risk populations. Today, the recommended strategy is an integrated control approach targeting multiple NTDs simultaneously through

mass drug administration (MDA), combined with community-level transmission control measures. This allows programs to reach more people and increase cost-efficiencies over tackling each disease separately.⁹ MDA often uses the “rapid-impact package,” which is a combination of four drugs used to prevent or treat the seven most prevalent NTDs for as little as \$0.25–\$0.50 per person per year.^{3,10} Additional measures such as promoting clean water, sanitation, and hygiene (WASH) and good veterinary public health also play a critical role in addressing the underlying causes of NTDs.

Figure 1: Seven NTDs Targeted by USAID’s NTD Program^{1,3}

Disease	# of People Affected	Causes
Ascariasis (roundworm)	807 million	ingesting contaminated food, water, or soil
Hookworm	576 million	soil-transmitted
Lymphatic filariasis (elephantiasis)	120 million	parasitic <i>filariasis</i> worms, transmitted by mosquitoes
Onchocerciasis (river blindness)	37 million	infection with worms transmitted by black flies that breed near fast-moving rivers and streams
Schistosomiasis (snail fever)	207 million	contaminated fresh water inhabited by snails carrying the parasite
Trachoma	84 million	contact with an infected person’s eye discharge (on hands or clothes, or on the feet of flies)
Trichuriasis (whipworm)	604 million	ingesting soil or unwashed vegetables contaminated with human feces

The U.S. Government’s Response^{2,5}

Historically, the U.S. government’s response to NTDs was relatively limited, focusing largely on research and surveillance conducted by the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and the Department of Defense (DoD). In recent years, U.S. attention to and funding for NTDs have increased markedly:

- In 2006, Congress first appropriated funds to USAID specifically for integrated NTD control. As a result, USAID launched its NTD Program in five countries with an initial five-year target to support 160 million treatments for the seven most common NTDs for at least 40 million people.¹¹
- In 2008, President Bush announced the U.S. NTD Initiative, building on the USAID NTD Program with an expanded target of supporting treatment to more than 300 million people in Africa, Asia, and Latin America.
- In 2009, President Obama launched the GHI, which includes the following NTD targets: reduce the prevalence of seven NTDs by 50% among 70% of the affected population, contributing to the elimination of onchocerciasis in the Americas by 2016, elimination of lymphatic filariasis globally by 2020, elimination of blinding trachoma by 2020, and elimination of leprosy.^{12,13}

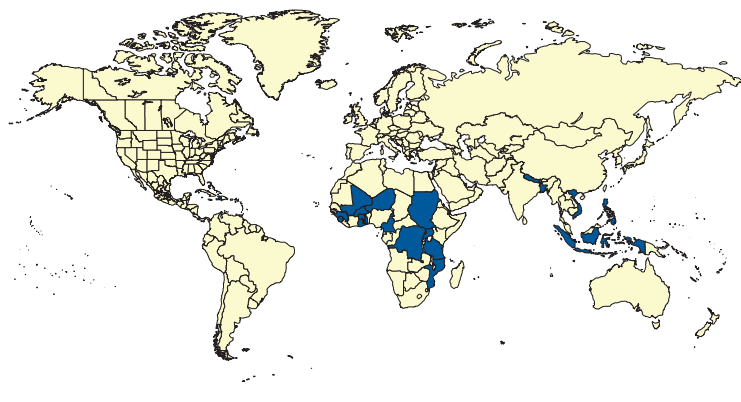
- USAID's NTD Program has exceeded its initial five-year target by supporting the delivery of approximately 418 million NTD treatments to 185 million people.¹⁴ Additionally, the Program reports cost efficiency savings as a result of merging formerly vertical efforts that addressed NTDs separately. For example, its cost per treatment has been reduced by 41%.⁹

Structure and Approach^{2,9,14}

USAID serves as the lead implementing agency for U.S. global NTD efforts. Several other agencies, including CDC, NIH, DoD, and the U.S. Food and Drug Administration (FDA), are also involved in responding to NTDs.

- USAID's NTD Program targets seven NTDs that are responsible for the overwhelming majority of the NTD burden and are particularly amenable to control due to the availability of effective drugs against these diseases. Using recent interventions such as the rapid-impact package, the U.S. supports endemic countries in scaling-up MDA. CDC is a key partner, receiving support from USAID to focus on operational research issues.
- USAID's NTD Program initially focused on five fast-track countries (Burkina Faso, Ghana, Mali, Niger, Uganda), and has since expanded to include 14 more (Bangladesh, Cameroon, the Democratic Republic of Congo, Guinea, Haiti, Indonesia, Mozambique, Nepal, Philippines, Sierra Leone, Southern Sudan, Tanzania, Togo, Vietnam) (see Figure 2). Under the GHI, the Program aims to reach 30 countries by 2014, depending on funding availability.

