Chagas Disease – American Trypanosomiasis

Chagas disease (American Trypanosomiasis) is a Class B Disease and must be reported to the state within one business day.

Chagas disease, or American Typanosomiasis, is an infectious disease caused by the parasite, *Trypanosoma cruzi.* This parasite is primarily spread through contact with the feces of the triatomine bug. The triatomine bug (commonly known as the kissing bug), picks up the T. cruzi parasite by feeding on infected blood of animals or humans. After the kissing bug becomes infected, the parasite can be passed through its droppings. If the droppings get into the body, for example through a bite wound, or by accidentally rubbing them into the eyes or mouth, it can cause infection.

Since the parasite can be found in blood, it can also be transmitted through less common routes such as blood transfusions, organ transplants, and from a pregnant person to their baby (congenital transmission). In rare cases, people can become infected by consuming food or drinks contaminated with the parasite. Most Chagas cases seen in the United States were originally acquired in parts of Mexico, Central America, and South America where it is endemic and has higher case occurrences compared to the United States.

The Chagas vectors are present in the U.S. Southern Gulf States. Triatomine bugs in Louisiana can transmit several strains of animal *T.cruzi* among armadillos, opossums, rodents, squirrels, and raccoons. In 1998, *T.cruzi* was isolated from the blood of 29% of armadillos captured near New Orleans (Yaeger RG 1998. Am J Trop Med 35:323-326). Raccoons captured in Orleans and East Baton Rouge parishes were found to have a 33.6% positivity rate (Majeau A et al. Vector Borne Zoonotic Dis. 2020 Jul;20(7):535-540). Domestic animals, especially dogs, are at risk of acquiring the infection. In 2019, researchers tested shelter dogs across the state and found that 6.9% were seropositive and 15.7% were PCR-positive for infection with *T.cruzi* (Elmayan, A., Tu, W., Duhon, B. et al. Parasites Vectors 12, 322 (2019)).

Recently, blood donation screening programs have identified a few sporadic cases in the U.S. where persons were exposed to the disease domestically. This likely does not represent a new phenomenon, but instead reflects a new screening method for identifying infections. A complete review of the threat posed by *T.cruzi* in Louisiana is available in the first issue of the Journal of the Louisiana Medical Society, *Chagas disease in the United States: A cause for concern in Louisiana*, Diaz, JH, 2007, J La State Med Soc. 159:21-29.

The 2006 Case

In July 2006, the first human case of insect-transmitted Chagas parasite in Louisiana and sixth ever in the U.S. was described. The discovery was made after a resident brought insects to the attention of a pest control operator who identified the insects as kissing bugs. After researching information on the Internet, the resident realized the potential for Chagas transmission. A local expert on Chagas disease was contacted to further investigate this situation. Of the two residents tested, one was positive for the antibodies to the Chagas parasite. Studies carried out for several months on the many insects that were collected in the house and the nearby building indicated that more than half of the insects tested carried

the Chagas parasite. This incident was not considered a wide-spread public health concern since the person was living in a rural area, in a very open house with numerous entry points for insects, and no air conditioning. (http://www.cdc.gov/eid/content/13/4/605.htm)

Sporadic cases of Chagas disease have been identified in Louisiana since 2006 (Figure 1). Many cases are initially identified through blood donation screening tests, which then require confirmatory testing. In 2023, all five cases had previous travel or residency in South or Central American countries, but in previous years, many had no significant travel history outside of Louisiana.

Figure 1. Chagas Disease Cases in Louisiana, 2006-2023