1. **OBJECTIVE**
To ensure that all persons who engage with the School of Animal and Veterinary Sciences (SAVS) are made aware of the hazards and vaccination options associated with known zoonotic diseases.

2. **SCOPE**
This process instruction is applicable to all SAVS Staff and Students who may work with animals.

3. **REFERENCES**

4. **GENERAL REQUIREMENTS**
The School provides the following information relevant to known zoonotic vaccinatable diseases that are transmitted by contact with animals and animal products.

There are Inherent Requirements within the Bachelor of Science (Veterinary Bioscience) and the Doctor of Veterinary Medicine Programs that students are vaccinated against Q Fever and understand information on Vaccinations and Zoonotic Diseases [http://www.sciences.adelaide.edu.au/current-students/forms/inherent-requirements-bscvetbio-dvm-dec2013.pdf](http://www.sciences.adelaide.edu.au/current-students/forms/inherent-requirements-bscvetbio-dvm-dec2013.pdf)

5. **VACCINATION AND ZOONOTIC DISEASE INFORMATION**

**Vaccination Information**
As part of their ongoing life health program all staff and students will probably have been vaccinated against:

- Tetanus
- Diphtheria
- Polio
- Measles
- Mumps
- Rubella

Note that there are special issues for pregnant students in terms of exposure to pathogens and vaccines. Students who are pregnant should seek advice from School staff and their medical practitioner regarding issues relevant to their own situation.

**Bachelor of Science (Veterinary Bioscience) and Doctor of Veterinary Medicine** students must be vaccinated against Q Fever (unless initial skin test indicates pre-existing immunity).

**Bachelor of Science (Animal Science)** students are strongly advised to be vaccinated against Q Fever (unless initial skin test indicates pre-existing immunity).

Honours, Masters and PhD students working in, visiting, or servicing areas housing the animals identified above (such as stockyards, abattoirs, shearing sheds) or areas where animal tissues, carcasses or waste products are handled or processed are strongly advised to be vaccinated (unless initial skin test indicates pre-existing immunity).
Q-fever

- Q Fever is an infectious disease caused by the microorganism *Coxiella burnetii* that can be spread to humans. 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. The bacteria are spread in the urine, faeces and milk, but birth fluids, the foetus, and the placenta are the most dangerous sources. When infected fluids dry out the bacteria can remain alive in the dust for years.

- The organism is highly infectious, very resistant to environmental extremes and is classified as a Risk Group 3 organism requiring highly specialised containment facilities and is a notifiable disease in Australia.

- A vaccine for Q Fever, Q Vax (CSL), is licensed in Australia for prevention of Q fever infection and consists of a purified, killed suspension of *C. burnetii*. Vaccination of humans is highly effective and produces long-lasting (probably lifelong) immunity. Initial skin and blood tests are done prior to vaccination with Q Fever to ensure there has been no previous exposure (and therefore no natural antibodies). For further information on where to obtain Q Fever Vaccinations visit: http://www.qfever.org/querylist.php (select ‘Find a vaccinator’)

- People become infected by being splashed with infected fluids or by breathing in infected dust.

- When infected some people experience no signs, whilst others just feel a little “off colour” for a few days. Most people, feel like they have a bad case of the “flu”, with fever, sweating, nausea, vomiting and diarrhoea for 7-10 days. For most people these signs pass and there are no more problems. If you already have heart problems, you may get infection of the heart valves and severe illness as a result.

- It is rare for anyone to die of Q fever, although some people may get problems months or years after the first signs of disease have passed. These take the form of extreme tiredness and weakness, even after minor exercise, muscle pains, headaches, fever and depression. This form of the disease, Post Q fever fatigue syndrome, often lasts for years and may make work and other aspects of normal life impossible.

- Preventing this disease is the main aim of Q fever vaccination.

- Immunity may be present, if you:
  - Have previously had vaccination against Q fever
  - Have had a test to confirm immunity.
  - Have had the disease (diagnosed by a doctor) and confirmed by a blood test.

- Q-fever vaccination is a two-step process. At the first visit to the doctor, you will have a skin and blood test. At the second visit, the doctor will check the skin and blood test results and if both are negative proceed to vaccinate you. Vaccination must be preceded by a negative blood and skin test performed by a specifically trained doctor to avoid side effects.

- If you have concerns then you should consult a medical practitioner regarding side effects and contraindications for the vaccine.

Tetanus

- Is a medical condition characterized by a prolonged contraction of skeletal muscle fibers. The primary symptoms are produced by the spore forming bacterium *Clostridium tetani*. Tetanus occurs worldwide and occurs almost exclusively in persons who are unvaccinated or inadequately immunized.

- Infection generally occurs through wound contamination and often involves a cut or deep puncture wound. As the infection progresses, muscle spasms develop in the jaw (thus the name “lockjaw”) and elsewhere in the body. Infection can be prevented by proper immunization.

- All adults in the community, including all staff and students, are advised to maintain their immunity to tetanus. For veterinary and animal workers a routine booster dose every 10 years is prudent. Medical advice should be sought after suffering a tetanus-prone or dirty wound. After a tetanus-prone wound another tetanus immunisation may be needed if it is more than 5 years since last vaccination.
Other Zoonotic Diseases
Australian Bat Lyssa virus (ABLV)

- Australian bat lyssa virus is very closely related to classical rabies virus, both members of the family Rhabdoviridae, genus Lyssavirus. Three cases of a fatal rabies-like illness caused by ABLV have been reported in Australia, one in 1996, one in 1998 and the other in 2013. All had been bitten or scratched by bats. Evidence of ABLV infection has since been identified in all 4 species of Australian fruit bats (flying foxes) and in several species of Australian insectivorous bats. It should therefore be assumed that all Australian bats have the potential to be infected with ABLV. The vaccine for classical rabies also protects against ABLV, as does the post-exposure treatment. For more information refer to http://www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-abvl-rabies.htm.

Hendra virus

- Hendravirus is a member of the genus Henipavirus that contains two members, Hendravirus and Nipahvirus. The henipaviruses are naturally harboured by Pteropid fruit bats (flying foxes) and are characterised by their recent emergence as zoonotic pathogens capable of causing illness and death in domestic animals and humans.

- More than 40 outbreaks of Hendravirus have occurred since 1994 (https://www.daf.qld.gov.au/animal-industries/animal-health-and-diseases/a-z-list/hendra-virus/general-information/what-is-hendra-virus), all involving infection of horses. Four of these outbreaks have spread to humans as a result of direct contact with infected horses. Four fatalities have resulted and the timing of incidents indicates a seasonal pattern of outbreaks possibly related to the seasonality of fruit bat birth. As there is no evidence of transmission to humans directly from bats, it is thought that human infection only occurs via an intermediate host.

- On the evidence available, the most likely mode of transmission is via substantial direct exposure of mucous membranes (or non-intact skin) to respiratory secretions (including large droplets) from an infected horse. Indirect exposure to respiratory secretions or blood, and direct or indirect exposure to other body fluids, may contribute to overall transmission risk. Current evidence does not support airborne exposure as a significant mode of transmission. No cases have been documented in people using appropriate personal protective equipment. (Ref 3)