

## Rocky Mountain Spotted Fever

*Rocky Mountain Spotted Fever (RMSF) is a Class C disease. It must be reported to the state within five business days.*

As of January 1, 2010, cases of RMSF are reported under a new category called Spotted Fever Rickettsiosis (including Rocky Mountain spotted fever). This change was made to better reflect the scope of cases being reported under the previous heading of RMSF, as many of those cases were not identified as being specifically caused by *R. rickettsii*.

### Epidemiology

*Rickettsia rickettsii*, a bacterial organism spread to humans by the bite of ixodid (hard) ticks, is the etiologic agent of RMSF. The two major vectors of RMSF in the U.S. are the American dog tick, *Dermacentor variabilis* and the Rocky Mountain wood tick, *Dermacentor andersoni*. Other domestic tick species have been shown to be infected with *Rickettsia rickettsia*, or have been identified as experimental vectors in laboratory studies.

The rickettsial organism is maintained in nature in a complex life cycle involving ticks and mammals. The tick acts as both vector and reservoir of the disease. Humans are accidental hosts and do not play a role in the natural transmission cycle.

The disease is endemic in areas of North, Central and South America. Other closely related organisms cause different types of spotted fevers worldwide. Over half of the U.S. cases are reported from the south Atlantic region (which extends from Delaware south to Florida). Infection also occurs in the Pacific coastal region and the west south-central region, (which includes Arkansas, Louisiana, Oklahoma and Texas). Although initially identified in the Rocky Mountain States in 1896, a very small percentage of cases has recently been reported from this southern area.

Laboratory confirmation is usually done by serology. Several well-validated serologic assays are available, but the reference standard is indirect immuno-fluorescence (IFA). Polymerase chain reaction (PCR) and isolation of the organism from tissues are other means of diagnosis. Early infections, which are often difficult to diagnose, are characterized by sudden onset of fever, headache, and myalgia, followed by a rash. Early diagnosis can be difficult. Without prompt, appropriate antibiotic therapy, the disease can be fatal. If epidemiological and clinical clues lead to a high degree of suspicion, therapy should never be delayed while waiting for laboratory confirmation. While the number of reported cases has increased, the case fatality rate in persons who become ill from RMSF has declined to a low of less than 0.5%.

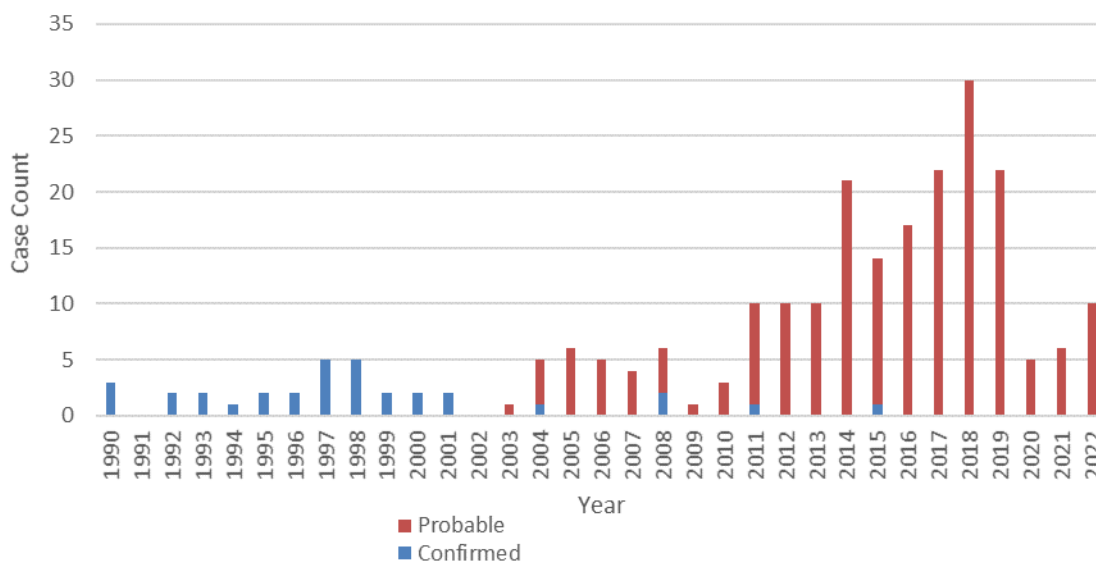
No licensed vaccine providing immunity to RMSF is available. Limiting exposure to ticks is an important method of prevention. Since elimination of all activities resulting in tick exposure is impossible, protective measures such as wearing light-colored clothing, tucking pant legs into socks, and applying appropriate repellents to clothing and skin should be employed. Prompt inspection and removal of ticks are also very important. As in many tick-transmitted diseases, the tick must be attached for several hours before transmission takes place, thus the importance of tick removal.

