

Rocky Mountain Spotted Fever

2006 Case Total 134
2005 Case Total 210

2006 Rate 3.9 per 100,000
2005 Rate 6.1 per 100,000

Rocky Mountain spotted fever (RMSF) is the most common tick-borne infection in Oklahoma. In 2006, 134 reports met the confirmed or probable surveillance case definition resulting in a statewide incidence rate of 3.9 cases per 100,000 population. This was the first decline in case numbers since 2001 and represents a 35% decrease from 2005. The significant decrease in RMSF cases is attributable to the very hot and dry weather that most of Oklahoma experienced during the spring and summer months of 2006 which suppressed tick vector populations. Oklahoma continues to be one of the highest incidence states of RMSF, with rates ten times higher than the national rate.

The incidence of RMSF is consistently higher in the eastern part of the state where there is a more favorable tick habitat for *Dermacentor variabilis* (the American dog tick), the principal vector of RMSF. The counties with the highest incidence rates of RMSF were Pittsburg with a rate of 29.6 per 100,000 (N=13), Pushmataha with a rate of 17.1 per 100,000 (N=2), Haskell with a rate of 17.0 per 100,000 (N=2), and LeFlore with a rate of 16.6 per 100,000 (N=8). The highest number of cases reported from any county was 13 in Pittsburg County, followed by 11 in Oklahoma County. County location of cases is classified according to the case-patient's residence and does not necessarily reflect the county of exposure.

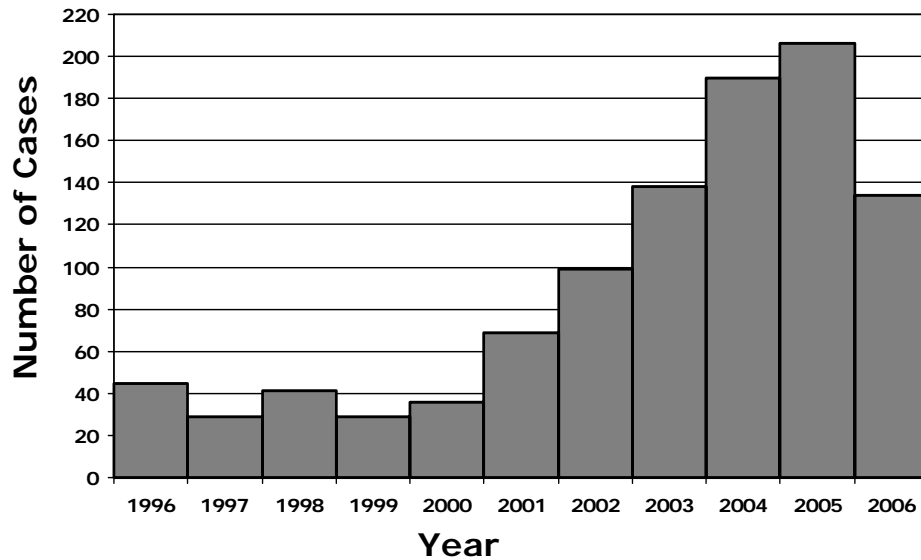
The age of RMSF cases ranged from 2 to 84 years with a median age of 37 years. The age groups with the highest incidence were adults aged 60 to 69 years (6.25 per 100,000 population) followed by the 50 to 59 year age group (4.7 per 100,000 population). Seventy-eight (58%) cases were male and fifty-six (42%) cases were female. Males had a higher rate of RMSF of 4.6 per 100,000 population compared to females with a rate of 3.2 per 100,000 population. The majority of cases (69%) were white; 20% were American Indian or Alaska Native, 2% were black, 2% were multi race, 1% were Native Hawaiian or Pacific Islander, and 6% were of unknown race.

Eighty-eight percent of cases reported an onset of symptoms during the months of April through September peaking in June (33 cases) and July (32 cases). The most common symptoms were self-reported fever (99%), chills (77%), headache (75%), myalgia (71%) and rash (48%). Of the sixty-two that presented with a rash, sixteen (26%) reported a palmar rash and/or a plantar rash. Twenty-six percent of cases were hospitalized and there were no reported deaths in 2006. Eighty-nine cases (67%) recalled a tick bite within 14 days of symptom onset.

Serologic testing is the most widely available laboratory method and used most frequently in testing for RMSF. The quantitative indirect immunofluorescence assay (IFA) is the preferred serologic test as current commercially available ELISA tests are not quantitative, and hence cannot be used to measure changes in antibody titer. It is important to measure both IgG and IgM antibody titer levels using paired

serum specimens, first, during the acute stage of illness (within a week of onset) and again during the convalescent stage (2-4 weeks later) for case confirmation. Diagnosis is confirmed by a four-fold change in antibody titers. Treatment for RMSF should be initiated before lab confirmation, when there is a high suspicion of tickborne illness, to reduce the severity of the disease. Doxycycline is the antibiotic of choice in both children and adults.

Reported Number of Rocky Mountain Spotted Fever Cases by Year, Oklahoma, 1996-2006



Rate of Reported Rocky Mountain Spotted Fever Cases by County of Residence, Oklahoma, 2006

