Q-Fever Information Sheet
NORAD-USNORTHCOM/SG

SG

What is Q-fever?
Q fever is caused by infection with the rickettsial organism, *Coxiella burnetii*, discovered in 1937, is resistant to heat and desiccation and highly infectious by the aerosol route. A single inhaled organism may produce clinical illness.

Why are we concerned with Q-fever as a bioweapon?
Coxiella burnetii is a highly infectious agent that is rather resistant to heat, drying, and resistant to many common disinfectants. It can become airborne and inhaled by humans. A single *C. burnetii* organism may cause disease in a susceptible person, person-to-person transmission rarely, if ever, occurs. Intentional release by terrorist groups would presumably involve aerosolisation, and Q fever would likely be employed as an incapacitating agent, as its' mortality rate is quite low (1-3%). The cult Aum Shinrikyo obtained the microbe and toyed unsuccessfully with its use.

Does this disease occur naturally?
Yes, it is a naturally occurring disease. Its natural reservoirs are sheep, cattle, goats, dogs, cats and birds. The organism grows to especially high concentrations in placental tissues. The infected animals do not develop the disease, but do shed large numbers of the organisms in placental tissues and body fluids including milk, urine, and feces. Naturally occurring human cases are rare.

Are there different forms of this disease?
No, variations exist.

Is the disease seasonal in its occurrence?
No seasonal occurrences in the literature.

Where is the disease currently established?
Q-fever can be found worldwide.

How does it spread?
For humans, the source of infection is usually occurs by inhalation of these organisms from air that contains airborne barnyard dust contaminated by dried placental material, birth fluids, and excreta of infected herd animals. Humans are often very susceptible to the disease, and very few organisms may be required to cause infection. Q-fever does not spread person to person.

What is the risk of catching Q-fever?
Low, in the United States, Q fever outbreaks have resulted mainly from occupational exposure involving veterinarians, meat processing plant workers, sheep and dairy workers, livestock farmers, and researchers at facilities housing sheep. No gender or age risk has been identified.

What are the symptoms of Q-fever?
Only about one-half of all people infected with *C. burnetii* show signs of clinical illness. Most acute cases of Q fever begin with sudden onset of one or more of the following: high fevers (up to 104-105° F), chills, severe headache, malaise, and muscle aches, confusion, sore throat, chills, sweats, non-productive cough, nausea, vomiting, diarrhea, abdominal pain, and chest pain. Fever usually lasts for 1 to 2 weeks. Weight loss can occur and persist for some time. Thirty to fifty percent of patients with a symptomatic infection will develop pneumonia. In general, most patients will recover to good health within several months without any treatment. Only 1%-2% of people with acute Q fever die of the disease.

How soon do infected people get sick?
Q-fever symptoms begin after an incubation period of 2-14 days, sometimes up to 3 weeks before symptoms will begin.

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How is Q-fever diagnosed?
An attack using aerosolized Q-fever would very difficult to diagnose. It would require more clinical suspicion than actual initial laboratory findings. Suspect Q-fever if a large number of previous health individuals develop fevers, malaise, headache and flu-like symptoms. Definitive diagnosis requires culture of the organism from blood, sputum, CSF, or lymph node aspirates. Animal samples maybe helpful in the diagnosis of the Q-fever.

Is a vaccine available to prevent Q-fever?
No vaccine is currently available for prophylaxis of Q-fever. However, The previously available licensed, killed vaccine was effective against bubonic Q-fever, but not against aerosol exposure.

Can Q-fever be treated? Yes.

Pre – exposure? No vaccine is available to the general public. A vaccine is available for immunization of at-risk personnel on an investigational basis, although a Q fever vaccine is licensed in Australia.
Post exposure/prior to onset of symptoms? Q fever is generally a self-limited illness even without treatment. Supportive therapy and antibiotics (Tetracycline, doxycycline) as indicated for treatment. Duration of therapy is 8 to 12 days following exposure should prevent the onset of symptoms.
Post exposure/after onset of symptoms? Q fever is generally a self-limited illness even without treatment. Supportive therapy and antibiotics (Tetracycline, doxycycline) as indicated for treatment. Duration of therapy is 15 to 21 days following symptoms.

Where will the medications/immunizations to treat infected individuals come from?
Regionally dependent resources based on national stockpiles.

Are there contraindications to vaccine, antibiotic therapy, other treatments (ie. Pregnancy, immunosuppression, etc)
Contraindications as indicated for specific antibiotics.

How long can Q-fever exist in the environment?
The organism is resistant to heat, drying, and many common disinfectants. These features enable the bacteria to survive for long periods in the environment. Infection of humans usually occurs by inhalation of these organisms from air that contains airborne barnyard dust contaminated by dried placental material, birth fluids, and excreta of infected herd animals.

Are there ways to test for Q-fever in the environment?
No field expedient methods are available for testing. Samples must be sent to laboratory for testing.

What should someone do if they suspect they or others have been exposed to Q-fever?
Contact public health officials or contact a medical care provider immediately for further instructions.

What can I do to reduce the risk of getting Q-fever or giving it to someone else?
Person-to-person transmission is rare. Avoid areas that contain airborne barnyard dust contaminated by dried placental material, birth fluids, and excreta of infected herd animals

References:

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