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.

Since 2010, cases of RMSF have been reported under a 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.

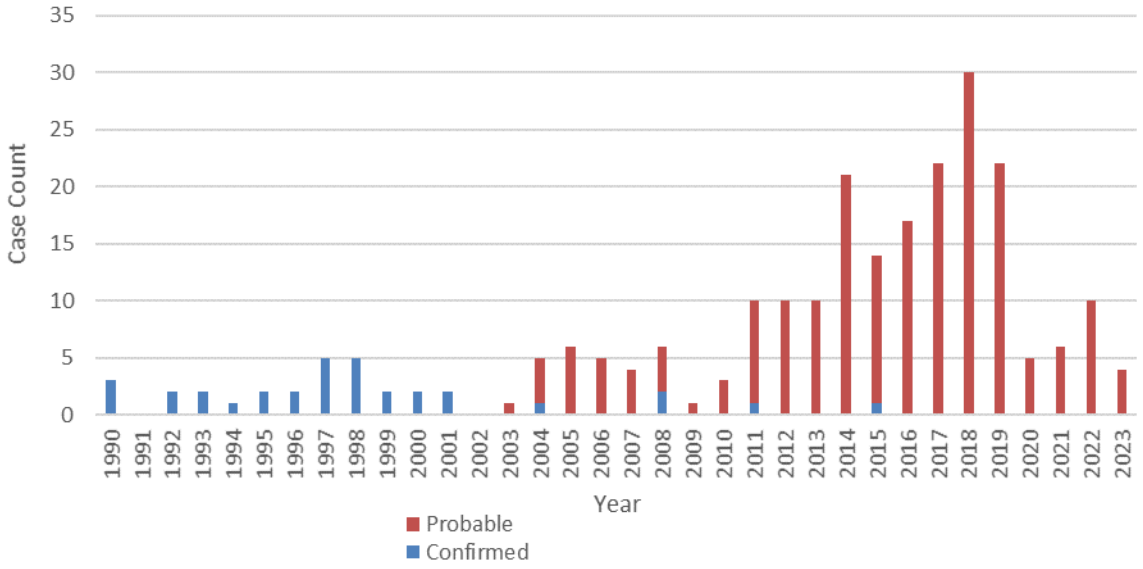
Early infections, which are often difficult to diagnose, are characterized by sudden onset of fever, headache, and myalgia, followed by a rash. Early diagnosis can be difficult. Without prompt, appropriate antibiotic therapy, the disease can be fatal. If epidemiological and clinical clues lead to a high 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.

Incidence

Reported occurrence of all spotted fever rickettsiosis (not limited to Rocky Mountain Spotted Fever) in the state ranges from zero to 30 cases per year from 1990 to 2023. 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 2014-2023 is 0.32 cases per 100,000 individuals (Figure 1).

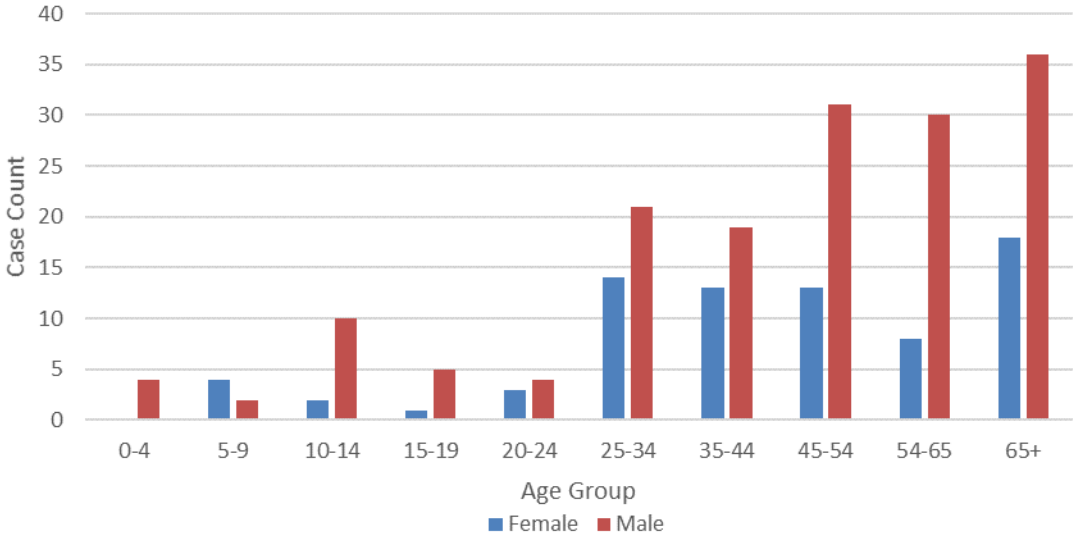
Figure 1: Spotted Fever Rickettsiosis Reported Cases, Louisiana, 1990-2023



