

Histoplasmosis (*Histoplasma capsulatum*)

2018 Surveillance Case Definition

CSTE Position Statement: [16-ID-02](#)

Background and Clinical Description

Histoplasmosis, caused by the fungus *Histoplasma capsulatum*, encompasses a spectrum of disease ranging from self-limited respiratory illness to disseminated infection. *H. capsulatum* is an environmental fungus found worldwide that replicates well in nitrogen-rich soil, such as soil enriched by bird and bat droppings. In the United States, histoplasmosis is caused primarily by *Histoplasma capsulatum* var. *capsulatumis* which is endemic in the Ohio and Mississippi River valleys as well as other areas.

Histoplasmosis is typically acquired through inhalation of spores found in soil contaminated with bird or bat droppings. No direct human-to-human transmission has been reported. Symptoms generally develop 3–14 days after exposure, although many infections are asymptomatic. Acute pulmonary histoplasmosis is the most common form of disease, and symptoms typically include fever, headache, malaise, and cough. Severe pulmonary disease can involve a wide range of complications. Disseminated disease can also occur, usually in immunocompromised patients. Most cases of histoplasmosis are self-limited, but patients with persistent symptoms or moderate or severe disease require treatment with antifungals.

Clinical Criteria

Clinical presentation includes EITHER:

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

- 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
 - meningitis, encephalitis, or focal brain lesion

Laboratory Criteria

For the purposes of surveillance:

Confirmatory laboratory criteria:

- Culture of *H. capsulatum* from a clinical specimen
- Identification of characteristic *H. capsulatum* yeast in tissue or sterile body fluid by histopathology
- ≥ 4 -fold rise in *H. capsulatum* serum complement fixation antibody titers taken at least 2 weeks apart
- Detection in serum of H band by *H. capsulatum* immunodiffusion antibody test
- 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)
- Demonstration of *H. capsulatum*-specific nucleic acid in a clinical specimen using a validated assay (i.e., PCR)

Non-confirmatory laboratory criteria:

- Identification of characteristic *H. capsulatum* yeast in tissue or sterile body fluid by cytopathology
- 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)
- Detection in serum or cerebrospinal fluid (CSF) of M band by *H. capsulatum* immunodiffusion antibody test without a previous negative test
- Detection of *H. capsulatum* antigen in serum, urine, or other body fluid by an enzyme immunoassay test

Epidemiologic Linkage

Epidemiologically linked (e.g.: common environmental exposure) with a confirmed case.

Case Classification

Confirmed Case:

- A clinically-compatible case that meets confirmatory laboratory criteria.

Probable Case:

- A clinically-compatible case that meets non-confirmatory 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.

*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 non-confirmatory 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.

Criteria to distinguish a new case of this disease or condition from reports or notifications which should not be enumerated as a new case for surveillance

Following acute histoplasmosis, complement fixation titers and M-band on immunodiffusion antibody testing typically remain elevated for several years. People with chronic histoplasmosis may have cultures yielding *H. capsulatum* and positive antigen enzyme immunoassay testing for months or more. Distinct repeat infections have also been reported, typically involving acute pulmonary disease in endemic areas.

To minimize duplicate counting of chronic infections and missed repeat acute infections, illnesses in a given person should be counted no more than once every 24 months.