THE UNIVERSITY OF QUEENSLAND AUSTRALIA

OH&S Occupational Health & Safety Unit

& The University Health Service

Hazard Alert

Q Fever

Q fever is a hazard for persons working with cattle, sheep, goats and feral animals. Persons working and or living in areas frequented by these animals but not actually working with the animals are at some risk also. Persons dealing with animal products in the research setting can be at risk.

Q fever is a relatively common preventable condition which, while rarely fatal, can cause a severe acute illness with hepatitis and pneumonia, can result in damage to heart valves and can precipitate chronic fatigue and long term disability.

Q fever is primarily an occupational disease of workers from the livestock and meat industry. Over 90% of cases of acute Q fever occur in new entrants to the workforce or those who have been in the workforce 5 years or less. Agricultural and farm workers also are at significant risk as are veterinarians, stock inspectors, agricultural research workers as well as auctioneers. Q fever affects mainly men between 20 and 50. Women entering high-risk occupations should be vaccinated before considering a pregnancy to avoid the significant risk to the foetus in the event of Q fever infection occurring in pregnancy.

Animals Infected

Coxiella burnetii infects both wild and domestic animals and their ticks, sometimes without any apparent signs of infection. Cattle, sheep and goats are the main reservoirs of human infection, although bandicoots, kangaroos, wallabies, birds, rodents, lagomorphs (hares, rabbits, and pikas), cats and dogs also can be infected. Infected animals shed C burnetii in their urine, faeces, milk and in particularly high numbers in birth products.

Modes of Transmission of C Burnetii

C burnetii is a highly infectious bacterium that can survive in harsh environmental conditions. For example it has survived for 7 to 9 months on wool at 15 to 20°C, for more than 1 month on fresh meat in cold storage and for more than 40 months in skim milk at 4 to 6°C.

Inhalation of Aerosols

Large numbers of C burnetii are released in the blood, urine, faeces, milk, birth fluids and placenta of infected animals. Infected aerosols from these products may be released into the environment and consequently infect humans via the respiratory tract. Infected aerosols may be released during the slaughter of infected animals or for example in incorrect handling of the above animal products in the research environment.

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Inhalation of Dust

C burnetii can survive in dust formed from contaminated birth fluids, blood, faeces or urine. Infected dust may settle on the ground, on wool, hides, clothing, straw etc and be disturbed by movement or wind.

Ingestion

Infection may be acquired by drinking unpasteurised and infected milk

- Ticks
- Via the conjunctiva and other mucous membranes
- Human to Human Transmission

Risk Assessment

- Is the worker potentially liable to inhale aerosols of urine, faeces, milk, birth fluids, placenta, blood and possibly semen from animal sources?

- Is the worker likely to have his/her eyes contaminated by splashes or aerosols of the above?
- Is the worker potentially liable to inhale dust that contains dried bodily fluids from animals?
- If yes is this exposure very occasional or on a regular basis?
- If workers are exposed then control measures should be instituted such as:
- Avoiding procedures that produce aerosols or enclosing or isolating processes so workers are not exposed;
- Implementing dust suppression measures such as wet cleaning of animal areas rather than sweeping;
- Examining ventilation and air conditioning systems in animal areas to ensure that contaminated dust is not circulated to other areas served by the system;
- Avoiding contact with contaminated clothing and equipment;
- Practising good hygiene such as ensuring that the hands and face are washed before eating and smoking take place;
- Enforcing policy that prohibits eating, drinking or smoking in these areas;
- Limiting the number of persons working in the at-risk area and ensuring that maintenance personnel and other visitors are protected;
- The use of a P 2 mask if exposure is occasional and of short duration;
- The wearing of eye protection if the production of potentially infectious splashes or aerosols is likely.

Vaccination with Q-Vax for personnel significantly exposed on a continuing basis. Regular vaccination programs are run at the University Health Service.

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