Tularemia Information Sheet
NORAD-USNORTHCOM/SG

SG

What is tularemia?
Tularemia is an infection caused by the very hardy bacteria, *Francisella tularensis*, one of the most infectious disease causing bacteria known. It is found predominantly in rodents, rabbits and hares.

Why are we concerned with tularemia as a bioweapon?
Francisella tularensis is highly infectious: a small number of bacteria (10-50 organisms) can cause disease. If *F. tularensis* were used as a bioweapon, the bacteria would likely be made airborne for exposure by inhalation. Persons who inhale an infectious aerosol would generally experience severe respiratory illness, including life-threatening pneumonia and systemic infection, if they were not treated. The bacteria that causes tularemia occurs widely in nature and could be isolated and grown in quantity in a laboratory, although manufacturing an effective aerosol weapon would require considerable sophistication.

Does this disease occur naturally?
Yes. It is a widespread disease of animals. Approximately 200 cases of tularemia in humans are reported annually in the United States, mostly in persons living in the south-central and western states. Nearly all cases occur in rural areas and are associated with the bites of infective ticks and biting flies or with the handling of infected rodents, rabbits, or hares.

What are the symptoms of tularemia?
Depending on the route of exposure, the tularemia bacteria may cause skin ulcers, swollen and painful lymph glands, inflamed eyes, sore throat, oral ulcers, or pneumonia. If the bacteria were inhaled, symptoms would include the abrupt onset of fever, chills, headache, muscle aches, joint pain, dry cough, and progressive weakness. Persons with pneumonia can develop chest pain, difficulty breathing, bloody sputum, and respiratory failure. 40% or more of persons with the lung and systemic forms of the disease may die if they are not treated with appropriate antibiotics.

Is the disease seasonal in its occurrence?
No seasonal occurrences in the literature.

Where is the disease currently established?
Tularemia occurs throughout much of North America and Eurasia. In the U.S., human cases have been reported in every state except Hawaii, with the majority occurring in south-central and western states. It is found in widely diverse animal hosts and habitats and can be recovered from contaminated water, soil, and vegetation. A variety of small mammals are natural reservoirs of infection.

How does tularemia spread?
Typically, persons become infected through the bites of arthropods (most commonly, ticks and deerflies) that have fed on an infected animal, by handling infected animal carcasses, by eating or drinking contaminated food or water, or by inhaling infected aerosols.

What is the risk of spreading tularemia?
People have not been known to transmit the infection to others, so infected persons do not need to be isolated. No factors associated with age, locale, gender.

How soon do infected people get sick?
The incubation period for tularemia is typically 3 to 5 days, with a range of 1 to 14 days.

How is tularemia diagnosed?
When Tularemia is clinically suspected, the healthcare worker will collect specimens, such as blood or sputum, from the patient for testing in a diagnostic or reference laboratory. Laboratory test results for tularemia may be presumptive or confirmatory. Presumptive (preliminary) identification may take less than 2 hours, but confirmatory testing will take longer, usually 24 to 48 hours.

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Is a vaccine available to prevent tularemia?
In the past, a vaccine for tularemia has been used to protect laboratory workers, but it is currently under review by the Food and Drug Administration.

Can tularemia be treated?
Yes. After potential exposure or diagnosis, early treatment is recommended with an antibiotic from the tetracycline (such as doxycycline) or fluoroquinolone (such as ciprofloxacin) class, which are taken orally, or the antibiotics streptomycin or gentamicin, which are given intramuscularly or intravenously. Sensitivity testing of the tularemia bacterium can be done in the early stages of a response to determine which antibiotics would be most effective.

Where will the medications/immunizations to treat infected individuals come from?
Regionally dependent resources based on national stockpiles.

Are there contraindications to vaccine, antibiotic therapy, other treatments (ie. Pregnancy, immunosuppression, etc) ?
Pregnant and immunosuppressed patients should receive the normal post exposure treatment protocol. This recommendation is based upon tularemia's 40% death rate if untreated.

How long can tularemia exist in the environment?
Francisella tularensis can remain alive for weeks in water and soil.

Are there ways to test for tularemia in the environment?
No field expedient methods are available for testing. Samples must be sent to laboratory for testing

What should someone do if they suspect they or others have been exposed to tularemia?
Seek prompt medical attention. If a person has been exposed to *Francisella tularensis*, treatment with tetracycline antibiotics for 14 days after exposure may be recommended. Local and state health departments should be notified immediately so an investigation and control activities can begin quickly. If the exposure is thought to be due to criminal activity (bioterrorism), local and state health departments will notify CDC, the FBI, and other appropriate authorities.

What can I do to reduce the risk of getting tularemia or giving it to someone else?
People have not been known to transmit the infection to others, so infected persons do not need to be isolated. Good handwashing after dealing with any wild animal population, especially rodents, will greatly reduce the risk of contracting the disease.

Reference:
www.bt.cdc.gov
USAF AFIOH/SD