



## Communicable Disease Case Reporting and Investigation Protocol **BLASTOMYCOSIS**

### I. IDENTIFICATION AND DEFINITION OF CASES

A. **Clinical Description:** Blastomycosis is an acute or chronic illness caused by inhalation of spores of the dimorphic fungus *Blastomyces* that primarily affects the lungs and skin, although the clinical presentation and severity can be variable. Approximately 50% of infected individuals have mild symptoms or remain asymptomatic. Symptoms of acute illness may be highly non-specific, mimicking influenza or acute bacterial pneumonia with abrupt onset of cough, fever, chills, myalgia, and arthralgia. Symptoms of chronic pulmonary blastomycosis include cough, weight loss, chest pain, night sweats, low grade fever, skin lesions and hemoptysis, and may be suggestive of chronic tuberculosis, histoplasmosis, or lung cancer. A single skin lesion can indicate a localized infection resulting from dermal inoculation, but multiple skin lesions are a sign of disseminated blastomycosis. Dissemination of *Blastomyces* can occur from the lungs to almost any other organ, including the central nervous system, bones, pericardium, genitourinary tract, and gastrointestinal tract.

#### Criteria for a clinically compatible case includes either:

- Two or more of the following signs or symptoms:
  - fever
  - chest pain
  - cough
  - hemoptysis
  - myalgia
  - shortness of breath
  - headache
- OR**
- One or more of the following clinical findings:
  - Single skin lesion
  - Abnormal chest imaging (e.g., pulmonary infiltrates, cavitation, enlarged hilar or mediastinal lymph nodes, pleural effusion)
  - Clinical evidence of disseminated disease (one or more of the following):
    - multiple skin lesions
    - peripheral lymphadenopathy
    - bone involvement
    - pancytopenia, as evidence of bone marrow involvement
    - enlargement of the liver, spleen, or abdominal lymph nodes
    - meningitis, encephalitis, or focal brain lesion

### B. Laboratory Criteria:

- **Confirmatory laboratory criteria (one or more of the following):**
  - Culture of *Blastomyces* from a clinical specimen
  - Identification of characteristic *Blastomyces* large, broad-based, budding yeast in tissue or sterile body fluid by histopathology
  - Demonstration of *Blastomyces*-specific nucleic acid in a clinical specimen using a validated assay (i.e., PCR)
- **Supportive laboratory criteria:**
  - Identification of characteristic *Blastomyces* large, broad-based, budding yeast in tissue or clinical body fluid (e.g., CSF, sputum, BAL, aspirate) by cytopathology, or
  - $\geq 4$ -fold rise in *Blastomyces* serum immunodiffusion antibody titers taken at least two weeks apart, or

- Detection of quantifiable *Blastomyces* 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 clinically compatible case that does not meet laboratory criteria, but is epidemiologically linked to a confirmed case.

\***Note:** Illness in a person with compelling laboratory evidence (e.g., culture, histopathology, seroconversion) of a different fungal infection, such as histoplasmosis or coccidioidomycosis, and meeting only supportive laboratory criteria for blastomycosis should not be counted as a case of blastomycosis because other fungal infections can cause false positive *Blastomyces* 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 using 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 Blastomycosis Case Worksheet (<https://www.dhs.wisconsin.gov/forms/f01758.pdf>).
  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-42030.htm>.

## 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. Blastomycosis. In: *Control of Communicable Diseases Manual*. 20th ed. Washington, DC: American Public Health Association, 2015: 69-71.
- B. Pickering LK, ed. Blastomycosis. In: *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015: 263-264.
- C. Centers for Disease Control and Prevention website:  
<https://www.cdc.gov/fungal/diseases/blastomycosis/index.html>.
- D. Wisconsin Blastomycosis Case Worksheet: <https://www.dhs.wisconsin.gov/forms/f01758.pdf>.
- E. Wisconsin Blastomycosis Fact Sheet: <https://www.dhs.wisconsin.gov/library/p-42030.htm>.