

WHS G004 Q-Fever Risk Mitigation Guideline

Section 1 - Overview

(1) This Guideline aims to provide information about Q-Fever and how to reduce the risk of University Representative and Students who work with animals from becoming infected with *Coxiella burnettii* bacterium, resulting in Q-Fever illness.

Section 2 - Scope

(2) These Guidelines apply to all relevant University Representatives and Students who work in agricultural settings and/or interact with, or work in close proximity to agricultural livestock or other animals. These Guidelines also apply to visitors to UNE owned and/or managed properties.

(3) Workers and Students of UNE considered to be at heightened risk of infection transmission include anyone working directly with live animals.

Section 3 - Guideline

About Q-Fever

(4) Q-Fever is a zoonotic infection transmitted by the bacterial microorganism *Coxiella burnettii*, usually via dust and aerosols from infected animals. It is a relatively common but preventable condition which, while rarely fatal, can cause a severe acute illness with complications such as hepatitis and pneumonia. It can also cause damage to heart valves and precipitate chronic fatigue and long-term disability.

(5) The organism can infect both wild and domestic animals and their ticks. Companion animals such as cats and dogs can also become infected.

(6) Persons working with animals such as cattle, sheep, goats and feral animals have the greatest risk of transmission and those most at risk include workers from the meat and livestock industry and sheep shearers. Persons working 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 also be at risk.

(7) 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. 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 during pregnancy.

(8) *Coxiella burnettii* 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 *Coxiella burnettii* in their urine, faeces, milk and in particularly high numbers in birth products.

Modes of Transmission

(9) *Coxiella 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. It is transmitted to humans via inhalation, ingestion, inoculation or via direct contact with infected aerosols or dust.

Inhalation (air borne)

(10) The predominant mode of infection of humans is via the respiratory tract after inhalation of airborne dust or droplets containing the coxiella. Large numbers of *Coxiella 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 are released during the slaughter of infected animals or for example during incorrect handling of the above animal products in the research environment.

(11) *Coxiella burnetii* can survive in dust formed from contaminated birth fluids, blood, faeces or urine. When infected fluids dry out, the bacterium can survive in the dust for many years. Infected dust may settle on the ground, on wool, hides, clothing, straw etc and be disturbed by movement or wind. Contaminated dust can be carried outside the working environment on work clothing, hair, straw, and other fomites or on working dogs.

Ingestion

(12) Consumption of unpasteurised infected milk or milk products such as unripened cheese can lead to infection but is considered to have a lower risk of transmission compared to airborne exposure.

Inoculation

(13) Infection can occur through subcutaneous inoculation such as being bitten by infected ticks or via a needle stick injury when working with laboratory animals. Human to human transmission is rare but has been known to occur via blood transfusion from blood collected in the late incubation period of primary infection.

Direct Contact

(14) Infection can occur through direct contact with infected material or dust via the conjunctiva and other mucous membranes.

Symptoms of Q-Fever

(15) Symptoms range greatly, with some infected people experiencing no symptoms whilst some feel mildly unwell for a few days. Most people however experience severe flu-like symptoms with fever, sweating, nausea, vomiting and diarrhoea for up to 10 days. Some people may experience post Q-Fever Fatigue Syndrome resulting in a prolonged form of the illness with symptoms of tiredness, muscle weakness, headaches and depression continuing for years after the initial infection. Some people with heart problems can experience a severe illness due to complications caused by the heart valves becoming infected.

Risk Assessment

(16) A risk assessment should be undertaken in workplaces where agricultural or feral animals are handled or are housed in close proximity to work areas to establish:

- a. Which individuals, or groups of individuals, should have access to the UNE pre-screening and vaccination program for Q-Fever; and
- b. Any other appropriate controls for University Representatives and Students, and visitors to UNE owned and/or

managed properties.

