NTDs in the United States

NTDs, or neglected tropical diseases, affect over 1.4 billion individuals worldwide and are emerging in the U.S., yet they receive little attention. Funding for prevention, diagnosis, and treatment falls far short of need. These diseases are often disabling or fatal if left untreated.

**NTDs Here at Home**

- An estimated 300,000 people are infected with Chagas disease in the U.S. The first documented case of mother-to-child transmission of Chagas disease in the U.S. was reported in **Virginia** in 2012. Source: CDC
- It is estimated that 10% of all ER seizure patients in Los Angeles, **California** have cysticercosis. Source: PLOS Neglected Tropical Diseases, 2007
- **Louisiana** has seen its first documented case of Chagas disease, has the second highest number of West Nile fatalities, and had widespread toxocariasis in the 1980s (comprehensive surveying has since stopped). Source: PLOS Neglected Tropical Diseases, 2008
- In **Texas**, there have been 1,355 reported West Nile cases and 52 fatalities in 2012 alone. Source: CDC West Nile
- CDC studies indicated that 5% of Key West, **Florida** residents were infected with dengue in 2009. Evidence of past dengue infection was detected in 40% of Brownsville, **Texas** residents. Source: CDC, CDC Dengue Update

**What are NTDs?**

- **Chagas disease** is spread through bloodsucking insects (kissing bugs) and can cause heart failure.
- **Cysticercosis** is a parasitic infection that leads to seizures and epilepsy.
- **Dengue fever** is a virus spread by mosquitoes that causes extremely high fever.
- **Leishmaniasis** can cause disfiguring skin sores and in severe cases, internal organ damage.
- **Schistosomiasis** is a parasitic infection that can cause abdominal pain and bladder damage.
- **Trachoma** is a bacterial eye infection that can lead to painful and irreversible blindness.
- **Toxocariasis** is a parasitic infection that mainly affects children and can cause visual impairment.
- **West Nile virus** is spread through mosquitoes and can lead to brain damage and kidney failure.

*For more information on these and other NTDs, please visit: www.researchamerica.org/gh_ntds*

**SUCCESS STORY IN THE MAKING**

In **Texas**, researchers at the National School of Tropical Medicine at the Baylor College of Medicine have identified links between West Nile virus and kidney disease. In a recent study, they found that 40% of people with the virus had kidney disease. With the deadliest year yet for West Nile in the U.S. (>3,500 cases), these kinds of studies are essential to better understand and treat this NTD.

Together with the Sabin Vaccine Institute, the school is also conducting groundbreaking research to develop new vaccines, drugs and diagnostics for other NTDs right here in the U.S.

*Sources: PLOS ONE 2012, National School of Tropical Medicine*
Critical Players in NTD Research

The importance of NTD research was underscored in January 2012, when the World Health Organization (WHO), pharmaceutical companies, national governments (including the U.S.) and global health organizations came together in London and pledged to eliminate or control ten NTDs by 2020.

Here in the United States, government agencies, academia and public-private partnerships play a key role in advancing NTD research.

US Government

- In 2012, NIH funded eight Tropical Medicine Research Centers, allowing each center to pursue targeted NTD research and implement new prevention and treatment strategies. Source: NIH Tropical Medicine Research Centers.
- The CDC started the global campaign to eradicate Guinea Worm Disease in 1980, which has now been confined to less than 2,000 cases worldwide. Source: CDC Guinea Worm Disease
- In 2012, navy medical researchers began conducting the first human clinical trials for a dengue vaccine developed with funds from the DoD. Source: Defense.gov News
- Trachoma results in an estimated $2.9 billion in lost productivity each year. USAID and NIH played a key role in reducing trachoma cases from 149 million in 1997 to 60 million in 2008. Source: Global Network, USAID

Public-Private Partnerships

- *Drugs for Neglected Diseases initiative (DNDi)* has developed affordable tablets to treat Chagas in children, and a cost-effective treatment for leishmaniasis that reduces treatment time by 12 days. Source: DNDi
- *OneWorld Health*, a drug-development affiliate of PATH, has developed a cost-effective antibiotic treatment for visceral leishmaniasis already in use in South-East Asia. Source: One World Health
- *The Infectious Disease Research Institute (IDRI)*, developed the first vaccine candidate for leishmaniasis as well as a technology used in the U.S. to screen blood donations for Chagas disease. Source: IDRI
- *FHI 360* developed END, a program aimed at eliminating trachoma, schistosomiasis and other NTDs. FHI 360 serves more than 60 countries and all U.S. states and territories. Source: FHI 360

Academia

- Researchers at Loyola University New Orleans identified the first locally-acquired case of Chagas disease in Louisiana and are continuing to monitor the disease. Source: Emerging Infectious Diseases, 2007
- The Center for Emerging and Neglected Diseases at the University of California, Berkeley, is working to develop new treatments and diagnostics for diseases such as schistosomiasis, Chagas, leishmaniasis and dengue. Source: Center for Emerging and Neglected Diseases
- Researchers at the University of Texas at Austin completed a long-term study on the threat of Chagas disease in Texas and developed key policy recommendations. Source: University of Texas, Austin
- An NIH-funded lab at the University of Georgia is actively researching potential vaccine candidates for Chagas disease. UGA researchers also created and lead the Chagas Disease Foundation in Watkinsville, GA. Source: University of Georgia

The Way Forward

NTDs are on the rise in the United States. We need:

- Greater recognition by policymakers that U.S. populations suffer from these neglected diseases
- Improved surveillance and documentation of the magnitude of NTDs, including their health and economic impact
- Increased investment in research to better understand and combat the diseases

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