Q Fever

REPORTABLE DISEASES TOOLKIT

Information for Health Care Professionals

Reporting Obligations

Q Fever is designated as a disease of public health significance and is reportable under the Ontario Health Protection and Promotion Act. Report all suspect and confirmed cases within **one business day** to the health unit.

REPORTING FORM

Epidemiology

Aetiologic Agent:

Q fever is caused by *Coxiella burnetti* (*C. burnetti*), an intracellular rickettsial organism. It is classified in the gamma subgroup of Proteobacteria. The organism has unusual stability, can reach high concentrations in animal tissues, particularly placenta, and is highly resistant to many disinfectants.

Clinical Presentation:

Q fever can cause acute or chronic illness in humans. The acute symptoms caused by infection with *C.burnetii* usually develop within 2-3 weeks of exposure, although as many as half of humans infected with *C. burnetii* do not show symptoms.

Symptoms commonly seen with acute Q fever include high fever, severe headache, general malaise, myalgia, chills/sweats, non-productive cough, nausea, vomiting, diarrhea, abdominal pain and chest pain, however, it is important to note that the combination of symptoms varies greatly from person-to-person.

Modes of transmission:

When infected, animals shed the bacteria in urine, feces, milk and especially birth products such as placenta. Humans are most often infected following inhalation of contaminated aerosols; organisms are shed in high numbers during the birthing process of infected animals in amniotic fluid and the placenta. Humans can inhale dust contaminated by these products and contaminated dust can be carried downwind one kilometer or more. This can result in sporadic cases occurring at a distance from sources of contaminated animals. Infections may also occur from direct exposure to infected animals or tissues or through exposure to contaminated materials such as wool, straw, or even laundry. Consuming raw milk from infected cows may be an infrequent source of human infection; direct transmission by blood or marrow transfusion has been reported.

Incubation Period:

Depends on the size of the infectious doses, usually 2-3 weeks. Chronic Q fever can develop years after an initial infection.

Period of Communicability:

Direct person to person transmission occurs rarely, if ever.

Risk Factors/Susceptibility

Susceptibility is general. Those who recover from infection may possess lifelong immunity against re-infection. Risks include:

- Exposure to farm animals and animal products
- Living or working in close proximity to a farm

Diagnosis & Laboratory Testing

Laboratory confirmation of infection with clinically compatible signs and symptoms (sudden chills, retrobulbar headache, weakness, malaise, and severe sweats):

- A significant (i.e., fourfold, or higher) rise in specific IgG antibody titer to *C. burnetii* phase II antigen **OR**
- Isolation of *C. burnetii* from a clinical specimen **OR**
- Detection of *C. burnetii* DNA from a clinical specimen by NAAT testing

TESTING INFORMATION & REQUISITION

Treatment & Case Management

Treatment is under the direction of the attending health care provider. Acute cases generally require treatment with doxycycline or chloramphenicol for 15-21 days. Provide cases with information about the infection and how it spreads as listed above.

Public Health will follow with case management to determine source of infection.

Patient Information

PATIENT FACT SHEET

References

1. Heymann, D.L. Control of Communicable Disease Manual (21st Ed.). Washington, American Public Health Association, 2022.
2. Ontario. Ministry of Health. Infectious Diseases Protocol, Appendix 1: Q Fever. Toronto: Queen's Printer for Ontario; 2022 [effective 2023 August] [cited 2024 Mar 12].

Additional Resources

1. Centers for Disease Control and Prevention. "Q Fever, 2013"
2. Q Fever. Toronto: PHO; 2023 Jul 26. [cited 2024 Feb 27].