

Chagas Disease in the Americas



Center for Global Health
Division of Parasitic Diseases and Malaria



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Chagas disease

Chagas disease, caused by the parasite *Trypanosoma cruzi*, is spread by infected insects called triatomine bugs and can be life threatening during both the early and late stages of infection. Those with the acute form of the disease, which lasts 4–8 weeks, typically either have no symptoms or experience mild illness. Some patients with acute disease develop swelling at the site of infection, known as Romaña's sign. Chagas disease then progresses to the chronic phase, which can last for years to decades. Infected persons usually don't have overt symptoms nor know they are infected. Twenty to 30 percent of these persons eventually develop chronic disease, which can cause death. Signs and symptoms can include cardiac (such as heart failure) and/or gastrointestinal problems (such as dilated esophagus or colon), in addition to an increased risk of stroke. Historically, transmission has been concentrated in rural areas of Latin America where poor housing conditions promoted contact with infected bugs. However, in the last several decades, successful control programs targeting the bugs have substantially decreased transmission rates in rural areas, and large-scale migration has brought infected persons to cities both within and outside Latin America.

Chagas disease in the United States

The impact of Chagas disease, once thought to be limited to Latin America (where an estimated 8 million people are infected), has moved to the United States, through immigration of persons from Chagas–endemic areas of Mexico, Central America, and South America. The estimated number of infected persons living in the United States is 300,000 or more, based on estimated disease rates by country of origin. The parasite has long been recognized also to occur in local bugs and mammals in the southern regions of the United States, and there have been a few reported cases of local transmission in humans.

Blood screening for Chagas disease

Chagas disease can also be spread through blood transfusion, organ transplantation, and from mother to child. National screening of the blood supply was instituted in early 2007. More than 500 donors with *T. cruzi* infection were identified within the first 18 months of testing. However, awareness of Chagas disease among health professionals and the general public remains limited.

What is CDC doing to address Chagas disease?

The Centers for Disease Control and Prevention (CDC) has been working to assist with international Chagas disease efforts for close to two decades. In particular, CDC has worked to develop new diagnostic methods and participated in efforts to standardize testing internationally, including screening strategies to detect infected children. Additionally, CDC has developed novel insecticide methods for bug control. CDC also conducts epidemiologic investigations and works to identify risks for the progression of the disease.



Photo of a triatomine bug which if infected can transmit *T. cruzi*.

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CDC is also working to minimize the burden of Chagas disease in the United States by providing:

Clinical support

CDC provides extensive support to physicians and patients nationwide, including education about the disease, patient risk factors for infection, diagnostic testing, recommendations for appropriate evaluation and treatment, and the release of medication. Treatment for Chagas disease is available. In the United States, antiparasitic drugs are available only from CDC for use under investigational protocols for compassionate treatment. CDC has released medication for treatment of more than 350 patients since 2000, the majority of those drug releases in the past six years. This recent, substantial increase in requests for treatment may reflect growing recognition and increasing frequency of testing for Chagas disease in the United States.



Photo of a triatomine bug which if infected can transmit *T. cruzi*.

