

Lyme Disease

Lyme disease is a Class C Disease and must be reported to the state within five business days.

Lyme disease is the most common tick-borne illness in the United States. More than 30,000 cases are reported annually in recent years. CDC now estimates that each year more than 450,000 Americans are diagnosed and treated for Lyme disease each year. The disease is caused by a bacterial spirochete, *Borrelia burgdorferi*. In the northern and central U.S., the primary vector is *Ixodes scapularis*, the deer tick, while on the Pacific coast, the most common vector is *Ixodes pacificus*, the western black-legged tick. Other species of ixodid ticks have also been implicated in transmission.

Symptoms include fever, headache, fatigue, and an expanding skin rash called erythema migrans. Infections that are not treated can spread to joints, the heart, and the nervous system; however, most cases can be successfully treated with a few weeks of antibiotics.

The geographic distribution of Lyme disease is highly focused with most cases occurring in the northeastern and north-central states. The risk of infection in endemic areas is dramatically greater than the risk in non-endemic areas. In 2020, state 3-year average incidence rates varied widely from 0.01 cases or less per 100,000 population in 8 states to 116.5 cases per 100,000 population in Maine. The small number of cases reported from Louisiana suggests that Louisiana is not an area of intense transmission.

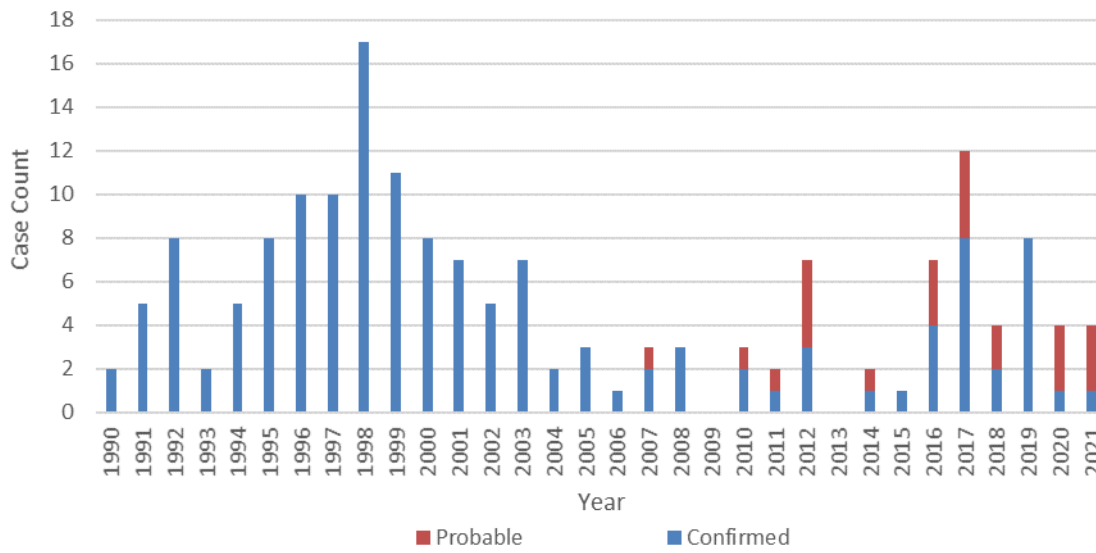
Persons exposed to wooded areas, overgrown brush, or residential areas adjacent to the like are at the highest risk in endemic areas. Although Louisiana is not considered an area of high risk, avoidance of tick-infested areas and use of personal protective measures are recommended for the prevention of Lyme disease and other tick-borne diseases. Most cases of Lyme disease result when the tick is attached for over 24 hours. Therefore, skin examination and prompt removal of ticks is another possible means of prevention.

The case definition of Lyme disease relies on isolation of *Borrelia burgdorferi* (rarely done), or on a combination of clinical and serologic tests. Serology is widely available, but must be interpreted with caution. An early IgM response develops and peaks at three to six weeks. Very rare cases (1% or 2%) have had IgM persisting for over two to three years. An IgG response starts after several weeks and may persist for years, even after successful treatment. A two-test approach, sensitive EIA or IFA followed by Western Blot confirmation, is the preferred approach. EIA, IFA alone, or ImmunoBlot alone (particularly IgM) do produce false positives. A combination of both is the best solution to reduce false positives.

