

**THE UNIVERSITY OF MELBOURNE
ANIMAL WELFARE COMMITTEE**

**GUIDELINES ON ZOO NOTIC DISEASES
FOR STAFF WHO WORK WITH ANIMALS**

General

A zoonotic disease is any disease transmissible between animals and humans. People at risk of contracting a zoonotic disease are those who work with animals (laboratory research workers, veterinarians, farmers, abattoir workers, wool classers, zoo workers, pet shop owners), or those who own animals as pets at home. Tourists travelling through foreign countries may also be at risk on occasion.

University staff members who work with animals should be made aware of possible zoonotic diseases. Note that while allergies (from animal dander or urine) are not zoonotic diseases, they are sufficiently common among animal technicians and investigators for staff to be reminded that should a rash, weeping eyes, or respiratory wheeze develop, they should seek medical advice as soon as possible. People with a history of symptoms associated with a particular species should in any case, try to avoid working with animals as a career as this will only exacerbate their condition.

Common zoonotic diseases transmissible from almost any species are ringworm, scabies (mites) and bacillary diarrhoea, eg salmonellosis or shigellosis. A more serious problem which could arise from an infected bite wound is a bacterial septicaemia, eg pasteurellosis. Hydatid disease caused by the intermediate stage of the dog tapeworm *Echinococcus granulosus* and visceral larval migrans in children, in which permanent brain or eye damage can be caused by the intermediate larval stages of the common dog or cat round worm (*Toxocara canis* or *Toxocara cati*) are particularly important zoonotic diseases. The protozoan organism, *Toxoplasma gondii*, is a pathogen commonly shed by cats which can cause abortion in pregnant women or mental retardation in the newborn baby.

Three important zoonotic diseases which have recently emerged in Australia are Hendra virus, Lyssa virus and Menangle virus from bats. Others reported overseas as transmissible from laboratory rodents, although uncommon, are lymphocytic choriomeningitis (LCM) and Hanta virus. Other potentially fatal diseases (which are not present in Australia) are rabies, a viral disease usually transmitted by dog bite, Nipah virus, transmissible from pigs by aerosol, and Bovine Spongiform Encephalopathy (BSE) from beef. Other examples of some zoonotic diseases associated with farm animals are *Chlamydia sp*, Q fever, tuberculosis, brucellosis,

leptospirosis, and anthrax. An example of a zoonotic disease caught from birds, in particular the parrot family, is the respiratory disease chlamydiosis.

For those who work with macaques (old world primates) in any country, there is the risk of tuberculosis. In addition, the risk of herpes B virus and Ebola virus have been reported as a concern for workers overseas.

Instructions to Departments about their Responsibilities to Staff who Work with Animals

It is important to remember that the risk of acquiring any disease, zoonotic or otherwise, will always depend on the following:

- the incidence of the disease in the community
- precautionary measures taken to prevent infection, ie inoculations (note that immunisation against the non-zoonotic disease tetanus should, in any case, be renewed every 10 years with a booster shot)
- the level of hygiene practised
- the speed with which action is taken in response to a problem
- the availability of effective drugs and treatment.

To ensure appropriate treatment, it is most important that a good history be given to the clinician, including details of any animal species involved. When an individual who works with animals or has been in contact with animals recently presents to the clinician with general flu-like symptoms, the animal association should always be communicated, even though there may be no particular recollection of an incident involving an animal.

To ensure that staff members fully understand their responsibilities with respect to Environmental Health and Safety, departments should ensure that staff are:

- properly informed about the importance of hygiene, wearing appropriate protective clothing, relevant inoculations and the safe handling of animals, materials and equipment. Information in the form of written instructions about the correct way to handle infectious, hazardous, radioactive, carcinogenic, anaesthetic drugs or other substances should, in any case, be provided, together with an opportunity to carry out a dummy run before work commences. This is particularly important for the safe operation of equipment, eg autoclaves, fume hoods, anaesthetic machines, and recording devices
- that all staff at the commencement of employment are immunised against tetanus and that they receive a booster every 10 years

- that staff understand the implicit risks of working with animals, particularly in terms of allergy, asthma and zoonotic disease, and that they know what to do in the event of a problem with respect to:
 - **Testing for allergy (blood and skin).** This may be organised through the University of Melbourne Health Service.
 - **Asthma.** A baseline lung function study will be performed at the commencement of employment for all staff who work with animals and any others in whom it is indicated by reason of their health or employment. This will be followed by an annual check up where indicated.
 - **Zoonoses.** Note that those who work with non human primates will need to have their Mantoux status tested at the commencement of employment, and then again annually. In addition, a 1 mL baseline serum sample (from a 2 mL blood sample) for freezing and storage must be taken from anyone bitten by a non-human primate. This should be collected as soon as possible, but in any case no later than 24 hours after the incident. A second serum sample may be needed several weeks later. Information about the risk of Herpes B from macaques should be provided. (refer to UMAWC Policy: *Emergency Advice on Herpes B Virus Infection and Diagnosis*)
 - **Working with human blood products.** In this instance, immunisation against Hepatitis B is strongly recommended. This can be obtained through The University of Melbourne Health Service. In some instances Hepatitis A vaccination may be indicated.

Further Reading:

Stevenson, W.J. & Hughes, K.L. (1988) Synopsis of Zoonoses in Australia, 2nd edition, Canberra: Australian Government Publishing Service.