

Merlin disease code: 08301 Q Fever, Acute (*Coxiella burnetii*)

[Paper case report form](#) required

 Acute and convalescent sera for all cases must be sent to the Bureau of Public Health Laboratories

No Merlin extended data

**This condition has been identified as a potential bioterrorism agent by the CDC.**

## Background

Acute Q fever is an illness characterized by acute fever usually accompanied by rigors, myalgia, malaise, and a severe retrobulbar headache. Fatigue, night-sweats, dyspnea, confusion, nausea, diarrhea, abdominal pain, vomiting, non-productive cough, and chest pain have also been reported. Severe disease can include acute hepatitis, atypical pneumonia with abnormal radiograph, and meningoencephalitis. Pregnant women are at risk for fetal death and abortion. Clinical laboratory findings may include elevated liver enzyme levels, leukocytosis, and thrombocytopenia. Asymptomatic infections may also occur.

## Clinical criteria for case classification

Both of the following:

- Acute fever
- **And** one or more of the following:
  - Rigors,
  - **Or** severe retrobulbar headache,
  - **Or** acute hepatitis,
  - **Or** pneumonia,
  - **Or** elevated liver enzyme levels.

## Laboratory criteria for case classification

Confirmatory:

One or more of the following:

- Fourfold change in IgG-specific antibody titer to *Coxiella burnetii* phase II antigen by indirect immunofluorescence assay (IFA) between paired serum specimens, (CDC suggests one taken during the first week of illness and a second 3-6 weeks later, antibody titers to phase I antigen may be elevated or rise as well),
- **Or** detection of *C. burnetii* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR),
- **Or** detection of *C. burnetii* in a clinical specimen by immunohistochemistry (IHC),
- **Or** isolation of *C. burnetii* from a clinical specimen by culture.

Presumptive:

Either of the following:

- Single supportive IFA IgG titer of  $\geq 1:128$  to phase II antigen (phase I titers may be elevated as well)
- **Or** serologic evidence of elevated phase II IgG or IgM antibody reactive with *C. burnetii* antigen by enzyme immunoassay (EIA), dot-EIA, or latex agglutination.

Note: For acute testing, CDC uses in-house IFA IgG testing (cutoff of  $\geq 1:128$ ), preferring simultaneous testing of paired specimens, and does not use IgM results for routine diagnostic testing.

## Epidemiological criteria for case classification

A person who is epidemiologically linked to a Q fever case with laboratory criteria.

## Case classification

### Confirmed:

Either of the following:

- A clinically compatible illness in a person with confirmatory laboratory criteria
- **Or** a person with confirmatory laboratory criteria and epidemiological criteria.

### Probable:

A clinically compatible illness in a person with presumptive laboratory criteria.

## Criteria to distinguish a new case from previous reports

Not applicable.

## Comments

Serologic profiles of pregnant women infected with acute Q fever during gestation may progress frequently and rapidly to those characteristic of chronic infection.

Exposure is usually via aerosol, is broadly interpreted, and may be unknown, but often includes the presence of goats, sheep, or other livestock, especially during periods of parturition. Direct contact with animals is not required, and variable incubation periods may be dose dependent.