

PLAGUE

Last revised August 16, 2011

I. IDENTIFICATION

- A. **CLINICAL DESCRIPTION:** A febrile illness caused by the bacterium *Yersinia pestis*, transmitted to humans by fleas or by direct exposure to infected tissues or respiratory droplets. *Yersinia pestis* is a potential bioterrorism agent. The disease is characterized by fever, chills, headache, malaise, prostration, and leukocytosis that manifests in one or more of the following principal clinical forms:
- Regional lymphadenitis (bubonic plague)
 - Septicemia without an evident bubo (septicemic plague)
 - Plague pneumonia, resulting from hematogenous spread in bubonic or septicemic cases (secondary pneumonic plague) or inhalation of infectious droplets (primary pneumonic plague)
 - Pharyngitis and cervical lymphadenitis resulting from exposure to larger infectious droplets or ingestion of infected tissues (pharyngeal plague)
- B. **REPORTING CRITERIA:** Clinical diagnosis initially; laboratory confirmation required to meet case definition.
- C. **LABORATORY CRITERIA FOR CONFIRMATION:**
1. *Confirmatory*
 - a) Isolation of *Y. pestis* from a clinical specimen or
 - b) Fourfold or greater change in serum antibody titer to *Y. pestis* fraction 1 (F1) antigen
 2. *Supportive*
 - a) Elevated serum antibody titer(s) to *Y. pestis* F1 antigen (without documented fourfold or greater change) in a patient with no history of plague vaccination or
 - b) Detection of F1 antigen in a clinical specimen by fluorescent assay
- D. **WISCONSIN CASE DEFINITION:**
- Confirmed:* a clinically compatible case with confirmatory laboratory results
- Probable:* a clinically compatible case with supportive laboratory results only

II. ACTIONS REQUIRED / PREVENTION MEASURES

- A. **WISCONSIN DISEASE SURVEILLANCE CATEGORY I:** Report **IMMEDIATELY BY TELEPHONE** to the patient's local health department upon identification of a confirmed or suspected case. The local health department shall then notify the state epidemiologist **immediately** of any confirmed or suspected cases. Within 24 hours submit a case report electronically through the Wisconsin Electronic Disease Surveillance System (WEDSS), by mail or fax using an Acute and Communicable Disease Case Report ([F-44151](#)), or by other means.
- B. **EPIDEMIOLOGY REPORTS REQUIRED:**
- *Electronically* – Report through WEDSS, including appropriate disease-specific tabs
- OR

Wisconsin Division of Public Health Communicable Disease Surveillance Guideline

- *Paper Copy* – Acute and Communicable Diseases Case Report (F-44151) along with all pertinent laboratory data

C. PUBLIC HEALTH INTERVENTIONS:

In accordance with Wisconsin Administrative rule DHS 145.05, local public health should follow the methods of control recommended in the current edition of *Control of Communicable Diseases Manual*, edited by David L. Heymann, published by the American Public Health Association. Briefly:

- Ensure that appropriate isolation precautions are being taken at the facility in which the patient is hospitalized.
- Assess need for chemoprophylaxis and surveillance for persons exposed to case-patient.
- Source investigation (performed in cooperation with the BPH) should be conducted. Search for history of travel to plague-endemic areas, or contact with persons or animals from plague-endemic areas during the 14 days prior to illness onset.
- Consider the possibility of an intentional release.

D. BIOTERRORISM MEASURES: *Yersinia pestis* is considered to be a potential biowarfare/bioterrorist agent, particularly if used as an aerosol threat. Cases acquired by inhalation would present as primary pneumonia. Such cases require prompt identification and specific treatment to prevent fatal outcome. All diagnosed cases of pneumonia due to *Y. pestis*, especially any cluster of cases, should be reported immediately to the local and state health departments for appropriate investigations.

III. CONTACTS FOR CONSULTATION

A. LOCAL HEALTH DEPARTMENT – REGIONAL OFFICES – TRIBAL AGENCIES:

<http://www.dhs.wisconsin.gov/localhealth/index.htm>

B. BCDER / COMMUNICABLE DISEASE EPIDEMIOLOGY SECTION: (608) 267-9003

C. WISCONSIN STATE LABORATORY OF HYGIENE / BACTERIOLOGY: (608) 263-3421

IV. RELATED REFERENCES

- Heymann DL, ed. Plague. In: *Control of Communicable Diseases Manual*. 19th ed. Washington, DC: American Public Health Association, 2008:463-471
- Pickering LK, ed. Plague. In: *Red Book: 2009 Report of the Committee on Infectious Diseases*. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2009:522-524