Q fever is an illness caused by infection with the bacterium *Coxiella burnetii*. Q fever is spread to humans from infected animals. The bacteria remain stable in the environment for up to two weeks and can be resistant to heat, drying and many disinfectants. *Coxiella burnetii* can survive for months in birth products, animal faeces, urine, milk or sputum.

Most Q fever infections result from inhalation of infectious aerosol particles from parturient or slaughtered ruminants. Environmental contamination related to these events lasts for months and possibly years, so inhalation of dust is also important. Cattle, sheep, and goats are the main sources of human infections. Acute Q fever can cause a severe influenza-like illness that is sometimes associated with hepatitis (inflammation of the liver) and pneumonia. Up to 60% of people infected with Q fever may not have any symptoms.

Q fever can sometimes lead to a chronic (long-term) illness. Approximately 10% of acutely ill people have fatigue lasting more than 6 months.

Chronic Q fever most commonly results in inflammation of the heart (endocarditis). People who already have heart valve disease or are immunocompromised are at increased risk.

Pregnant women who contract Q fever have increased risk of complications, such as miscarriage, particularly during the 1st trimester of pregnancy.

How can Q fever be transmitted from animals to veterinary staff?

Veterinarians, veterinary nurses, assistants, students and other staff (such as cleaners and receptionists) working in veterinary clinics or on contaminated properties, can become infected by breathing in contaminated aerosols or dust when working with infected animals, animal tissues, or animal products. Environments contaminated with these products can also directly cause infection.

The main carriers of the disease are farm animals (such as cattle, sheep and goats), but other animals such as kangaroos, bandicoots and birds, as well as domestic pets such as dogs and cats can also be infected. Wild pigs are also known to carry the disease.

Infected animals often show no signs. They can shed the bacteria into their urine, faeces or milk. High concentrations of the bacteria are found in the placenta and other birth by-products.

Common activities where veterinary staff are exposed include assisting with birthing and conducting caesarean sections.

Spread of Q fever from person to person has been reported but is extremely rare. Contaminated work clothing may be a source of infection.
How can veterinary staff avoid contracting Q fever?

Q fever vaccination is recommended for all people who are working in, or intend to work in the veterinary field. This includes staff not directly involved in veterinary procedures, such as volunteers, students, cleaning staff and receptionists, because of the potential for breathing in infected aerosols or dust. Veterinary practices should have a vaccination program. Before being vaccinated, staff will need to have blood and skin tests to see if they have already had Q fever.

Q fever vaccine should not be given to:

- people who have had Q fever before
- people who are shown to be immune to the disease in their skin or blood tests
- people who have previously been vaccinated against Q fever
- people with known hypersensitivity to eggs

For more information about Q fever vaccination contact your local public health unit. GPs and some travel vaccination centres can administer the vaccination which is ordered from the manufacturer (CSL Ltd).

Pregnant women, the immunocompromised, and those with known heart valve defects should be excluded from high risk situations, unless they are immune.

Do not eat, drink, or smoke while handling animals or in animal housing areas.

You should receive training in basic infection control procedures including infectious disease prevention, hand and environmental disinfection, correct use of personal protective equipment and safe waste removal.

Wear personal protective equipment (PPE) as described below. Remember that PPE is not a substitute for Q fever vaccination. PPE should include the following:

- Gloves - use when touching blood, body fluids, birth by-products, secretions, excretions, mucous membranes, and non-intact skin. Wearing gloves does not replace hand washing.
- Facial protection - use a surgical mask worn with either goggles or a face shield whenever exposures to splashes or sprays are likely to occur. A surgical mask provides adequate protection during most veterinary procedures that generate potentially infectious aerosols. A P2 mask with a 0.02 - 2 micron filter should be worn by all staff in the vicinity of a caesarean section. Avoid direct mouth to snout resuscitation.
- Protective outerwear - use dedicated protective clothing such as a coat or coveralls and shoe-covers or boots when working with high risk animals, animal tissues or animal products. Wash the soiled clothing separately from personal clothes and preferably at the animal facility.

Additional precautions for birthing and caesarean sections:

- As high concentrations of the Q fever bacteria are found in birth by-products, any staff who have not been vaccinated against Q fever should not participate in birthing or caesarean sections.
- Any unvaccinated staff member in the vicinity (within 1 metre) of a birth or caesarean section should use an appropriately fitted P2 particulate respirator mask that meets the Australian Standard (AS/NZS 1716) in addition to gloves, eye protection and protective outerwear.

Wash hands and arms thoroughly in soapy water for at least 20 seconds after any contact with animals, and after removing gloves worn during such contact.

Wash animal urine, faeces, blood and other body fluids from the work site and equipment, and disinfect equipment and surfaces. To disinfect the environment effectively a solution containing 0.05% hypochlorite (500 ppm available chlorine) or 5 % peroxide, hysol (quat) should be used.

Properly dispose of animal tissues including birth by-products e.g. by incineration. These contaminated products or linen should be placed immediately in a sealed impermeable bag and placed in a bin with a lid located in low traffic areas.

Remove clothing that may carry the bacteria before leaving the work place and known contaminated premises.

Further information

See the Australian Veterinary Association "Guidelines for Veterinary Personal Biosecurity"
See the NSW Health factsheet on Q fever
See the Australian Immunisation Handbook
See the Australian Q Fever Register.

For further information please call your local public health unit on 1300 066 055.