

Zoonoses – animal diseases that may affect humans

July 2017, Primefact 814, second edition
Animal Biosecurity and Welfare, NSW DPI

What are zoonoses?

Zoonoses are diseases of animal origin that can affect people. The diseases may be caused by bacteria, parasites, protozoa, fungi and viruses.

Zoonotic diseases can spread to humans by:

- close contact with infected animals including livestock, pets, exhibited animals or wildlife.
- contact with the saliva, blood, urine or faeces of an infected animal
- water or soil that has been contaminated by infected animals.
- being bitten by an infected tick or mosquito (called a “vector”)
- eating or drinking unpasteurised dairy products, undercooked meat or unwashed fruit and vegetables that are contaminated with faeces from an infected animal

Even if there is an infectious agent present, it does not always result in disease. Zoonoses depend on three factors; the infectious agent, a susceptible host and a way of spread.

Approximately 60-70% of emerging human infectious diseases are zoonoses^{1,2,3} and originate in domestic or wild animals. Due to increased human populations and intense urbanisation, new zoonotic diseases are likely to emerge in the future.

¹ Taylor LH, Latham SM, Woolhouse ME. Risk factors for human disease emergence. *Philos Trans R Soc Lond B Biol Sci*2001;356(1411):983–989.

² Jones KE, Patel NG, Levy MA. Global trends in emerging infectious diseases. *Nature* 2008(451):990–994.

³ Woolhouse MEJ, Gowtage-Sequeria S. Host range and emerging and re-emerging pathogens. *Emerg Infect Dis*2005;11(12):1842–1847.

People most at risk of being affected by a zoonotic disease are those in close contact with animals or animal products. This includes:

- veterinarians
- farmers
- abattoir workers
- shearers
- people assisting with animal births
- pet owners
- pig hunters

Also at higher risk are children, elderly people, pregnant women and people with impaired immunity.

Zoonotic diseases

Examples of zoonotic diseases include:

Bacterial diseases - Anthrax, Brucellosis, Leptospirosis, Q fever, Salmonella, Psittacosis.

Viral -Australian Bat Lyssavirus (ABLV), Hendra virus, exotic diseases such as Ebolavirus and Rabies)

Protozoa- Toxoplasmosis, Giardia, Cryptosporidiosis

Fungi- Ringworm

Parasitic- Hydatids, Visceral larval migrans

For a list of zoonotic diseases in Australia, see [Appendix 2 of the Australian Veterinary Association- Guidelines for Veterinary Personal Biosecurity \(February 2013\)](#)

http://www.ava.com.au/sites/default/files/AVA_website/pdfs/Biosecurity%20Guidelines%202013%20FINAL.pdf

Prevention is best

It is not possible to eliminate all the risks associated with zoonotic diseases. However there are a number of things you can do to prevent the likelihood.

- Always wash hands and follow proper personal health and hygiene
- Reduce exposure to zoonoses
- Manage animal health

Zoonoses can be contracted from both sick and healthy animals.

Personal health and hygiene

- Wash hands with soap for 10-20 seconds under running water after handling animals and before preparing or eating food/drink or smoking cigarettes.
- Use hand sanitisers, such as alcohol-based hand rubs, where there is no water.
- Vaccines are available for some zoonoses, for example tetanus, Q-fever and ABLV.
- Regularly shower or bathe, and clean clothing and footwear, especially if you are in frequent contact with animals.
- Maintain a healthy immune system through a healthy lifestyle, and seek medical assistance as appropriate.
- Promptly treat cuts or abrasions.
- Seek medical attention if a zoonosis is suspected, or there has been significant exposure to one.

Reduce exposure

- Use personal protective equipment (PPE) as appropriate. This includes overalls, gloves, eye protection and masks. The use of PPE is particularly important where contact with animal tissues, faeces or urine is likely or the consequences of infection are high e.g. Hendra virus.
- Wear PPE and take care when assisting or being near animals when they are birthing or sick.
- Clean and disinfect work spaces and equipment. This includes PPE, instruments, harnesses and rugs.
- Avoid bites from mosquitoes and ticks.
- Avoid close contact with animals, including facial contact.

- Children and pregnant women should avoid uncovered sandpits or other areas where animals may defecate.
- Dog owners should appropriately dispose of their animals' faeces, especially from public places.
- Take particular care when in contact with sick animals, although healthy as well as sick animals can transmit disease.
- Avoid foodborne diseases through correct processing and hygienic food preparation.
- Do not prepare food for yourself or others if you are ill.
- Keep animals out of the kitchen.

Manage animal health

- Prevent and control animal diseases and maintain animals in good health. Regularly worm and vaccinate livestock and pets as appropriate.
- Control stray animals- avoid handling strays or animals that appear ill.
- Control pest animals such as rats or feral pigs that may spread disease. Control programs will reduce the likelihood of transmission.
- Practise good hygiene with livestock feeds, and prevent access from rodents and cats (to reduce the spread of toxoplasmosis from cats, for example).
- Isolate and treat sick animals to reduce the risk of spreading disease to other animals and humans.
- Dispose of carcasses appropriately to prevent spread or recurrence of disease.

What to do if you suspect a zoonotic disease?

A number of animal pests, diseases and events are notifiable under the *Biosecurity Act 2015*.

This means there is a duty, or legal obligation to notify authorities if you know or suspect that an animal has one of these pests or diseases or have any suspicion or awareness of a biosecurity event. For further information see Primefact Notifiable animal pests, diseases and events in NSW.

Seek veterinary advice if you suspect your pet or livestock may have a disease. Further information on zoonoses can be found at the [NSW DPI website](http://www.dpi.nsw.gov.au/biosecurity/animal/humans/zoonoses)
<http://www.dpi.nsw.gov.au/biosecurity/animal/humans/zoonoses>

For human advice, ring 1300 066 055 to find your closest public health unit. Fact sheets on zoonoses in humans can be found on the [zoonoses page](http://www.health.nsw.gov.au/Infectious/Pages/zoonoses.aspx) at <http://www.health.nsw.gov.au/Infectious/Pages/zoonoses.aspx>

Acknowledgments

The author would like to acknowledge the previous work done on this Primefact by Stephen Love, Veterinarian/Research Officer (Parasitology), NSW DPI.

Edited by representatives from Health Protection NSW.

For updates go to www.dpi.nsw.gov.au/factsheets

© State of New South Wales through the Department of Industry, Skills and Regional Development, 2015. You may copy, distribute and otherwise freely deal with this publication for any purpose, provided that you attribute the NSW Department of Primary Industries as the owner.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (June 2017). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary Industries or the user's independent advisor.

ISSN 1832 6668

INT16/155645