

## 6.9 Tularemia

<http://www.phac-aspc.gc.ca/tularemia/index-eng.php>

### Case Definition

#### Confirmed Case

Laboratory confirmation of infection:

- isolation of *Francisella tularensis* from an appropriate clinical specimen

OR

- ELISA-based seriological test for *Francisella tularensis*

OR

- fourfold serum antibody titre change to *Francisella tularensis* antigen

#### Probable Case

Clinical illness, as described below, and:

- epidemiologically link to a laboratory-confirmed case or event

OR

- detection of *Francisella tularensis* nucleic acid

OR

- microagglutination titre ( $\geq 1:128$ )

#### Suspected Case

- Clinical illness, as described below, in a person who is not epidemiologically linked to a laboratory-confirmed case or to a probable case of smallpox

### Clinical Presentation

Tularemia and Influenza both present very similarly. Sudden onset involves high fever, chills, fatigue, general aching, headache, and nausea. Most commonly it is accompanied with a skin ulcer at the point of infection. There is also swelling of the local lymph node, potentially accompanied by a glandular ulcer. This may give the appearance of a plague bubo. With ingestion of contaminated food, ulceration can present as pharyngitis, abdominal pain, diarrhea, and vomiting. Inhalation can produce pneumonia or septicemia. *Francisella tularensis* type A has a case fatality of up to 30%, if untreated. The less virulent type B has a negligible case-fatality even without treatment.

### Diagnosis

Case confirmation is based on findings consistent with the above listed case definition.

## **Epidemiology**

### **Occurrence**

Tularemia is largely endemic in North America, Europe and East Asia. It peaks during May through August but is present year round.

### **Reservoir**

In North America tularemia is found mainly in rabbits, but can also be found in other larger rodents. Some wood ticks may also harbour the disease.

### **Transmission**

Arthropod bites, principally from the wood and dog tick are the most common means of transmission. Tularemia may also be found in untreated water of areas where tularemia is present. Additionally, it can occur through eating the meat of infected animals. Direct person-to-person transmission does not occur. Tularemia is believed to be a possible bioterrorist threat because it can be aerosolized.

### **Incubation Period**

The incubation period is usually 3-5 days after exposure but can range from 1-14.

### **Period of Communicability**

No person-to-person transmission occurs. Ticks remain infectious their entire life span. Rabbit meat has been found to be infectious even after 3 years in frozen storage.

## **Control Measures**

### **Management of Cases**

For cases of tularaemia, no isolation is required. Disinfection of drainage and secretions may be done as a precaution. Aminoglycosides are the most effective and should last for 10-14 days. Tetracyclines can also be used but for 21 days. Beta-lactam and cephalosporines are ineffective treatments.

### **Management of Contacts**

Tularemia is not transmitted through person-to person contact so contact management is unnecessary.

### **Management of Outbreaks**

Outbreak management procedures depend on the type of outbreak. Enteric or tick borne manifestations require management consistent with other vector borne diseases. If a number of respiratory tularemia cases are found at one time, bioterrorist dispersal may be suspect. Cases require prompt identification and

treatment. Prophylaxis can be pursued in extreme cases and treatment should be handled as with cases: Aminoglycosides for 10-14 days or tetracyclines for 21 days.

### **Preventive Measures**

The principle prevention methods rely on education of the public. Areas where the disease is present should be informed to refrain from drinking untreated ground water and how to avoid tick bites. Similarly, hunters should know to thoroughly cook rabbit and other large rodent meat.

### **Reporting Requirements**

The PH Lab will provide immediate report of any identified cases

### **Regional MOH will notify**

- Local physicians, nurse practitioners, communicable disease control nurses (CDCNs) and infection control nurses (ICN) in the particular region.
- Provincial office of the CMOH as per list A

### **Provincial Public Health is responsible for**

- Reporting the data related to the disease to PHAC and other regions.
- Analysis of cases and reporting in the Communicable Disease Report (CDR)