BASICS

Tularemia is a bacterial disease caused by the organism *Francisella tularensis*. Tularemia most commonly affects lagomorphs (rabbits, hares) and rodents but can be a serious disease in people.

In both humans and animals, acute fever is common. **CLINICAL SIGNS** can include anorexia, dehydration, listlessness, enlarged lymph nodes, draining abscesses, oral or tongue ulceration, pneumonia, enlarged liver and spleen, and icterus (yellowish color of skin and eye). **NONSPECIFIC SIGNS** include lethargy (low energy), anorexia, vomiting, and diarrhea.

*F. tularensis* is highly infectious and can be **TRANSMITTED** by contact with just a few bacteria from an infected animal or the bite of an infected tick or deerfly. The most common **ARTHROPOD VECTORS** in the United States are the American dog tick, the Lone Star tick, the Rocky Mountain wood tick, and deerflies.

Tularemia can be definitively **DIAGNOSED** by isolating the organism from blood, fluid, or biopsies of lesions or lymph nodes. Samples may also be sent for specialized secure laboratories for confirmation.

Antibiotics are used to **TREAT** tularemia. Commonly used antibiotics include streptomycin, gentamicin, doxycycline, and ciprofloxacin.

Tularemia is considered a “**SELECT AGENT**” which means the federal government considers it a **POTENTIAL BILOGIC WEAPON**. All cases must be reported to state and federal agencies.

ZOOONOTIC RISK & SELECT AGENT

TICK BITE, DIRECT CONTACT, INHALATION, OR INGESTION

MAMMALS, BIRDS, & HUMANS

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A partnership between NYS Dept. of Environmental Conservation and Cornell Wildlife Health Lab

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The pharyngeal and oculoglandular forms have signs related to the throat and eye, respectively. Pneumonic tularemia occurs when the bacteria are inhaled and tends to be most severe. Typhoidal tularemia has no localizing signs, which can make diagnosis difficult.

**TRANSMISSION** of the bacteria can also occur through contact with blood or tissues of infected animals. Inhalation of aerosolized particles or ingestion of contaminated water or meat can also result in disease. Human to human transmission has not been reported. Type A, subspecies *F. tularensis tularensis*, is most commonly transmitted by direct contact, tick vectors, or by aerosols. Type B, subspecies *F. tularensis holarctica*, is usually much less severe than Type A and is mainly associated with water sources and semi-aquatic animals.

**EPIDEMIOLOGY** Tularemia is RARE in New York State with only a handful of cases reported in humans in the New York City area in the last decade. Transmission by ticks is more common during summer when tick bites are more likely to occur. Cases must be reported to state and federal authorities. The organism is classified as a possible bioterrorism agent because of its highly infectious nature and ability to be aerosolized and contaminate food or water.

**PRECAUTIONS AND PREVENTION** Reducing exposure to the vectors that transmit the bacteria, ticks and biting flies, will help prevent infection with tularemia as well as other tick-borne diseases. In addition, hunters should use gloves when handling animals and cook game meat thoroughly before eating. There is NO VACCINE generally available at this time.

If left untreated, type A tularemia can cause SERIOUS DISEASE and possibly mortality, so prompt diagnosis and treatment is important. Consult your physician if you experience the following symptoms and have been in contact with wild rabbits or rodents or had a recent tick bite: high fever, progressive weakness, malaise, anorexia, and weight loss; non-healing ulcerated wounds. Depending on whether the organism was inhaled or ingested, respiratory symptoms or gastrointestinal symptoms may be present.