Wisconsin Department of Health Services
Division of Public Health
P-01914 (Rev 08/2017)

Communicable Disease Case Reporting and Investigation Protocol

HISTOPLASMOSIS

I. IDENTIFICATION AND DEFINITION OF CASES

A. **Clinical Description:** A systemic fungal infection of varying severity caused by *Histoplasma capsulatum*. Infection may be asymptomatic or take one of four clinical forms:

- Acute respiratory—mild respiratory illness with general malaise, fever, chills, headache, myalgia, chest pains, nonproductive cough, and scattered small calcifications of the lung.
- Acute disseminated—debilitating fever, GI symptoms, bone marrow suppression, and lymphadenopathy. Most frequent in children and immunosuppressed; often fatal if not treated.
- Chronic pulmonary—clinically and radiologically resembles chronic pulmonary tuberculosis with cavitations, usually in middle-aged and elderly persons with underlying emphysema.
- Chronic disseminated—low-grade fever, weight loss, weakness, liver and spleen enlargement, mucosal ulcers, subacute course with slow progression; fatal if not treated.

Clinically compatible presentation includes either:

- At least two of the following clinical findings:
  - fever,
  - chest pain,
  - cough,
  - myalgia,
  - shortness of breath,
  - headache, or
  - erythema nodosum/erythema multiforme rash;

  OR
- At least one of the following clinical findings:
  - Abnormal chest imaging (e.g., pulmonary infiltrates, cavitation, enlarged hilar, or mediastinal lymph nodes, pleural effusion);
  - Clinical evidence of disseminated disease:
    - gastrointestinal ulcerations or masses;
    - skin or mucosal lesions;
    - peripheral lymphadenopathy;
    - pancytopenia, as evidence of bone marrow involvement;
    - enlargement of the liver, spleen, or abdominal lymph nodes; or
    - meningitis, encephalitis, or focal brain lesion.

B. **Laboratory Criteria:**

- **Confirmatory laboratory evidence:**
  - Culture of *H. capsulatum* from a clinical specimen, **or**
  - Identification of characteristic *H. capsulatum* yeast in tissue or sterile body fluid by histopathology, **or**
  - ≥ 4-fold rise in *H. capsulatum* serum complement fixation antibody titers taken at least two weeks apart, **or**
  - Detection in serum of H band by *H. capsulatum* immunodiffusion antibody test, **or**
  - Detection in serum of M band by *H. capsulatum* immunodiffusion antibody test after a documented lack of M band on a previous test (i.e., seroconversion), **or**
  - Demonstration of *H. capsulatum*-specific nucleic acid in a clinical specimen using a validated assay (i.e., PCR).

- **Supportive laboratory evidence:**
  - Identification of characteristic *H. capsulatum* yeast in tissue or sterile body fluid by cytopathology, **or**
  - Detection in serum or cerebrospinal fluid (CSF) of *H. capsulatum* antibodies by single complement fixation titer of 1:32 or greater (e.g., 1:64), **or**
  - Detection in serum or cerebrospinal fluid (CSF) of M band by *H. capsulatum* immunodiffusion antibody test without a previous negative test, **or**
  - Detection of *H. capsulatum* antigen in serum, urine, or other body fluid by an enzyme immunoassay test; **AND**
  - No compelling laboratory evidence of another mycotic infection is available.

C. **Wisconsin Surveillance Case Definition:**

- **Confirmed:** A clinically compatible case that meets at least one of the confirmatory laboratory criteria.
- **Probable*:**
  - A clinically compatible case that meets supportive laboratory criteria; **OR**
  - A case that meets confirmatory laboratory criteria, but no clinical information is available; **OR**
  - A clinically compatible case that does not meet laboratory criteria, but is epidemiologically linked to a confirmed case.

***Note**: Illness in a person with compelling evidence (e.g., culture, histopathology, seroconversion) of a different fungal infection, such as blastomycosis or coccidioidomycosis, and meeting only supportive laboratory criteria for histoplasmosis, should not be counted as a case of histoplasmosis since other fungal infections can cause false positive *H. capsulatum* antigen and antibody test results.

II. REPORTING

A. **Wisconsin Disease Surveillance Category II – Methods for Reporting:** This disease shall be reported to the patient's local health officer or to the local health officer's designee within 72 hours of recognition of a case or suspected case, per Wis. Admin. Code § DHS 145.04 (3) (b). Report electronically through the Wisconsin Electronic Disease Surveillance System (WEDSS), or mail or fax a completed Acute and Communicable Disease Case Report (F-44151) to the address on the form.

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:** Clinically compatible illness.

D. **Laboratory Criteria for Reporting:** Laboratory evidence of infection by culture or non-culture-based methods. All positive results should be reported.

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.

B. **Required Documentation:**

1. Complete the WEDSS disease incident investigation report, including appropriate, disease-specific tabs.
2. Complete and scan into the WEDSS filing cabinet the Histoplasmosis Case Worksheet (https://www.dhs.wisconsin.gov/library/f-02086.htm).
3. Upon completion of investigation, set WEDSS disease incident process status to "Sent to State."

C. **Additional Investigation Responsibilities**

Determine whether the case is potentially outbreak-related and, if so, notify the Bureau of Communicable Diseases.

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. Provide the patient with appropriate health education and offer fact sheet: https://www.dhs.wisconsin.gov/library/P-42058.htm.

C. Recommended preventive measures:
- Minimize exposure to dust in areas contaminated by bird droppings such as chicken or pigeon coops, bird or bat roosts and surrounding soil.
- Surfaces can be sprayed with water to reduce dust; protective masks should be worn during cleaning. Areas may be chemically decontaminated.
- Identify and decontaminate potentially infectious foci (e.g., attics, bird roosts, barns, etc.).

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. Histoplasmosis. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 284-287.

B. Pickering LK, ed. Histoplasmosis. In: *Red Book*: *2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015: 445-448.

C. Centers for Disease Control and Prevention website: https://www.cdc.gov/fungal/diseases/histoplasmosis/index.html.

D. Wisconsin Histoplasmosis Case Worksheet: https://www.dhs.wisconsin.gov/library/f-02086.htm.

E. Wisconsin Histoplasmosis Fact Sheet: https://www.dhs.wisconsin.gov/library/P-42058.htm.