

ZOONOSES FACT SHEET

What is a zoonosis?

A zoonosis is an infection that can be shared by humans and vertebrate animals. In practice, however, the term generally refers to those infections which can be physically transmitted from animals to humans. Examples of infectious agents include bacteria, viruses, parasites and fungi.



Who is at risk of contracting a zoonosis?

Any person who handles animals is potentially at risk of contracting a zoonotic disease.

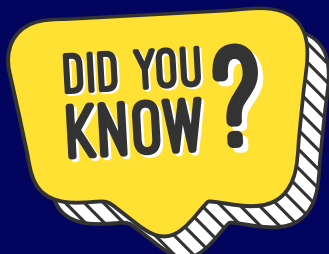
Those who work with animals are at a greater risk than the general population simply by virtue of the fact that they are contacting animals more frequently and they are contacting many different animals as a part of their job role.

In the companion animal industry this includes those employed in facilities such as pet retail outlets, boarding kennels and catteries, grooming salons and animal shelters.

Whilst it is important for all animal care workers to have an understanding of zoonoses, it is important to keep these risks in perspective.

With Australia being an industrialised country, the incidence of serious infection is low due to our high levels of hygiene and sanitation. The very young, elderly and those who are immunosuppressed are at a greater risk of infection than the general population.

Above: Tapeworm



Tapeworms are long, flat parasitic worms that can live inside an animal's or human's intestines for years, with some growing over 15 feet long and one species documented to be over 100 feet long!

HOW WOULD I PICK UP AN INFECTION?

Disease transmission occurs in a number of different ways and it will depend on the specific infection as to how the most likely method of transmission will occur. In general, most diseases are transmitted via direct contact with an animal with subsequent transfer of microscopic infectious agents via eyes, mouth etc. See the information on specific zoonotic diseases for more detailed information on transmission.

WHAT CAN I DO TO AVOID INFECTION?

In order to avoid infection it is vital that animal care workers understand basic disease transmission and the potential risk of zoonosis. All animals, despite their history should be considered a potential source of infection as many zoonotic diseases can be carried by asymptomatic animals.

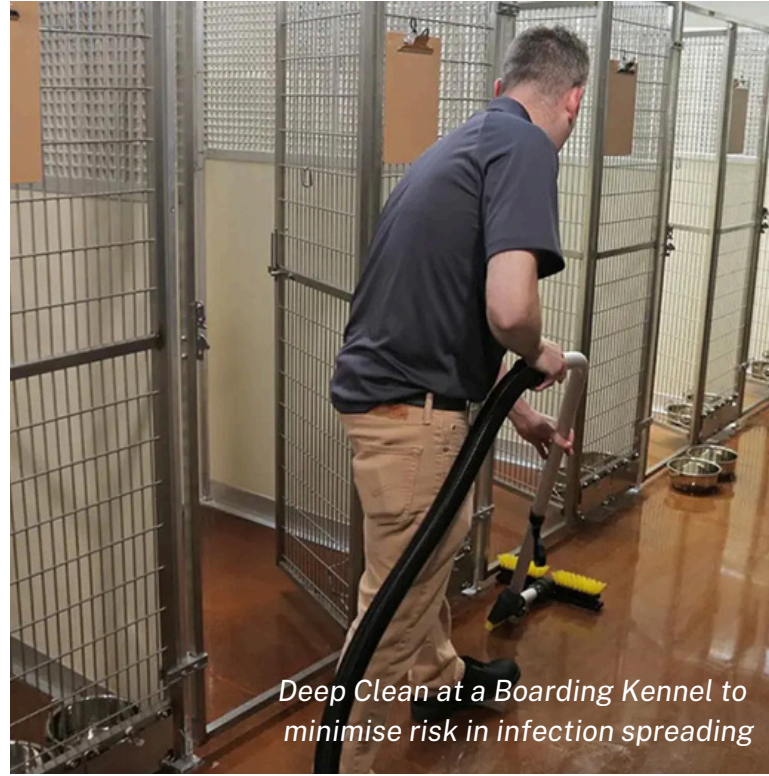
For this reason, the following precautions should be adopted as a matter of routine when handling companion animals.

Animal care facilities must ensure that hygiene standards are high and disinfectants with known spectrums of activity are utilised by all staff.

Disinfectants should be chosen with regard to species being cared for and the potential pathogens associated with these species.