Figure 2: USAID NTD Program Countries, FY 2010^{9,14}



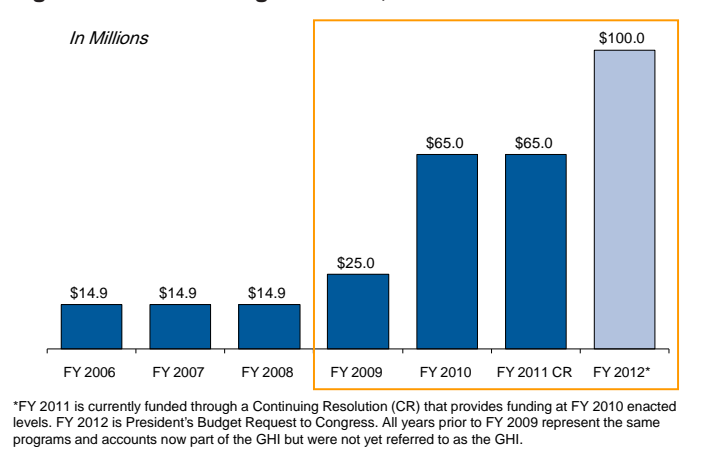
- Additional U.S. NTD efforts, particularly at NIH and CDC, focus on encouraging research into and adoption of control tools for NTDs, including the seven targeted NTDs as well as others not yet considered "tool-ready" (Buruli ulcer, Chagas disease, dengue, human African trypanosomiasis, leishmaniasis).^{15,16} DoD also conducts NTD research.¹⁷ The FDA administers the "priority review voucher" program for NTDs, a congressionally-authorized program designed to incentivize the private sector to invest in new NTD drug development by issuing a "voucher" to expedite the FDA review process for a different drug.¹⁸
- U.S. NTD efforts are coordinated with other international partners, regional strategies, and funding mechanisms. For example, the pharmaceutical industry donates several NTD drugs to many of the countries that also receive USAID NTD support, and USAID has estimated the value of these donations in U.S.-supported countries at more than \$1.4 billion during the Program's first three years.¹⁰ The low cost of the rapid-impact package is partially due to drug donations.³

U.S. Government Funding¹⁹

- Congress first appropriated funding for NTD control efforts to USAID in FY 2006, providing \$15 million each year from FY 2006 through FY 2008. With the launch of the U.S. NTD Initiative, funding was increased to \$25 million in FY 2009 and \$65 million in FY 2010. Although the President's FY 2011 budget request for \$155 million would have been a 138% increase in NTD funding, most global health programs will be funded in FY 2011 at or below FY 2010 levels. For FY 2012, the

President requested \$100 million (see Figure 3). Additional funding is used for NTD research at CDC and NIH, although it is not specified by Congress nor currently counted as part of the GHI.

Figure 3: GHI Funding for NTDs, FY 2006–FY 2012*¹⁹



Looking Ahead

New attention to and increased funding for NTDs, when coupled with the availability of low-cost and effective interventions to control and even eliminate some NTDs, offer a unique opportunity to significantly reduce the NTD burden among the world's poor. However, with continued global funding shortages, including budget constraints in the U.S., concerns have been raised about the ability to sustain and augment successes, particularly given that the global economic crisis affects not only donor resources but also exacerbates the underlying conditions of poverty that fuel NTDs. Despite these constraints, several opportunities exist to enhance the response, including improving strategic donor coordination; realizing further cost efficiency savings; securing additional donated drugs; further integrating NTD efforts with other U.S. programs, such as HIV/AIDS, TB, and malaria programs; and addressing outstanding research challenges, including identifying cost-effective interventions for NTDs not yet "tool-ready."

¹ WHO, *Neglected Tropical Diseases: Hidden Successes, Emerging Opportunities*, 2009.
² USAID NTD Program, www.neglecteddiseases.gov.
³ Hotez PJ, et al., "Control of Neglected Tropical Diseases," *NEJM*, Vol. 357 (10), 2007.
⁴ United Nations. *The Millennium Development Goals Report 2008*; September 2008.
⁵ CRS, *Neglected Tropical Diseases: Background, Responses, and Issues for Congress*, Jan. 2011.
⁶ White House, Statement by the President on GHI, May 5, 2009.
⁷ WHO, *Working to Overcome the Global Impact of Neglected Tropical Diseases*, 2010.
⁸ Hotez PJ, et al., "Rescuing the bottom billion through control of neglected tropical diseases," *Lancet*, Vol. 373, 2009.
⁹ USAID, Portfolio Review: Neglected Tropical Diseases, Feb. 17, 2011.
¹⁰ Linehan M, et al., "Integrated Implementation of Programs Targeting NTDs through Preventive Chemotherapy: Proving the Feasibility at National Scale," *AJTMH*, Vol. 84 (1), 2011.
¹¹ USAID and RTI International. *Control of Neglected Tropical Diseases Project Fact Sheet*; 2009.
¹² U.S. Government, *USG GHI Strategy Document*, March 2011.
¹³ USG, *GHI Consultation Document*, Feb. 2010.
¹⁴ KFF personal communication with USAID, April 2011.
¹⁵ WHO, "NTDs: Innovative and Intensified Disease Management," 2007.
¹⁶ NIH/NIAID, <http://www.niaid.nih.gov/topics/tropicalDiseases/research/Pages/role.aspx>.
¹⁷ See, for example, WRAIR, *Index to Publications 2009*; <http://www.ghtcoalition.org/dod.php>.
¹⁸ FDA, *Guidance for Industry Tropical Disease Priority Review Vouchers [draft]*, October 2008.
¹⁹ KFF analysis.