

Legionellosis: Legionnaires' Disease, Pontiac Fever or Extrapulmonary Legionellosis

2020 Case Definition

Clinical Criteria

Legionellosis is associated with three clinically and epidemiologically distinct illnesses: Legionnaires' disease, Pontiac fever, or extrapulmonary legionellosis.

Legionnaires' disease (LD): LD presents as pneumonia, diagnosed clinically and/or radiographically. Evidence of clinically compatible disease can be determined several ways: a) a clinical or radiographic diagnosis of pneumonia in the medical record **OR** b) if "pneumonia" is not recorded explicitly, a description of clinical symptoms that are consistent with a diagnosis of pneumonia. Clinical symptoms of pneumonia may vary but must include acute onset of lower respiratory illness with fever and/or cough. Additional symptoms could include myalgia, shortness of breath, headache, malaise, chest discomfort, confusion, nausea, diarrhea, or abdominal pain.

Pontiac fever (PF): PF is a milder illness. While symptoms of PF could appear similar to those described for LD, there are distinguishing clinical features. PF does not present as pneumonia. It is less severe than LD, rarely requiring hospitalization. PF is self-limited, meaning it resolves without antibiotic treatment. Clinical symptoms may vary, but must include acute symptom onset of one or more of the following: fever, chills, myalgia, malaise, headaches, fatigue, nausea and/or vomiting.

Extrapulmonary legionellosis (XPL): *Legionella* can cause disease at sites outside the lungs (for example, associated with endocarditis, wound infection, joint infection, graft infection). A diagnosis of extrapulmonary legionellosis is made when there is clinical evidence of disease at an extrapulmonary site and diagnostic testing indicates evidence of *Legionella* at that site.

Laboratory Criteria

Confirmatory laboratory evidence:

- Isolation of any *Legionella* organism from lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site
- Detection of any *Legionella* species from lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site by a validated nucleic acid amplification test
- Detection of *Legionella pneumophila* serogroup 1 antigen in urine using validated reagents

- Fourfold or greater rise in specific serum antibody titer to *Legionella pneumophila* serogroup 1 using validated reagents

Supportive laboratory evidence:

- Fourfold or greater rise in antibody titer to specific species or serogroups of *Legionella* other than *L. pneumophila* serogroup 1 (e.g., *L. micdadei*, *L. pneumophila* serogroup 6)
- Fourfold or greater rise in antibody titer to multiple species of *Legionella* using pooled antigens.
- Detection of specific *Legionella* antigen or staining of the organism in lower respiratory secretions, lung tissue, pleural fluid, or extrapulmonary site associated with clinical disease by direct fluorescent antibody (DFA) staining, immunohistochemistry (IHC), or other similar method, using validated reagents

Epidemiologic Linkage

1. Epidemiologic link to a setting with a confirmed source of *Legionella* (e.g., positive environmental sampling result associated with a cruise ship, public accommodation, cooling tower, etc.).

OR

2. Epidemiologic link to a setting with a suspected source of *Legionella* that is associated with at least one confirmed case.

Criteria to Distinguish a New Case from an Existing Case

An individual should be considered a new case if their previous illness was followed by a period of recovery prior to acute onset of clinically compatible symptoms and subsequent laboratory evidence of infection. The recovery period for legionellosis can vary based on patient-specific factors. CDC consultation is encouraged for case classification of individuals without clear periods of recovery or subsequent acute illness onset.

Case Classification

Suspect

Suspect Legionnaires' disease (LD): A clinically compatible case of LD with supportive laboratory evidence for *Legionella*.

Suspect Pontiac fever (PF): A clinically compatible case of PF with supportive laboratory evidence for *Legionella*.

Suspect Extrapulmonary legionellosis (XPL): A clinically compatible case of XPL with supportive laboratory evidence of *Legionella* at an extrapulmonary site.

Probable

Probable Legionnaires' disease (LD): A clinically compatible case with an epidemiologic link during the 14 days before onset of symptoms.

Probable Pontiac fever (PF): A clinically compatible case with an epidemiologic link during the 3 days before onset of symptoms.

Confirmed

Confirmed Legionnaires' disease (LD): A clinically compatible case of LD with confirmatory laboratory evidence for *Legionella*.

Confirmed Pontiac fever (PF): A clinically compatible case of PF with confirmatory laboratory evidence for *Legionella*.

Confirmed Extrapulmonary legionellosis (XPL): A clinically compatible case of XPL with confirmatory laboratory evidence of *Legionella* at an extrapulmonary site.