Murine Typhus

Murine Typhus is not currently a reportable disease in Louisiana.

Epidemiology

Rickettsia typhi or *Rickettsia felis,* which are bacteria spread to humans by the bite of fleas, are the etiologic agents of murine typhus. *R. felis* is a relatively recent discovery, but has been implicated in murine typhus cases in Texas and California. *R. typhi* is spread through the flea *Xenopsylla cheopsi,* and *R. felis* is typically spread through the cat flea, *Ctenocephalides felis.* The common hosts for *X. cheopsi* are the black rat or roof rat (*Rattus rattus*), and Norway or wharf rat (*Rattus norvegicus*), although it has been found in many other rodent species. Common hosts for *C. felis* are domestic and feral cats, opossums, and domestic dogs. The opossum has been particularly implicated as a host for cat fleas in serological studies in California. Although fleas are the vector for murine typhus, in many cases patients cannot recall a history of flea exposure or bites.

Murine typhus used to be common in the United States, but was almost entirely eradicated in public health campaigns in the 1940-1950s. Since then, sporadic cases have been identified in the U.S., mainly in California, Texas, and Hawaii.

After an incubation period of six to 14 days (average time: 12 days), an acute, nonspecific, febrile illness develops. Most cases also report some combination of headache, chills, arthralgia, and myalgia, and some report rash. The rash normally erupts on the upper trunk and spreads outward, usually excluding the face, soles of the feet, and palms. Laboratory abnormalities that have been reported include anemia, leukopenia, thrombocytopenia, or elevation of hepatic transaminases. Due to its general symptoms, murine typhus frequently goes unrecognized, or is confused with other diseases.

The mortality rate for murine typhus with appropriate antibiotic use is less than 1%. Without treatment, however, the disease becomes more severe, and potential for complications increase. Because it may take up to 10 days for antibodies to become detectable by laboratories, antibiotic therapy should be administered upon suspicion of a rickettsial infection. Risk factors include advanced age and immunocompromised status.

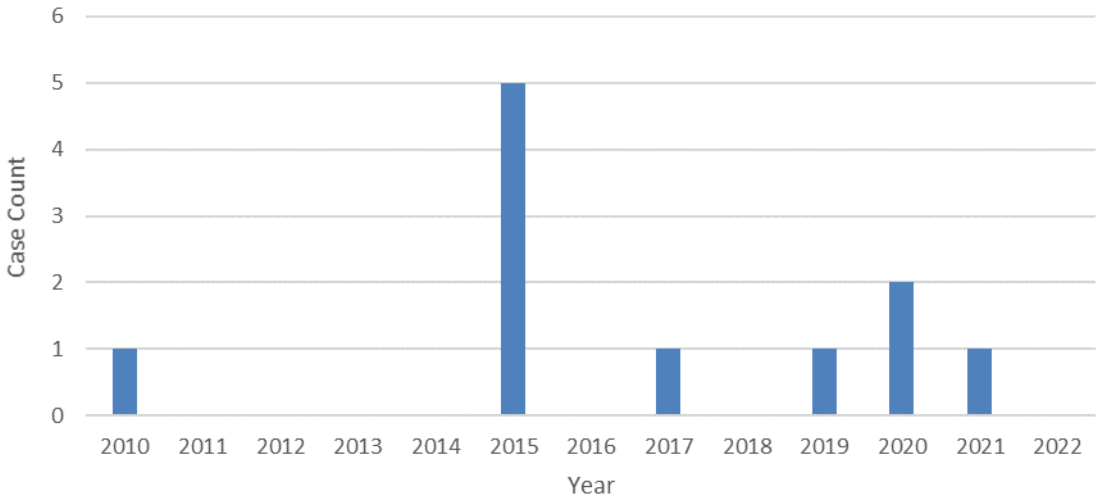
Cases

Although descriptive statistics are presented, they should be interpreted with caution given the extremely small numbers reported.

In Louisiana, since 2010 there have been 18 cases reported. Of the cases reported since 2010, four were reported in 2014. The recent increase since 2010 may be due to increasingly sensitive laboratory techniques, rather than an actual increase in disease rate. In addition, these relatively low case numbers may not accurately reflect the burden of disease, but may rather result from the fact that the disease is relatively mild; many providers may not run lab results, or may fail to

follow up in order to obtain convalescent titers. A final factor which may influence case reporting may be due to providers' increased awareness of the more severe rickettsial disease, Rocky Mountain Spotted Fever (RMSF). The early stages of murine typhus and RMSF are clinically similar, so the increase in reports may be due to laboratory testing done to diagnose RMSF. Further surveillance will be needed to distinguish between these factors and determine the true rate of disease.

Figure 1: Murine Typhus Cases - Louisiana, 2010-2022



Geography

Of cases where the parish of residence is known, the majority of case reports came from Louisiana Department of Health Regions VII and V, which are in western Louisiana. These regions are adjacent to Texas, which is considered endemic for murine typhus.