

Animal Surveillance Case Definition Tularemia (*Francisella tularensis*)

Clinical description

A communicable disease of animals and people caused by Gram-negative coccobacillus bacteria, *Francisella tularensis*. Tularemia has a wide host range, but the infection occurs in among wild vertebrate reservoirs (predominantly rabbits and rodents). Sheep, horses, pigs, dogs and cats are the domestic animals most commonly affected. Susceptibility to *F. tularensis* varies based on species of animal. Rodents and rabbits generally suffer a fatal septicemic disease and are sometimes found dead in clusters. Cats and dogs are thought to become infected after hunting or consuming dead rodents or rabbits and may show signs of septicemia (i.e., fever, anorexia and depression) or be asymptomatic. Infections are usually mild or inapparent. The usual interval between exposure and onset of illness ranges from 1 to 10 days. Ticks are the biological vectors, although other hematophagous arthropods (e.g., biting flies and mosquitoes) can also serve as vectors. *F. tularensis* can survive for long periods of time in vector populations, in the carcasses and hides of infected animals, and in fomites (e.g., dust, grain, straw, and soil). Transmission to humans can occur by arthropod-borne transfer, ingestion (e.g., contaminated water and undercooked meat), inhalation (e.g., dust from contaminated environment or wool and laboratory exposures), or direct contact through the skin and mucous membranes (e.g., knife cuts and conjunctival contact). Some cases of human infection by cat scratches have been reported. There are approximately 130 human cases of tularemia reported in the United States annually. Tularemia is diagnosed sporadically in New Jersey and is usually associated with focal outbreaks in southern New Jersey counties.

Tularemia is a CDC bioterrorist Class A agent because of the potential for significant public health impact. Pathogens utilized as a bioterrorism agent may have atypical routes of transmission and clinical manifestations. Veterinary practitioners suspecting tularemia in domestic companion animals should immediately notify their local health department or the NJDHSS at 609-826-4872 during working hours and 609-392-2020 on nights, weekends and holidays.

Case classification

Confirmed

+/- compatible clinical signs **and**

- isolation of *F. tularensis* from a clinical specimen by culture, **or**
- identification of *F. tularensis* antigen by use of immunofluorescence (fluorescent antibody or IFA) in tissues **or**
- four fold or greater change in serologic antibody titer in 2 specimens obtained at least 2 weeks apart and assayed simultaneously at the same laboratory.

Probable

A clinically compatible case **and**

- an elevated serologic titer in one or more specimens obtained after the onset of signs, **or**
- detection of *F. tularensis* nucleic acids in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay.

Suspect

A clinically compatible case epidemiologically linked to a confirmed case.