## Cases

Reported occurrence of spotted fever rickettsiosis (not limited to Rocky Mountain Spotted Fever) in the state ranges from zero to 30 cases per year from 1990 to 2022. Since 2000, cases have been classified as confirmed or probable based on the level of diagnosis determined in each circumstance. The 10-year incidence rate in Louisiana from 2012-2022 is 0.36 cases per 100,000 persons.

The number of reported cases has drastically increased, especially since 2010. This increase reflects the national trend that is particularly influenced by increased numbers of cases reported from suburban areas, presumably due to human migration into naturally pristine or forested areas, and a combination of new diagnostic tests and the changes in spotted fever rickettsiosis surveillance case definition in 2004. The decrease in recent years may be due to decreases in testing during the COVID-19 pandemic (Figure 1).

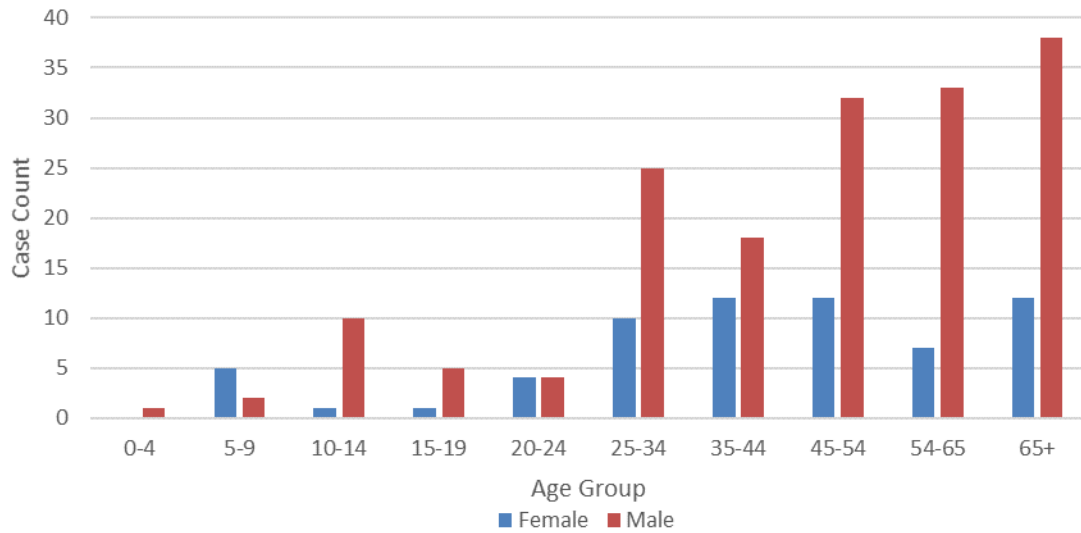
**Figure 1:** Spotted Fever Rickettsiosis Reported Cases, Louisiana, 1990-2022



### Gender and Age

Overall, more cases were reported among males than females, with most cases occurring in older age groups (Figure 2).

