

Rocky Mountain Spotted Fever

Agent: *Rickettsia rickettsii* (bacteria)

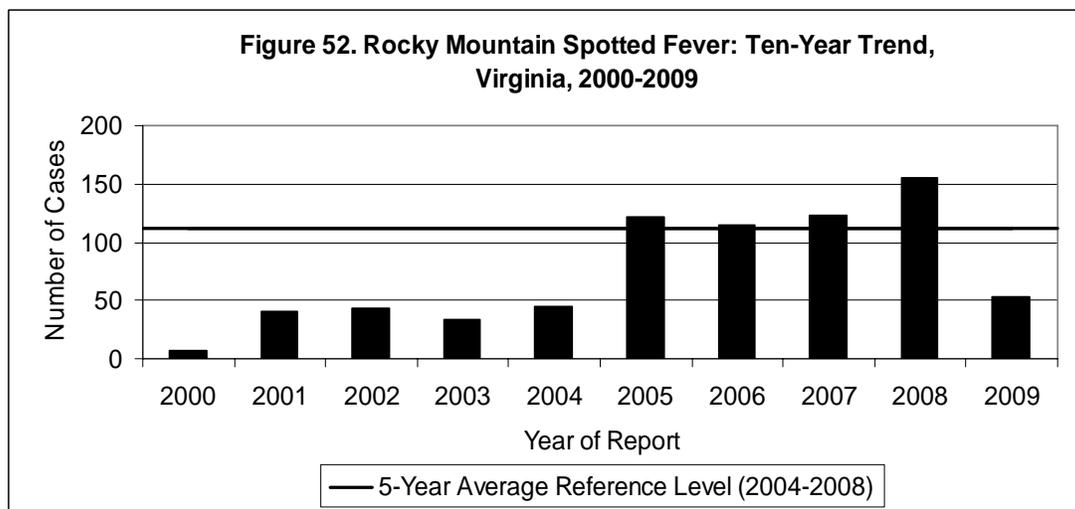
Mode of Transmission: Transmitted to humans by the bite of an infected American dog tick. Ticks must be attached while feeding for at least 4 to 6 hours to transmit the bacterium.

Signs/Symptoms: Persons with Rocky Mountain spotted fever (RMSF) may have a sudden onset of fever, severe headache, muscle pain, nausea and vomiting. Three to five days after onset of illness, a rash may develop that starts on the hands and feet and spreads to the rest of the body. The rash is seen in only 40% to 60% of cases.

Prevention: Minimizing tick bites by avoiding likely American dog tick-prone habitats such as open fields with tall brush and weeds, old fields with early succession forest growth, or brushy vegetation along forest margins and trails. DEET, Picaridin, or Oil of Lemon Eucalyptus-based repellents should be applied to exposed areas of skin before entering tick habitats. When in tick-prone habitats, light-colored clothing should be worn with pants legs tucked into socks, and permethrin-based repellants should be applied to clothing, socks and shoes. After visiting tick habitats, body surfaces and pets should be thoroughly checked for ticks. Any attached ticks should be removed as soon as possible. American dog ticks are frequently found feeding on a human's neck or head, or in hair at the base of the scalp.

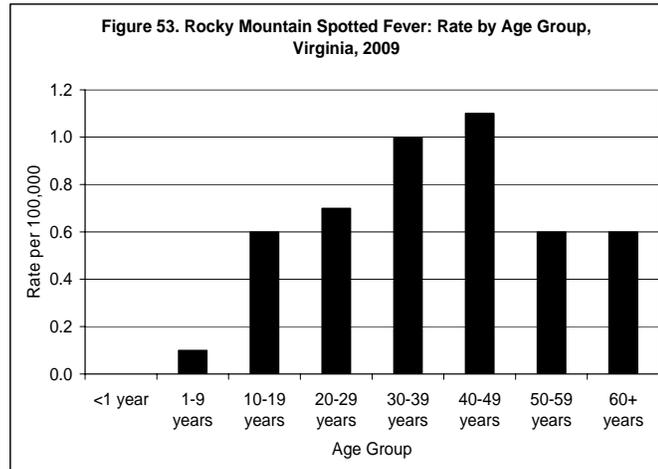
Other Important Information: RMSF can be difficult to diagnose in the early stages, but without early intervention, may be fatal in up to 30% of untreated patients. Although the national case fatality rates ranged from 3% to 8% of all reported cases in the United States from 1970 to 1982, national case fatality rates have declined in recent years to <1% of cases reported from 2001 to 2007. Possible explanations for this decrease include more prompt disease recognition and increased availability and appropriate use of effective antimicrobial therapy.

In 2009, only 53 cases of RMSF were reported in Virginia. This is a substantial decrease from the 155 cases reported in 2008, and less than half of the five-year average of 111.6 cases per year (Figure 52). The reason for this dramatic decrease in the number of RMSF cases in Virginia is unclear. Nationally, RMSF cases decreased 29% from those reported



in 2008. According to CDC, this decrease might be partly due to a reduced number of vector tick populations and ecological changes influencing disease transmission.

In 2009, RMSF incidence rates were highest in persons aged 40 to 49 years and 30-39 years (1.1 and 1.0 per 100,000, respectively) (Figure 53). Although previous national studies have shown a higher incidence for RMSF in children aged less than 10 years, more recent national data indicate a shift in age distribution, with the highest rates among adults aged 40-64 years.



Information on race was missing for 53% of reported cases. Where race information was provided, incidence in the white population was shown to be twice the rate in the black population (0.4 and 0.2 per 100,000, respectively). Males had a somewhat higher rate than females (0.9 and 0.5 per 100,000, respectively). The northwest and central regions of Virginia had the highest incidence (1.3 and 1.1 per 100,000, respectively) and rates in other regions ranged from 0.4 to 0.5 per 100,000. For nearly half of all cases (49%) symptoms were reported to begin between April and June (Figure 54). These months are consistent with the activity peaks for many tick species in Virginia, but the noticeable drop in the number of cases reported during May of 2009 is unexplained.