Cases and Trends

During the period of 1990 to 2021, the number of cases per year reported in Louisiana have varied from 0 to a high of 17 cases in 1998 (Figure 1). These numbers are extremely low in comparison to endemic areas of the United States.

Figure 1: Lyme disease cases - Louisiana, 1990-2020



Infection Location

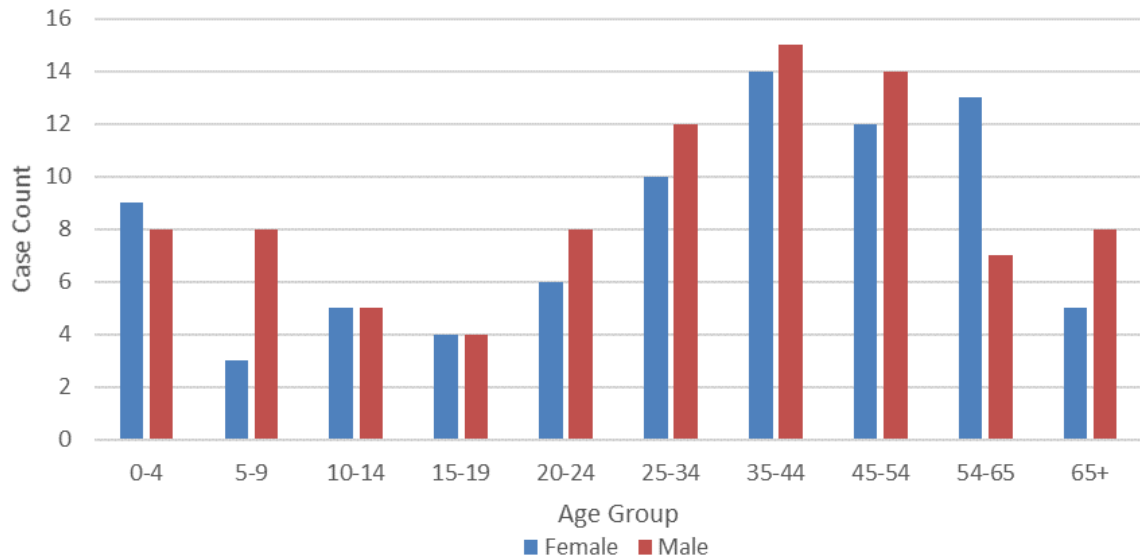
It is important to note that a majority of cases reported in Louisiana were individuals who had travelled out of state prior to developing symptoms, and they likely became infected outside of Louisiana. These travel-associated cases are still counted when their home residence is listed as Louisiana. Even though it is rare that cases report no travel out of the state, it is still important to keep track of how many Louisiana residents acquire the disease. This helps understand the burden of the disease within the state and helps encourage healthcare providers to consider Lyme disease as a possible diagnosis and to ask about recent travel when seeing patients.

Many individuals diagnosed with Lyme disease are unable to be contacted for interview to determine infection location. Out of the cases with known travel history, between 2010 and 2021 only 15% of Louisiana cases reported no recent travel.