All animal care workers should be made aware of the importance of appropriate facility and equipment disinfection and provided with written instruction regarding the dilution rates and contact times of disinfectants. Instruction should also be provided on correct handling and disposal of biological and potentially hazardous waste. The use of Personal Protective Equipment is vital when handling animals to ensure the safety of all involved. The most important items are disposable gloves, masks and protective eyewear. Shoe covers, rubber boots and aprons can also be appropriate depending on the situation. As well as wearing correct extra protective equipment, all those working with animals should be suitably attired with sturdy clothing and non slip, closed in footwear.

Knowledge and understanding of safe animal handling techniques is also important in reducing risks of infection secondary to bites and scratches or other injuries, Finally, the consistent practice of excellent personal hygiene when working with and around animals is of paramount importance. Hands must be washed with appropriate antiseptic often whilst in the animal care facility and especially after handling animals. Hands should always be washed again prior to eating or drinking. Animal care workers should also try to avoid touching their eyes or face whilst working with animals.



Deep Clean at a Boarding Kennel to minimise risk in infection spreading

A photograph of a stethoscope lying on a wooden surface. Below the stethoscope, the word "ZOONOSIS" is spelled out using large, colorful, 3D block letters. The letters are in various colors: Z (pink), O (yellow), O (blue), N (yellow), O (orange), S (yellow), I (green), S (orange).

ZOONOSIS

IMPORTANT ZONOSES FOR PET INDUSTRY WORKERS



Dermatophytosis also known as Ringworm

Fungal infection

- Caused by a group of fungi called Dermatophytes.
- The most common pathogen of companion animals is *Microsporium canis*.
- Produces infectious spores which are able to survive in the animals environment.
- Species affected are mainly cats and dogs.

Transmission:

- Direct contact with infected animals or carrier animals.
- Indirect contact with spores shed with fur and skin cells into the environment (especially bedding and sleeping areas).

Signs in Animals:

- Affected animals often present with rounded, hairless lesions that are generally not inflamed but have a dry, flaky appearance.
- Especially cats, can act as 'carriers' for this organism. This means that they may carry and shed infective spores whilst not showing any indications of infection.

Signs in Humans:

- Rounded red or discoloured skin lesions, often on the arms or neck.
- Lesions often have a scaly centre.
- It is also possible to see scaly, bald lesions on the scalp.



Parasitic Larval Migrans

Parasitic infection

- Some larval stages of common dog and cat parasites can infect humans, leading to diseases known as larval migrans.
- Roundworms (*Toxocara spp.*) can migrate through internal organs, causing Visceral Larval Migrans.
- Hookworms (*Ancylostoma and Uncinaria spp.*) can penetrate the skin, resulting in Cutaneous Larval Migrans.

Transmission:

- These conditions occur when parasite larvae in the environment penetrate human skin, usually through contact with contaminated soil or grass.
- The larvae survive best in these areas and, once inside the wrong host, migrate randomly through tissues, leading to disease.

Signs in Humans

Cutaneous Larval Migrans:

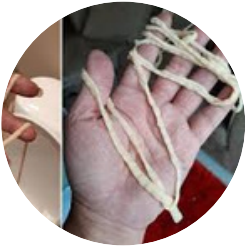
- Initially, severe itching at the point of entry (*usually extremities*)
- Followed by development of a narrow, raised red track in the skin with clear vesicles forming along the line.

Signs in Humans

Visceral Larval Migrans:

- Larvae most commonly lodge in liver, muscle lungs or the retinas.
- General signs are pains, anorexia and fevers.
- Other signs depend on where the larvae are lodged and include liver disease, coughing, muscle pains and eye disease.
- These larvae can cause blindness.

IMPORTANT ZONOSES FOR PET INDUSTRY WORKERS



Hydatid Disease *Fungal infection*

- An infection caused by animal parasites.
- The tapeworm *Echinococcus granulosus* causes this condition in humans.
- Primary host is the dog.

Transmission:

- Sheds eggs in the faeces of infected dogs.
- Able to survive in a moist, cool environment for up to 6 months.
- Humans are infected by ingestion of the eggs after environmental contact.

Signs in Humans:

- Humans are an intermediate host for this parasite which means that the eggs will hatch.
- Life stage of the parasite escapes the intestine and can move into other tissues where they form cysts.
- Signs vary depending on the location of the cysts.
- Liver cysts can produce gastro-intestinal upsets while cysts in the muscle may cause muscle weakness and fatigue.



