Francisella Tularensis Exposure Medical Response Guidance
for the University of Wisconsin-Madison

1.0 Instructions: Information in this guidance is meant to inform both laboratory staff and health professionals about the risks and treatment in the event of an infectious agent exposure. In using this guidance, please consider that multiple routes of exposure may occur in a lab and that organism strains will sometimes be genetically modified to incorporate traits such as antimicrobial resistance. Research protocols and other available guidance such as Health Canada material safety data sheets will be provided as supporting information when available. It should be assumed that when exposures do occur, that the healthcare provider will be provided with information about the specific organism and strain involved, route of exposure, inoculum concentration, and victim vaccination and serological status, when available. This document was developed by UW Occupational Medicine in consultation with the UW Division of Infectious Disease. The information provided below is intended to provide guidance for treating physicians. Treatment and evaluation plans should be individualized to the patient based on the patient’s symptoms, exposure risk, and underlying health status.

If there are any questions about this document, please contact University Health Services, Occupational Medicine at 265-5610.

2.0 Signs and Symptoms of Infection- Describe signs and symptoms associated with the agent. Francisella tularensis is a highly infectious bacterium that causes a zoonotic infection, tularemia. Human infection occurs after contact with infected animals. Signs and symptoms vary depending on the route of entry.

All forms are accompanied by fever.

Respiratory symptoms are the most serious caused by inhalation of aerosols containing the bacteria. They include cough, chest pain and difficulty breathing.

Skin ulcer may develop after handling an infected animal. This may be accompanied by enlarged lymph nodes.

Other signs and symptoms occur if the bacterium entered through the eyes or mouth including irritation and inflammation of eye, swelling of lymph glands in front of the ear, sore throat, mouth ulcers, tonsillitis, and swelling of lymph glands in the neck.

3.0 Infectivity- Describe infective dose, relevant exposure routes (considering laboratory use), incubation period and potential severity of infection.

The bacterium that causes tularemia is highly infectious and can enter the human body through the skin, eyes, mouth, throat, or lungs.

Exposure in the laboratory setting can occur from handling cultures, handling infected animals, splashing infected material into the eyes, during procedures that generate
aerosols containing the bacteria or rubbing the eyes with contaminated fingers.

Person to person transmission has not been reported.

Incubation period is 3 to 5 days on average (range 1 to 21 days)

4.0 Description of First Aid - Provide an overview of first aid treatment of exposures considering that multiple routes of exposure could occur (needlestick, aerosol, eye, skin and ingestion).

Cleanse exposed area for minimum of 15 minutes – as soon as possible following exposure.

- **Skin**: scrub with chlorohexidine or the antibacterial scrub approved for the laboratory for 15 minutes.

- **Eye or mucus membranes**: Use sterile saline or water to irrigate for 15 minutes, preferably in an eye wash station.

5.0 Urgency of Medical Care- Describe how soon medical attention should be sought, i.e. is an ER visit necessary, a visit to University Health Services, or simply schedule a visit with a personal physician.

All exposures, after initial first aide, should be immediately reported to UW-Madison RO or ARO's (Responsible Official or Alternate Responsible Official) and PI. RO/ARO's can be reached at their direct office numbers or through the UW-Madison Police Department at 262-2957 or by dialing 9-1-1. RO/ARO will contact UW Infectious Disease to arrange for appropriate medical attention and notify UHS Occupational Medicine (608-262-5610 or 608-252-0955).

6.0 Description of Medical Response- Provide an overview for clinical treatment of exposures to the agent considering that multiple routes of exposure could occur (needlestick, aerosol, eye, skin and ingestion) and that strains of agents will vary and sometimes include antimicrobial resistance.

Management of exposures will be coordinated through UW Infectious Disease. Options may include “fever watch (monitor temperature for development of fever > 101F)” or antibiotic prophylaxis. Antibiotic prophylaxis may be considered in high risk exposures such as conducting procedures that generate aerosols or splashing of infected material into the eyes or mucus membranes.

Antibiotic prophylaxis consists of oral **ciprofloxacin** 500 mg or **doxycycline** 100 mg twice daily for 14 days. This should be offered to anyone with a high risk exposure or for those who request prophylaxis.

Diagnosis is usually confirmed serologically by detecting antibodies to *F. tularensis* using a tube agglutination or microagglutination assay.

Once diagnosis is confirmed, treatment recommendations generally include intramuscular
streptomycin or gentamicin for moderate to severe disease or oral ciprofloxacin / doxycycline for mild disease.

7.0 Description of Medical Surveillance- Describe the advisability of medical surveillance strategies (in particular baseline and annual serology) for those working with the agent. If doing so would likely improve the identification, diagnosis or treatment of exposures, please indicate so.

No routine baseline and annual serological testing is recommended as part of surveillance.

8.0 Considerations for Infection Control- Describe any special precautions required to prevent the further spread of infection. Include precautions for the healthcare, workplace, and home setting.

Isolation of confirmed case of tularemia is not recommended since there is no reported person to person transmission.

However, contact precautions should be implemented when a confirmed case has open skin lesions.

No vaccine is currently available against tularemia.

Standard hygiene precautions should be used such as use of gloves while handling specimens / infected animals, performing aerosol generating procedures under BSL-3 conditions.

9.0 Reporting- Describe any public health or federal regulatory reporting requirements. Include the timing and mechanism for reporting.

Public Health: Cases or suspected cases only are reportable to the patient’s local health department either electronically through the Wisconsin Electronic Disease Surveillance System (WEDSS) or by mail or fax using an Acute and Communicable Disease Case Report (F-44151), on an Acute and Communicable Disease Case Report (DPH 4151) or by other means within 72 hours of identification. See s. HFS 145.04 (3) (b).

Other: Exposure or potential exposure will be reported to the state health department communicable disease section by the Responsible Official at 608-267-9003(7:45 AM-4:30 PM) or through the 24 hour WI health department clinical emergency contact number 608-258-0099 (after hours). The CDC Division of Select Agents and Toxins will also be notified by the Responsible Official.
10.0 References:


http://www.uptodate.com/contents/clinical-manifestations-diagnosis-and-treatment-of-tularemia?detectedLanguage=en&source=search_result&search=tularemia&selectedTitle=1%7E55&provider=noProvider#H14

http://www.cdc.gov/tularemia/index.html

11.0 Document Revisions

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<tr>
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<th>Date</th>
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