Age, Sex and Race Distribution

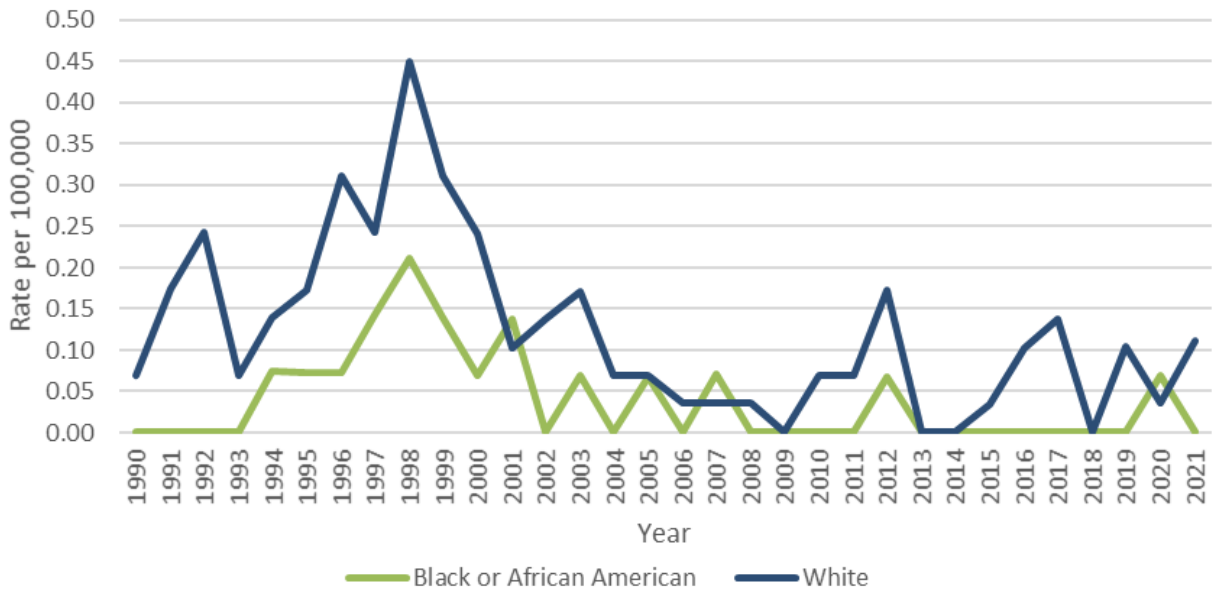
In Louisiana from 1990 to 2021, 47.6% of the cases were reported in females and 52.4% were reported in males (Figure 2). For both males and females, more cases occurred among people ages 25-years to 64-years old.

Figure 2: Lyme disease cases by gender and age - Louisiana, 1988-2017



Race data is commonly missing from Lyme disease reports. Among cases where race was reporting, from 1990 to 2021 in Louisiana, the rate of cases per 100,000 has been higher in White individuals most years (Figure 3).

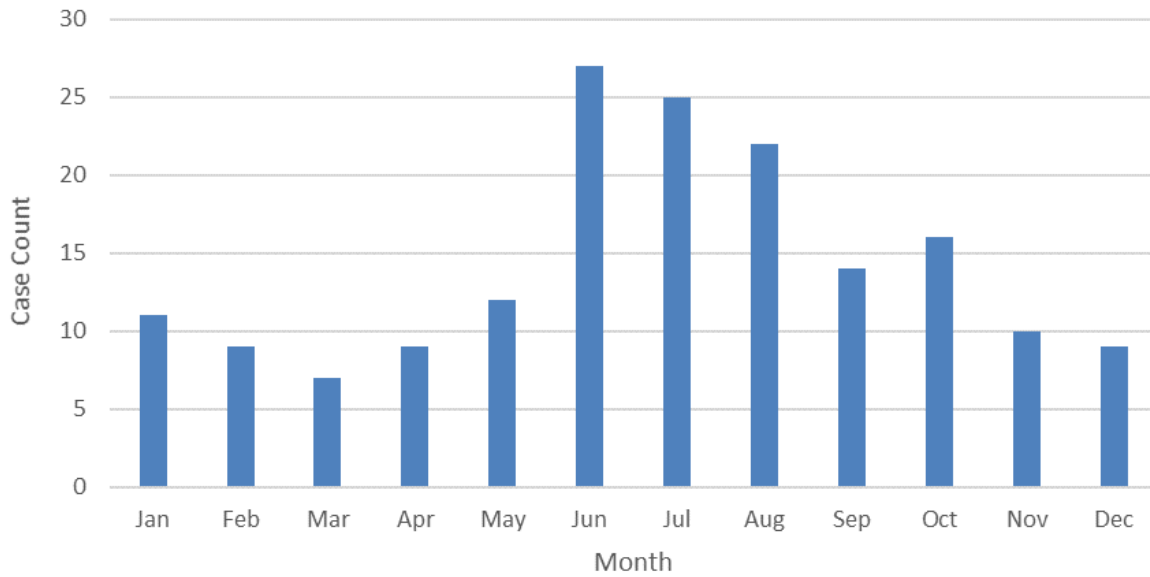
Figure 3: Lyme disease cases by race and age - Louisiana, 1990-2021



Seasonality

The seasonal distribution shows a peak in cases occurring in June; then case numbers slowly decrease into the winter months (Figure 4).

Figure 4: Lyme disease number of cases by month - Louisiana, 1990-2021



Geographical Distribution

The geographical distribution shows representation throughout Louisiana, although a majority of the cases were acquired out of state (Figure 5).

Figure 5: Lyme disease cases by Parish – Louisiana, 1990-2021