(17) The following factors should be considered as part of a risk assessment::

- a. Is it likely a Worker or Student may inhale aerosols during work practices, or by those harboured in the environment (e.g. dirt or dust); of urine, faeces, milk, birth fluids, placenta, blood and possibly semen from animal sources?
- b. Is it likely a Worker or Student may get eye contamination by splashes or aerosols of the substances described above?
- c. Do Workers or Students work directly with live animals?

Risk Mitigation Options

(18) The most appropriate risk mitigation options are subject to consultative risk assessment and may include:

- a. Pre-vaccination testing/screening Workers for susceptibility to Q-Fever.
- b. Vaccination with Q-Vax for susceptible Workers and Students significantly exposed on a continuing basis.
- c. Avoiding procedures that produce aerosols.
- d. Enclosing or isolating processes so Workers and Students are less likely to be exposed.
- e. Implementing dust suppression measures such as wet cleaning of animal areas rather than sweeping.
- f. Maintaining separate ventilation and air conditioning systems in animal areas to ensure that contaminated dust and aerosols are not circulated to other areas served by the system.
- g. Removing protective and/or contaminated clothing before returning to the home environment.
- h. Avoiding contact with contaminated clothing and equipment.
- i. Practising good hygiene such as ensuring that hands and face are washed before eating, drinking and any other activity.
- j. Wearing disposable latex or vinyl gloves, disposable gowns and eye protection when performing clinical procedures on animals or handling animal blood, body fluids or birthing products, and either conducting these procedures in a biosafety cabinet or wearing a P2 mask).
- k. Enforcing prohibition of eating, drinking or smoking in areas where there is a risk of exposure.
- l. Limiting the number of persons working in the at-risk area and ensuring that maintenance personnel and other visitors are protected with appropriate PPE.
- m. The use of a P2 mask if exposure is occasional and of short duration (e.g. where vaccination would not be feasible).
- n. Visitors who are not immune or not aware of their susceptibility status to Q-Fever and are entering areas considered to harbour a risk for Q-Fever transmission should wear a P2 mask (supplied by the relevant UNE School or Business Unit) during the period they are present in that workplace.

Access to Pre-Screening and Vaccination

(19) Completion and periodic review of risk assessment to mitigate the risk of Q-Fever may identify persons that would benefit from pre-screening and vaccination.

(20) Consideration should be given but not limited to University Representatives from:

- a. School of Environmental and Rural Science (ERS);
- b. School of Science and Technology (S&T);
- c. Estate and Built Environment;
- d. Contractors such as cleaners; and

e. WHS personnel and Health and Safety Representatives.

(21) UNE is able to offer these services according to this Guideline to relevant persons.

(22) Pre-screening and vaccination for Identified Persons is offered by UNE via the UNE Life Healthcare Centre.

(23) 'Identified Persons' (or groups) are those that are specified in a risk assessment process. Individual names of those eligible to access the UNE program for Q-Fever pre-screening and vaccination will be forwarded by the relevant School or Business Unit, to the UNE Life Healthcare Centre Practice Manager.

(24) Identified Persons will be informed by the relevant UNE School that they are eligible to access the Q-Fever Pre-Screening and Vaccination Program. It is strongly recommended that those eligible to access the UNE Q-Fever Pre-Screening and Vaccination program do so.

(25) Relevant UNE Schools are to liaise with the UNE Life Healthcare Centre to identify suitable periods where Q-Fever clinics are open to Identified Persons. The UNE Life Healthcare Centre typically requires one month to plan a Q-Fever Clinic and require participants to confirm their booking at least one week prior to the scheduled pre-screening date.

(26) Q-Fever clinic date and times are to be promoted by the relevant School via appropriate channels that access both University Representatives and Students.

(27) It is the responsibility of University Representatives and Students to make and attend appointments for Q-Fever pre-screening and vaccination.

(28) Failure to attend a confirmed appointment for pre-screening and/or vaccination may result in the fee being charged to the individual at the discretion of the UNE Life Healthcare Centre and relevant UNE Head of School.

