**Organism/Stability**
- *Francisella tularensis*: Gram-negative bacteria, small, non-motile, aerobic, coccobacillus; non-spore forming; comes in two subspecies (biovars):
  - Jellison type A (*tularensis*) – highly virulent
  - Jellison type B (*palaearctica*) – less virulent
- Survives for weeks at low temperatures in water, moist soil, hay, straw, and decaying animal carcasses

**Infective Dose**
Very low; approximately 10 organisms

**Natural Reservoir**
Small mammals (including voles, mice, squirrels, rabbits, hares)

**Route of Infection**
- Inhalation of or contact with infective aerosols
- Bite of infected arthropods (wood, dog and lone star ticks; deer flies; and, in other countries, mosquitoses)
- Ingestion of contaminated meat, water, soil or vegetation
- Contact with contaminated water, soil, vegetation or infectious animal tissues or fluids

**Communicability**
- No person-to-person transmission
- Laboratory workers who do not use proper protective equipment are at risk

**Risk Factors**
Hunting; trapping; butchering; farming; handling infective laboratory specimens

**Case Fatality**
- Untreated Type A: 5-15% and as high as 30-60% for pneumonic and systemic disease
- Type B: few fatalities occur, even without treatment

**Incubation Period**
3 to 5 days (range 1 to 14 days)

**Clinical Manifestations**
- **Glandular**: regional lymphadenopathy with no ulcer; occurs through contact with an infected animal carcass or through an arthropod bite
- **Ulceroglandular**: cutaneous ulcer with regional lymphadenopathy; occurs through contact with an infected animal carcass or through an arthropod bite
- **Oculoglandular**: conjunctivitis with preauricular lymphadenopathy; occurs with direct contamination of eye
- **Oropharyngeal**: stomatitis, pharyngitis, tonsillitis, cervical lymphadenopathy; occurs through ingestion of contaminated food or water or inhalation of contaminated droplets
- **Intestinal**: intestinal pain, vomiting and diarrhea; occurs rarely, through ingestion of contaminated food or water
- **Typhoidal**: febrile illness without early localizing signs and symptoms; used to describe illness in patients with systemic infections without cutaneous or mucosal membrane lesions
- **Pneumonic**: primary pleuropulmonary disease; occurs through inhalation of infectious aerosols or secondary to hematogenous spread

**Laboratory Tests/Sample Collection**
Lymph node aspirate; bronchial or tracheal wash or induced sputum; eye swab; blood; biopsy of ulcer/wound. Alert lab of biohazard. For consult, page the state lab (DCLS), available 24/7, at 804-418-9923.

**Radiography**
Earliest findings may be peribronchial infiltrates advancing to bronchopneumonia.

**Treatment**
*(for adults)*
- **Streptomycin (preferred)**, 1 gm IM twice daily X 10 days, or
- **Gentamicin (preferred)**, 5 mg/kg IM or IV once daily X 10 days (Not an FDA approved use), or
- Ciprofloxacin, 400 mg IV twice daily X 10 days (Not an FDA approved use), or
- Chloramphenicol, 15mg/kg IV 4 times daily X 14-21 days *(Not for pregnant women)*, or
- Doxycycline, 100mg IV twice daily X 14-21 days

**Prophylaxis**
*(adults)*
- **Doxycycline (preferred)**, 100 mg orally twice daily X 14 days, or
- Ciprofloxacin, 500 mg orally twice daily X 14 days *(Not an FDA approved use)*

**Infection Control**
Isolation not recommended for patients. Use contact precautions for open lesions.

**Vaccine**
Lab workers routinely working with the organism should be vaccinated. A vaccine is under review by the FDA for use in the general population; future availability is undetermined.

**Public Health**
Suspected cases of tularemia must be reported to the local health department by the most rapid means available.


*Updated 12/16/2004*