Agent: *Coxiella burneti* (Q Fever)

*Coxiella burneti* is a rickettsial organism that may infect a broad range of animals including sheep, cattle or goats. It causes a disease called Q Fever that is known by other names such as Abattoir fever, Query fever, 9-Mile fever, and Balkan Grippe. The exposure of humans to naturally infected and often asymptomatic sheep or goats and their birth products is a potential biohazard. The organism can be disseminated in the air for distances of up to 0.5 miles. Most commonly farmers, abattoir workers, veterinarians in agriculture, and persons living or active near sheep farms become infected. However, in research Q fever is the second most common occupational infection. Often the infection in humans is asymptomatic, but Q fever can cause a flu-like disease in some persons after about a three week incubation period. In approximately 1% of cases, complications can occur particularly in persons with pre-existing heart valve disease. The agent is remarkably resistant to drying and disinfectants and is extremely stable under most environmental conditions. It may persist for months in wool, urine or dried blood.

**Potential Hazard:** Sheep or goat placentas or milk carry high concentrations of the organism. Blood carries considerably fewer organisms. Humans typically acquire the infection by inhaling infectious aerosols or dusts. The inhalation of as few as 1-10 organisms can cause infection. Exposure in research usually occurs during lambing or fetal-uterine surgery. Newborn and newly-acquired lambs pose a risk because their wool may be contaminated with the organism for an extended period after birth. There are no Q fever free flocks of sheep or goats or herds of cattle in the United States and all livestock should be assumed to be infected.

**Recommended Precautions:** Husbandry personnel caring for sheep or goats must wear a uniform, protective gown, latex or vinyl gloves, a cap and boots (or shoe covers in dry environment). Surgical-type masks and eye protection must be worn when spraying pens or engaging in other activities that may create aerosols. Good hand washing techniques are also critical in prevention.

Sheep housing, necropsy and research areas should have negative airflow in relation to corridors and must be isolated from hospital and patient care areas. Other engineering and programmatic controls (ABSL3) may be needed for pregnant sheep. Sheep pens should be regularly cleaned and sanitized. Halogen-based disinfectants (bleach, chlorine dioxide), 5% hydrogen peroxide and 1% Lysol are most effective at killing the organism. Excrement can be disposed in the sanitary sewer system.

Ruminant birth by-products and soiled protective outerwear should be collected for incineration. Soiled resusable outerwear should be autoclaved before laundering. Needles and other sharps should be discarded directly in an approved sharps container without recapping needles.

**References:**


CDC. Q fever at university research center – California. MMWR 28, 1979.