Salmonellosis

Bacterial infection

- *Salmonella sp* are bacterial organisms that occur naturally in the gut of some companion animals.
- Animals involved are birds and reptiles.
- Animal carers should be aware that animals displaying signs of gastrointestinal illness or dead animals are also a source of infection.

Transmission:

- Occurs via indirect contact (the faecal-oral route).
- Direct contact with dead or sick animals can also transmit infection.

Signs in Humans

- Generally cause gastrointestinal signs such as vomiting, diarrhoea and abdominal pain.

Below: Photomicrograph of Salmonella sp.



IMPORTANT ZONNOSES FOR PET INDUSTRY WORKERS



Toxoplasma gondii* also known as *Toxoplasmosis

Parasitic infection

- Caused by infection with the protozoal organism *Toxoplasma gondii*.
- Causes systemic disease and can localise in any organ or an unborn foetus.
- Primary host for this organism is the domestic cat.
- Microscopic eggs are shed in the faeces of affected cats which can then infect intermediate hosts (rodents, sheep, pigs, kangaroos etc).
- When ingested by an intermediate host, the organism forms infective cysts in the tissues of these hosts.

Transmission:

- Transmitted to humans via the ingestion of undercooked meat (e.g. pork, lamb, kangaroo) containing infective cysts.
- Ingestion of microscopic eggs shed in cat faeces is a less common mode of infection.
- Animal care workers involved with cleaning cat litter trays have an occupational risk.

Signs in Animals:

- The vast majority of feline carriers are asymptomatic, that is, they show no symptoms.

Signs in Humans:

- Systemic signs such as fever, headaches, muscle aches and enlarged lymph nodes.
- In pregnant women this organism affects the foetus causing congenital abnormalities.



Psittacosis

Bacterial infection

- Caused by infection with the bacterial organism *Chlamydia psittaci*.
- Ubiquitous throughout Australia, particularly in the wild and native parrot population.
- Birds of many species including the parrots, pigeons and other common cage birds are the main source of human infection.
- Thought to be carried asymptotically by wild birds and clinical infection is brought on by the stress of captivity.
- This disease is notifiable in many states of Australia.

Transmission:

- Infected birds shed the organism in ocular and nasal discharges.
- Organism is also shed in faeces of affected birds and this is potentially an important source of infection amongst birds from asymptomatic carriers.
- Human infections are generally following contact with clinically affected birds and are mostly via inhalation. Transmission via bird bites and indirect contact with a contaminated environment is also possible.

Signs in Animals:

- Most commonly display signs of respiratory infection such as ocular discharge, nasal discharge, difficulty breathing and sometimes coughing.

Signs in Humans:

- Causes severe systemic flu like symptoms such as fever, muscle aches, headaches, severe fatigue and some respiratory symptoms.

IMPORTANT ZONOSSES FOR PET INDUSTRY WORKERS



***Bartonella henselae* also known as Cat Scratch Fever** *Bacterial infection*

- Is carried by up to 25% of the feline population and is thought to be present in the saliva and nails (possibly transferred there by natural grooming behaviours) of infected cats.

Transmission:

- Caused by a scratch from an affected cat.
- Can also be transmitted via bites and licks.
- Humans who are most at risk are those with reduced immunity such as the young, elderly and chronically ill.

Signs in Animals:

- Cats carrying the organism are asymptomatic, that is, they show no symptoms.

Signs in Humans:

- Causes a bacteraemia in humans which generally results in signs such as fever, general malaise, lymph node enlargement or even abscessation.



Bite Wounds *Bacterial infection*

- Infections from bite wounds are an important zoonosis for any person handling or working with dogs and cats.
- Some bacteria commonly implicated in these infections are *Staphylococcus sp*, *Pasturella sp* and *Klebsiella sp*.
- Infections involving *Pasturella multocida* are the most severe and can involve hospitalisation.

Transmission:

- Bacteria from the animals mouth are transferred to the victim via the saliva at the time of the bite.
- More likely to become infected when wound is puncture-like (*that is, deep with only a small hole in the skin*).
- To reduce the chance of infections occurring, wounds must be cleaned and flushed with a suitable antiseptic solution immediately after the injury occurs. If severe, medical attention must be sought within 24 hours.

Signs in Humans:

- Cellulitis around the original wound causing swelling, redness and pain of surrounding tissues.
- Potential for lymph node involvement and systemic infection in severe cases.

