

Spotlight on Chagas Disease



Chagas disease is one of 17 neglected tropical diseases, or NTDs, that collectively affect more than 1.4 billion individuals worldwide. Current funding for prevention, diagnosis and treatment falls far short of need.

What is Chagas Disease?

- ❖ Chagas is caused by a parasite that is transmitted through the bite of an infected triatomine bug, or “kissing bug,” and can lead to heart disease.
- ❖ Chagas is primarily found in Latin America but is emerging in North America and Europe.
- ❖ Chagas can be transmitted from mother to child during birth or through blood transfusions and transplants.
- ❖ Only two medicines exist to treat Chagas in its early stages and both have toxic side effects and long, resource-intensive regimens.
- ❖ Existing medications have limited effectiveness for chronic Chagas, and it is difficult to determine if an individual has been cured.



Global Disease Burden

- ❖ In Latin America, more than **10 million people** are infected with Chagas (five times the number of people living with HIV/AIDS in Latin America).
Source: BIO Ventures for Global Health
- ❖ Approximately **14,000** people die from Chagas disease each year. Source: DNDi
- ❖ Nearly **2 million women** of childbearing age are infected and an estimated 15,000 children are born with Chagas each year. Source: DNDi

Health and Economic Impact Around the World

In Colombia, the average lifetime cost of Chagas treatment is **\$11,619** per patient. Source: PLOS Neglected Tropical Diseases, 2008.

Each year, **752,000** workdays are lost due to premature deaths from Chagas. Source: IS Global

Chagas costs nearly **\$1.2 billion** annually in lost worker productivity in seven Latin American countries. Source: WHO

Years of mandatory Chagas screening in South America has reduced the risk of congenital Chagas and transmission through blood or organ donations. Source: WHO

Treatment can cure Chagas if the infection is caught within two months or in children under 1 year of age; early detection could save **thousands of lives and dollars**. Source: WHO

Up to 70% of people with Chagas infections exhibit no symptoms and can be unaware that they have the disease but are still able to spread Chagas to others. **The other 30%** develop chronic Chagas disease and experience potentially deadly heart and digestive complications.

Chagas Research: Partner Profile



Three product development partnerships (PDPs) in the U.S. are working to develop new tools to combat Chagas disease: **Drugs for Neglected Diseases initiative**, **Sabin Vaccine Institute** and **Infectious Disease Research Institute**.

In 2010, **IDRI** developed one of two FDA-approved Chagas tests to screen blood and organ donations for the disease. It is currently being used in Latin America and the U.S.

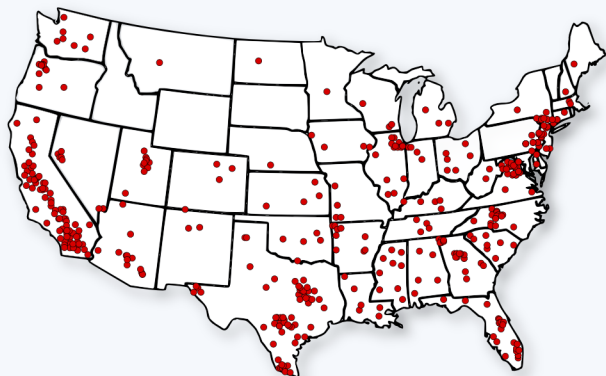
IDRI has developed a prototype for a Chagas vaccine and is working on a new diagnostic designed to identify the disease more quickly and accurately. Source: Infectious Disease Research Institute

Did you know Chagas affects **Americans too?**

U.S. Burden

- ⌘ An estimated **300,000 people** in the U.S. have Chagas. Source: CDC
- ⌘ The CDC estimates that up to **315 babies** are born with Chagas each year in the U.S.
Source: CDC
- ⌘ As many as **55%** of triatomine bugs in the U.S. may be infected with the Chagas parasite, and triatomine bugs exist in more than half of the continental U.S. Source: CDC
- ⌘ In Los Angeles, the prevalence of Chagas in heart failure patients rose from **4%** in 2001 to **17%** in 2010. Source: Scienceline

Blood Donors with Chagas Disease



Tracing the Cost of Chagas

- ⌘ Up to **30% of all Chagas patients** develop heart problems such as an irregular heartbeat or chronic heart failure. Source: The Lancet, 2010
- ⌘ On average, health-care for chronic Chagas costs the U.S. **\$118 million** each year. Source: The Lancet, 2013
- ⌘ Economic productivity losses due to chronic Chagas disease cost the U.S. nearly **\$864 million** annually. Source: The Lancet, 2013

THIS MEANS Chagas-related heart failure in the current U.S. patient population costs the U.S. nearly \$1 billion each year.

Chagas Research Landscape

- ⌘ A lab at the **Center for Tropical and Emerging Global Diseases** at the University of Georgia receives NIH funding to develop and test Chagas vaccines. Source: University of Georgia
- ⌘ The Georgia-based **Chagas Disease Foundation** promotes diagnosis, control, prevention and treatment of Chagas. Source: Chagas Disease Foundation
- ⌘ Researchers at **University of California, San Francisco** developed a new drug to treat Chagas that is currently in Phase I clinical trials. Source: University of California
- ⌘ Faculty at **Tulane University** are studying congenital transmission of Chagas disease.
Source: Tulane University
- ⌘ Researchers at the **University of Texas** mapped Chagas disease transmission throughout the state and created a Chagas risk map for Texas. Source: University of Texas
- ⌘ The **Sabin Vaccine Institute** is currently developing two vaccine candidates for Chagas. Source: Sabin

Facts and Policy Issues

- ⌘ **Funding for Chagas** research comes from the NIH, CDC and other federal agencies as well as private and philanthropic sources such as the Gates Foundation.
- ⌘ The CDC offers free online **education courses** and diagnostic information to increase awareness of Chagas among health care providers in the U.S.
- ⌘ Blood banks in the U.S. now screen for Chagas, but there is no federal requirement to report Chagas cases to the CDC.
- ⌘ Increased funding and support for Chagas research is needed to **develop a vaccine, less toxic treatments and more effective diagnostic tools.**



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