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# Guatemala : Chagas Disease

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# The Impact of Chagas Disease in Guatemala

## Overview of Guatemala

Location: Central America, bordering the North Pacific Ocean, between El Salvador and Mexico

Population: 15,460,732 as of July 2017

Race/ethnicity: 42% Mestizo, 18% White Guatemalan, 40.5 % Mayan and non-Mayan indigenous groups

Primary religion: Roman Catholicism and Protestantism

Political Structure: presidential democratic republic system of government with separate legislative, executive, and judicial branches; the president is elected by the people through majority popular vote for a four-year term

Major challenges: 30 years of internal conflict displaced 257,000 people of the population; major transit country for cocaine and heroin; gang violence (CIA, 2017)



Mosley, P. (2015). Chagas Disease. DailyStar.co.uk

## Chagas Disease

Description: The Pan American Health Organization (PAHO) identifies Chagas disease as a neglected tropical disease (PAHO, 2016). A neglected tropical disease exists as a parasitic or bacterial disease transmitted from person to person causing significant illness, primarily affecting low income countries. Chagas disease, also known as American trypanosomiasis, remains a parasitic, chronic, and endemic disease found in the Americas, such as Guatemala.

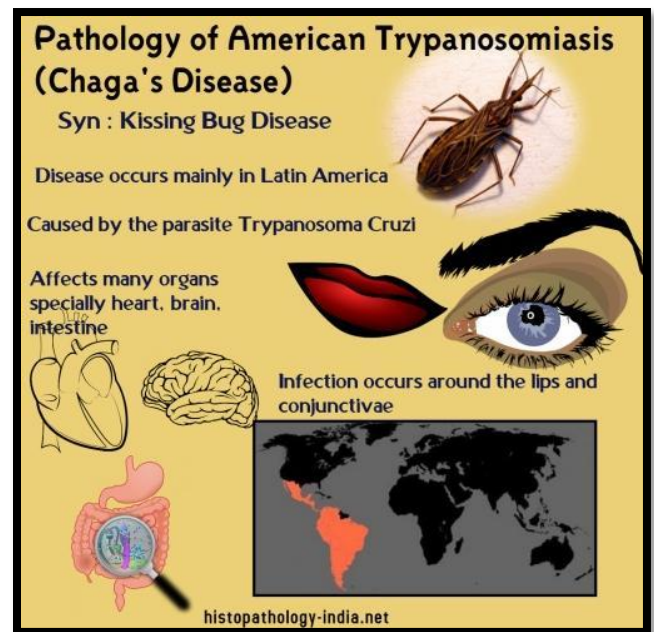
The parasite, *Trypanosoma cruzi*, is transmitted to humans and animals by triatomine insect vectors, including the species *Triatoma dimidiata*. These bugs live in cracks of poorly built homes, and come out during the night to search for food. The triatomine bug will bite the skin and suck the blood of the human. Then, the bug dies and the parasite enters the bloodstream when the person unintentionally rubs the bug's feces or urine on the bite. Initial symptoms may or may not include swelling or fever, and can be effectively treated with medication soon after infection occurs. If Chagas disease remains untreated, the parasites eventually move into the heart and digestive tract causing chronic symptoms and potential death due to heart failure. There is no identified vaccine or effective treatment for the chronic phase of Chagas disease.

Epidemiology: According to the Centers for Disease Control and Prevention, it is estimated that around 8 million people in Latin American countries are currently

infected with Chagas disease (CDC, 2017). On average, Chagas disease accounts for 12,000 deaths in the Americas. Additionally, about 65 million people in the Americas are at risk of developing the disease (PAHO, 2016). Chagas disease primarily affects low income populations, such as the rural and indigenous groups of Guatemala, since they are less likely to have the resources to obtain correct prevention and treatment. Main risk factors include living in poorly built houses, poor sanitary cleanliness, and walls made with earthen materials allow for optimal conditions of triatomine bug infestation (Bustamante, Urioste-Stone, Juarez, & Pennington, 2014).

Some interventions have been done to help control the vectors of Chagas disease. Insecticide-based control and community-based vector surveillance are examples of interventions undertaken in Guatemala. In 2000, a Chagas disease control initiative was started in Guatemala and other Latin American countries that included multiple indoor sprayings of insecticides and the conduction of surveys afterward. The results showed that the more amount of time between rounds of spray led to increased odds of reinfestation after the first spray of insecticide and room for potential resistance. Also, the presence of clustered areas of high infestation reveal potential “hot spots” that need to be surveyed more (Manne, Nakagawa, Yamagata, Goehler, Brownstein, & Castro, 2012).

Another intervention attempted to prevent transmission was the use of community-based vector surveillance. During this, members of the Guatemalan community reported the presence of bugs in their home. Then, local health services would respond with the use of insecticides or educational advice. The study of this intervention in Guatemala confirmed that community-based vector surveillance is effective and does not come with a high cost, but it could be difficult to sustain over time. Moreover, consistent monitoring and supervision by departmental health offices helps to sustain the responsiveness of the community members (Hashimoto, Zuniga, Romero, Morales, & Maguire, 2015).



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