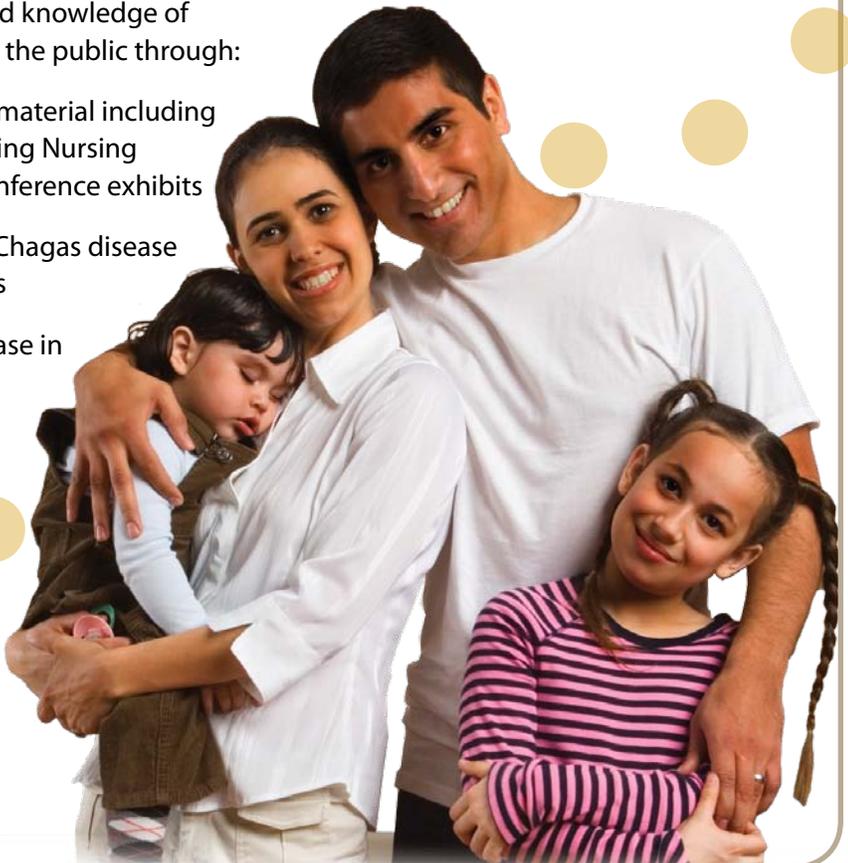
Diagnostic laboratory testing

The reference diagnostic laboratory for parasitic diseases at CDC can assist with laboratory testing to confirm or rule out cases of Chagas disease. Suspected chronic cases can be confirmed by serologic methods that detect antibodies against the parasite, whereas suspected acute and congenital cases can be tested by real-time PCR to detect the parasite DNA. CDC also performs real-time PCR-based monitoring of transplant patients to promptly detect transplant-associated infections and re-activations in order to prevent symptomatic disease.

Outreach and education

CDC is actively working to improve awareness and knowledge of Chagas disease among health care providers and the public through:

- Developing patient and provider educational material including Continuing Medical Education (CME), Continuing Nursing Education (CNE), podcasts, fact sheets, and conference exhibits
- Conducting focus groups, designed to assess Chagas disease awareness and understanding among patients
- Conducting physician surveys on Chagas disease in collaboration with both academic institutions and professional organizations
- Expanding information available online from CDC and translating material into Spanish, including information on triatomine bugs in the U.S.
- Organizing pre-meeting clinical courses on Chagas disease at annual conferences



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Surveillance

Currently, states are not required by federal law to report cases of Chagas disease. However, Chagas disease is only reportable by state mandate in some states. At this time, there are no plans to add Chagas disease to the list of diseases which are nationally notifiable. CDC is working to establish national surveillance to describe the prevalence of disease in order to better inform and support public health response to Chagas disease. Part of that surveillance involves results of blood donor testing which is reported on the American Association of Blood Banks (AABB) website and may be accessed at

<http://www.aabb.org/programs/biovigilance/Pages/chagas.aspx>

Future direction

There is still more that can be done to prevent and control the spread of Chagas disease including:

- Increasing awareness of the disease among Hispanic and Latino immigrants and the physicians who care for them, to help ensure early diagnosis and appropriate treatment
- Participating in international networks to improve and standardize Chagas disease diagnostics
- Defining the risk factors for acquiring Chagas disease in the United States. Currently there is very limited data that can be used to determine the risk of congenital, transplant, transfusion, and vector-borne infection
- Determining the cardiac and gastrointestinal burden of disease to assess the health impact on the population
- Establishing a system to monitor trends and detect increases in new cases of Chagas disease in the United States, which includes increasing public health testing capacity



Acute Chagas disease in a young child. Romaña's sign is present. Photo courtesy of WHO/TDR Image Library. TDR photo, Brazil, 1991.

**For more information
on Chagas disease, please visit**
<http://www.cdc.gov/parasites/chagas> (English)
<http://www.cdc.gov/parasites/chagas/es/> (Spanish)
or call 1-800-CDC-INFO