(29) For University Representatives and Students who have not been included as an Identified Person in the risk assessment process and do not have access to the funded Q-Fever Pre-Screening and Vaccination Program, they are able to request access in writing to the relevant Head of School or Business Unit Director. These individuals may also participate in the program as a fee paying patient if they choose.

Pre Screening Process

(30) Screening prior to vaccination is undertaken to exclude persons who are already sensitised to Q-Fever antigens and who may therefore experience a severe hypersensitivity reaction if vaccinated.

(31) Pre-vaccination screening incorporates taking a detailed history to exclude the likelihood of the person previously having had Q-Fever infection or being previously vaccinated with the Q-Fever vaccine.

(32) Further screening tests may be undertaken such as a skin-prick test during the initial consultation and a blood test at a pathology centre to detect immunological evidence of previous Q-Fever exposure.

Vaccination Process

(33) A follow up Q-Fever Clinic appointment must be scheduled for the full program to be complete.

(34) Results of the pre-screening test will be assessed and if deemed necessary, the Q-Fever vaccine will be administered during the consultation.

Q-Fever Register

(35) The Australian Q-Fever Register is a database that stores information about the immune status of people who have undertaken Q-Fever screening and who consent to being listed on the register. It allows those who may have

forgotten or lost their Q-Fever screening or immunisation details to quickly recover this information. Those listed on the register can be safely employed in a new job where there is a risk of contracting Q-Fever without having to re-test. Being on the register can also help avoid the risk of adverse reactions occurring when a person who is already immune to Q-Fever is inadvertently re-vaccinated.

(36) Information on the Q-Fever register can only be entered with the consent of the immunised person.

Authority and Compliance

(37) The Procedure Administrator, the Director People and Culture, pursuant to the University's [Work Health and Safety \(WHS\) Rule](#), makes these Guidelines.

(38) University Representatives and Students must observe these Guidelines in relation to University matters.

(39) These Guidelines operate as and from the Effective Date.

(40) Previous Guidelines relating to Q-Fever Risk Mitigation are replaced and have no further operation from the Effective Date of this new Guideline.

Section 4 - Definitions

For the purposes of this document the following definitions apply.

(41) Antigens are substances that can stimulate the immune system to produce antibodies.

(42) Bacterium means a single cell micro-organism, some of which can cause disease.

(43) A Worker, as defined by the [WHS Act](#), is a person that carries out work in any capacity for a person conducting a business or undertaking, including work as:

- a. an employee, or
- b. a contractor or subcontractor, or
- c. an employee of a contractor or subcontractor, or
- d. an employee of a labour hire company who has been assigned to work in the person's business or undertaking, or
- e. an outworker, or
- f. an apprentice or trainee, or
- g. a student gaining work experience, or
- h. a volunteer, or
- i. Person of a prescribed class.

(44) Zoonotic, pertaining to zoonosis, a disease that normally exists in animals but can be transmitted from animals to humans.

Status and Details

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Unit Head	Anthea White Director People and Culture
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Glossary Terms and Definitions

"Student" - Is an admitted student or an enrolled student, at the relevant time: 1. an admitted student is a student who has been admitted to a UNE course of study and who is entitled to enrol in a unit of study or who has completed all of the units in the UNE course of study; 2. an enrolled student is a student who is enrolled in a unit of study at UNE.

"School" - Is an organisational unit comprising academic staff in related fields of study who are responsible for teaching and research in those academic fields together with support staff.

"Effective Date" - means the Rule/Policy takes effect on the day on which it is published, or such later day as may be specified in the policy document.

"University Representative" - means a University staff member, contractor, agent, affiliate, residential staff member, UNE Council member, Council committee member, employee of a controlled entity, director of a controlled entity and any other person engaged by the University to undertake some activity for or on behalf of the University. It includes corporations, affiliated organisations and other bodies falling into one or more of these categories.