

## **Tularemia**

Agent: *Francisella tularensis* (bacteria)

Mode of Transmission: Transmission in the United States is primarily by the bite of an infected tick such as the American dog tick, the lone star tick, or occasionally by the bite of an infected deer fly. Hunters can contract the disease while cleaning infected game or when eating infected meat that is raw or undercooked. Humans may also become infected by drinking water contaminated by infected animals, by contaminating their eyes with infected material, or by breathing *F. tularensis* spores from the dried carcasses or pelts of animals that died from tularemia. Because *F. tularensis* is highly infectious when grown in culture, laboratorians who work with the bacteria may become infected with the bacteria through wound contamination, or inhalation of aerosolized material. The bacteria are not transmitted directly from person to person.

Signs/Symptoms: Symptoms vary depending on the mode of transmission, but usually include sudden onset of high fever, chills, fatigue, general body aches, headache and nausea. An ulcer may occur at the site of infectious bites or wounds, and proximate lymph nodes may become swollen and painful. Ingestion may result in painful pharyngitis, abdominal pain, diarrhea and vomiting. Pulmonary infection may result in pneumonia and requires prompt identification and treatment to prevent development of life-threatening illness.

Prevention: Preventive measures include minimizing the risk of bites by avoiding areas infested by ticks or deer flies, and avoiding untreated water in areas where tularemia is prevalent among wild animals. Impervious protective gloves should be used when skinning rabbits and other wild game. Utensils used for preparing meat from game should not be used to prepare other food items. Undercooked meat should not be consumed. Avoid mowing over dead animals to lower the risk of aerosolizing infectious particles.

Other Important Information: Wild animals are the reservoir for *F. tularensis* and rabbits, hares, and rodents are especially susceptible to infection. Tularemia is classified as a potential bioweapon because its spores are relatively easy to disseminate as a breathable aerosol or as a food and water contaminant.

In 2013, two cases of tularemia were reported in Virginia residents. One case occurred in an adult male living in the central region who reported having exposures to both ticks and wildlife, including rabbits, while landscaping. The other case occurred in an adult male who resided in the northwest region and reported frequent lawn mowing resulting in several known tick bites. In Virginia, the 5-year average incidence rate for tularemia is 2.0 cases per year.