



Communicable Disease Case Reporting and Investigation Protocol **PLAGUE**

I. IDENTIFICATION AND DEFINITION OF CASES

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 manifest 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. Laboratory Criteria:

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

C. Wisconsin Surveillance Case Definition:

1. **Confirmed:** A clinically compatible case with confirmatory laboratory results
2. **Probable:** A clinically compatible case with supportive laboratory results only

II. REPORTING

- A. **Wisconsin Notifiable Disease Category I – Methods for Reporting:** This disease shall be reported **IMMEDIATELY BY TELEPHONE** to the patient's local health officer or to the local health officer's designee upon identification of a case or suspected case, per Wis. Admin. Code § [DHS 145.04 \(3\) \(a\)](#). In addition to the immediate report, complete and fax, mail or electronically report an Acute and Communicable Diseases Case Report (DHS [F-44151](#)) to the address on the form, or enter the data into the Wisconsin Electronic Disease Surveillance System (WEDSS), within 24 hours.
- B. **Responsibility for Reporting:** According to Wis. Admin. Code § [DHS 145.04\(1\)](#), persons licensed under Wis. Stat. ch. [441](#) or [448](#), laboratories, health care facilities, teachers, principals, or nurses serving a school or day care center, and any person who knows or suspects that a person has a communicable disease identified in [Appendix A](#).
- C. **Clinical Criteria for Reporting:** Clinical diagnosis initially; laboratory confirmation required to meet case definition.
- D. **Laboratory Criteria for Reporting:** Any test positive or presumptive for *Y. pestis*.

III. CASE INVESTIGATION

- A. **Responsibility for case investigation:** It is the responsibility of the local health department (LHD) to investigate or arrange for investigation of suspected or confirmed cases as soon as is reasonably possible. A case investigation may include information collected by phone, in person, in writing, or through review of medical records or communicable disease report forms, as necessary and appropriate.

A source investigation is required. A detailed 14-day travel history should be obtained along with information on the patient's clinical presentation. Investigators should coordinate closely with Bureau of Communicable Diseases (BCD) staff.

B. Required Documentation:

1. Complete the Wisconsin Electronic Disease Surveillance System (WEDSS) disease incident investigation report, including appropriate, disease-specific tabs.
2. Complete the Centers for Disease Control and Prevention (CDC) case report form <https://www.cdc.gov/plague/resources/PlagueCaseReportForm.pdf> and save this form into the WEDSS file cabinet.
3. Upon completion of investigation, set WEDSS disease incident process status to "Sent to State."

C. Additional Investigation Responsibilities:

1. Assess need for chemoprophylaxis and surveillance for persons exposed to case-patient.
2. Source investigation (performed in cooperation with the BCD) 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.
3. Consider the possibility of an intentional release. *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.

IV. PUBLIC HEALTH INTERVENTIONS AND PREVENTION MEASURES

- A. In accordance with Wis. Admin. Code § [DHS 145.05](#), local public health agencies should follow the methods of control recommended in the current editions of *Control of Communicable Diseases Manual*, edited by David L. Heymann, published by the American Public Health Association, and the American Academy of Pediatrics' *Red Book: Report of the Committee on Infectious Diseases*, unless otherwise specified by the state epidemiologist.
- B. Additional prevention measures include:
1. Ensure that appropriate isolation precautions are being taken at the facility in which the patient is hospitalized.
 2. Persons traveling to plague-endemic areas should be encouraged to use insect repellent if they might be exposed to rodent fleas during activities such as camping, hiking, or working outdoors.
 3. In endemic areas, flea control products should be used on pets that go outdoors.

V. CONTACTS FOR CONSULTATION

- A. Local health departments and tribal health agencies: <https://www.dhs.wisconsin.gov/lh-depts/index.htm>
- B. Bureau of Communicable Diseases, Communicable Diseases Epidemiology Section: 608-267-9003
- C. Wisconsin State Laboratory of Hygiene: 1-800-862-1013

VI. RELATED REFERENCES

- A. Heymann DL, ed. Plague. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 456-465.
- B. Pickering LK, ed. Plague. In: *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015: 624-626.
- C. Centers for Disease Control and Prevention website: <https://www.cdc.gov/plague/index.html>