Gender and Age

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

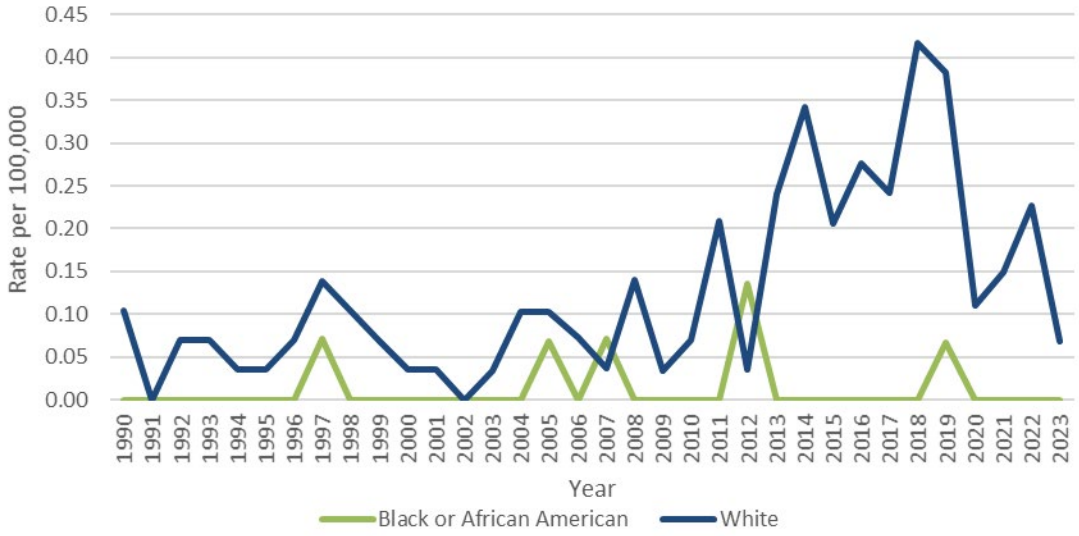
Figure 2: Spotted Fever Rickettsiosis Reported Cases by Age and Gender, Louisiana, 1990-2023



Race and Age

Distribution by race reveals higher incidence rates among white individuals compared to black or African American individuals. However, race is not consistently reported in all case records, which may affect the accuracy of these comparisons (Figure 3).

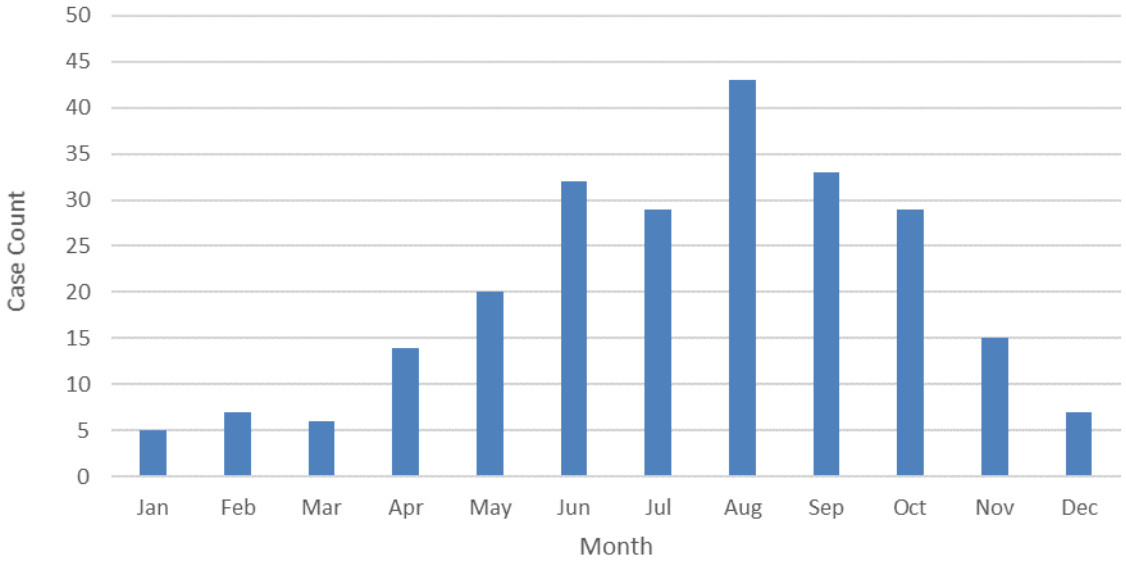
Figure 3: RMSF Incidence Rates by Race, Louisiana, 1990-2023



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, 1990-2023



Geography

The geographical distribution is unremarkable (Figure 5). However, parishes with high incidence rates such as Saint Tammany Parish, have experienced significant population growth and development, potentially contributing to increased exposure to vectors as urbanization expands into forested areas (Table).

Table: RMSF 10-Year Incidence Rate by Parish - Louisiana, 2014-2023

Parish	Incidence Rate 2014-2023	Parish	Incidence Rate 2014-2023
Acadia	0.00	Madison	0.94
Allen	0.41	Morehouse	0.79
Ascension	0.16	Natchitoches	0.00
Assumption	0.00	Orleans	0.08
Avoyelles	0.00	Ouachita	0.57
Beauregard	0.27	Plaquemines	0.00
Bienville	1.51	Pointe Coupee	0.47
Bossier	0.39	Rapides	0.08
Caddo	0.54	Red River	1.23
Calcasieu	0.59	Richland	0.50
Caldwell	0.00	Sabine	0.86
Cameron	0.00	Saint Bernard	0.00
Catahoula	0.00	Saint Charles	0.38
Claiborne	1.97	Saint Helena	0.00
Concordia	2.60	Saint James	0.00
De Soto	1.11	Saint Landry	0.00
East Baton Rouge	0.25	Saint Martin	0.19
East Carroll	0.00	Saint Mary	0.40
East Feliciana	0.00	Saint Tammany	0.69
Evangeline	0.00	St John the Baptist	0.00
Franklin	0.50	Tangipahoa	0.45
Grant	0.00	Tensas	0.00
Iberia	0.00	Terrebonne	0.00
Iberville	0.32	Union	1.38
Jackson	2.58	Vermilion	0.34
Jefferson	0.05	Vernon	0.20
Jefferson Davis	0.00	Washington	2.83
La Salle	0.12	Webster	0.53
Lafayette	0.00	West Baton Rouge	0.00
Lafourche	1.34	West Carroll	0.00
Lincoln	0.42	West Feliciana	0.00
Livingston	0.42	Winn	0.71

Figure 5: RMSF Reported Cases by Parish: Louisiana, 1990-2023