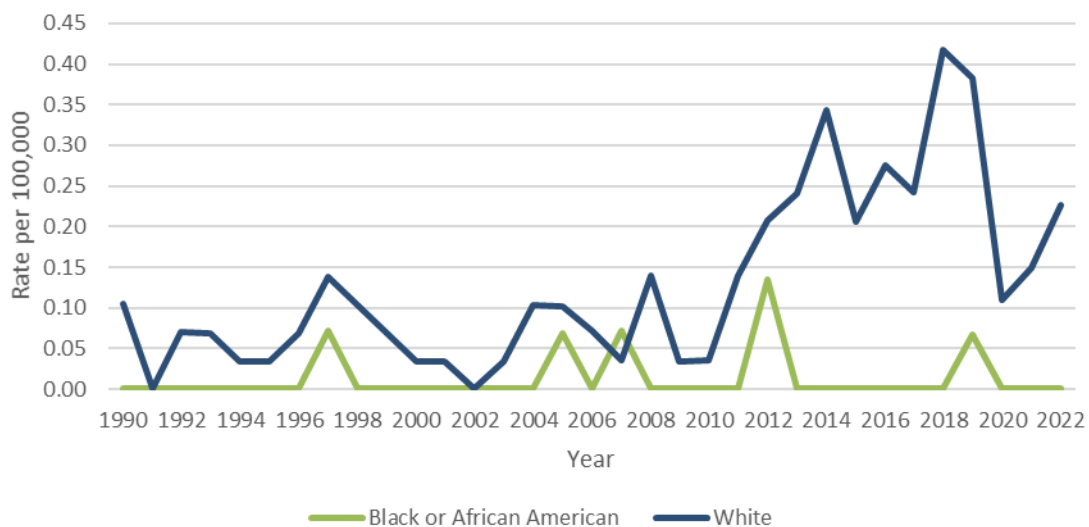
**Figure 2:** Spotted Fever Rickettsiosis Reported Cases by Age and Gender, Louisiana, 1990-2022



### Race and Age

In Louisiana, the incidence rate has been highest in white individuals (Figure 3).

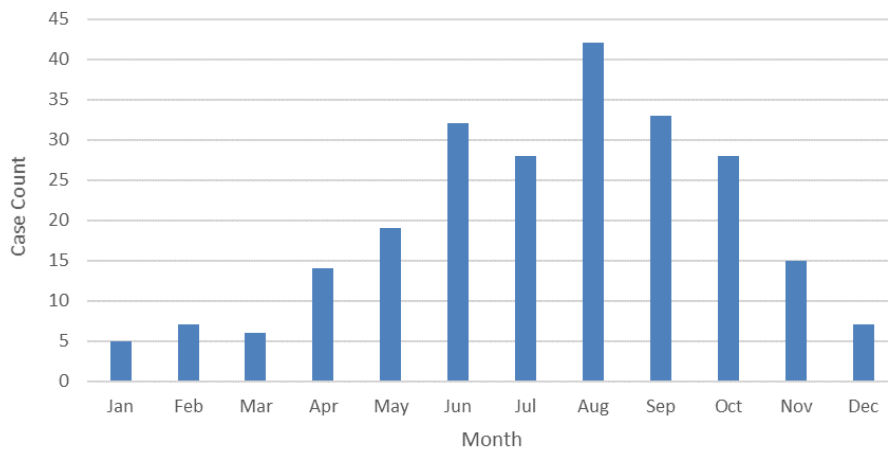
**Figure 3:** RMSF Incidence Rates by Race, Louisiana, 1990-2022



### Seasonality

In the U.S. the majority of cases are infected during summer months. In Louisiana, the majority of the cases occur between June and October (Figure 4).

**Figure 4:** Spotted Fever Rickettsiosis Reported Cases by Onset Month: Louisiana, 1990-2022



Louisiana’s sub-tropical climate likely fosters a longer period of tick activity. The peak in U.S. cases of Spotted Fever Rickettsiosis occurs in June and July, but in Louisiana the peak months are June through October (Figure 4).

### Geography

**Figure 5:** Spotted Fever Rickettsiosis Reported Cases by Parish: Louisiana, 1990-2022

