

Guidance on managing infection risks from petting zoos

Introduction

Petting zoos provide the public with opportunities to interact with animals, typically young farm animals, for recreation and education. These may be permanent, temporary or mobile displays and are located at venues such as agricultural shows, open farms, zoos, amusement parks, school fetes, markets and children's parties. Other animal contact opportunities include wildlife encounters, aquatic touch tanks, walkthrough aviaries and animal rides.

Contact with animals can cause germs to spread from animals to people. Occasionally this results in infectious diseases, known as zoonoses. Healthy animals can shed germs that make people sick. This guidance provides practical information on how to protect the health and safety of workers and visitors from acquiring zoonoses from contact with animals at petting zoos and other animal contact opportunities.

Petting zoos and zoonoses

Gastroenteritis is the most common illness caused by contact with animals at petting zoos. This causes nausea, vomiting and diarrhoea but occasionally causes more serious illness. Many animals naturally shed germs that cause gastroenteritis in people. These germs include Shiga-toxin-producing *E. coli* (especially *E. coli* 0157), non-typhoidal *Salmonella*, *Cryptosporidium*, *Giardia* and *Campylobacter*. *E. coli* 0157 is a particular risk to young children and the elderly who occasionally develop serious illness such as life threatening kidney failure.

Workers and visitors may also be exposed to other zoonoses depending on the species of animals that are displayed. For example:

- Q fever - a disease of animals such as cattle, sheep, goats, kangaroos and camels
- Leptospirosis - a disease of animals such as cattle, pigs and rodents
- Psittacosis - a disease of birds, especially parrots
- Dermatophytoses (also known as tinea or ringworm) - a disease of animals such as horses and cattle
- Orf - a disease of animals such as sheep and goats
- *Mycobacterium marinum* infection - a disease of aquarium fish.

How zoonoses spread

Each zoonotic disease has one or more preferred ways of spreading.

Contact with animals and animal environments

Many zoonoses spread by:

- contact with animals or their blood and body substances (e.g. urine, faeces, saliva or birth products)
- contact with animal environments or equipment (e.g. gates, handrails, bedding, food containers and aquarium water)
- animal bites and scratches.

Following contact, germs enter the person's body through:

- non-intact skin (e.g. cuts, abrasions or dermatitis)
- the mucous membranes that line the person's eyes, nose and mouth, for example when a person touches their face with contaminated hands
- ingestion, for example when a person eats food with contaminated hands
inhalation.

The germs that cause gastroenteritis are shed in an animal's faeces and readily contaminate the animal's body and its environment. People ingest the germs from activities such as touching the animal or its environment and then touching their face, eating in an animal contact area, kissing or being licked by an animal or drinking unpasteurised milk. Infection can occur from exposure to a very small number of germs.

Infectious droplets

Some zoonoses, such as leptospirosis, spread when germs contained in droplets of animal blood, body substances or contaminated water splash onto a person's face and enter the person's eyes, nose or mouth. Zoonoses that spread by droplets often also spread by contact.

Infectious aerosols and dust

Some zoonoses, such as Q fever and psittacosis, spread when germs contained in aerosols or dust contaminated with animal blood or body substances become airborne and are breathed in, for example during cleaning activities, animal movement, windy weather or animal birthing.

Vectors

Some zoonoses, such as animal scabies, spread by vectors such as ticks, fleas and mites. Rodents can also spread disease.

Ensuring health and safety

Petting zoos that are safe and hygienic protect workers and visitors from illness and ensure that visitors have an enjoyable experience. Operators of petting zoos and other animal contact opportunities have a duty to ensure the health and safety of workers and other persons, including visitors, so far as is reasonably practicable. Businesses where petting zoos are displayed, such as agricultural shows and school fetes, may also have a health and safety duty.

Managing zoonoses

The risk to workers and visitors from zoonoses can be minimised by using a risk management approach that includes identifying hazards, assessing risks, implementing suitable control measures and periodically reviewing the control measures to make sure that they are working properly. This process should be supported by policies, procedures, training and allocation of responsibilities.

Hazards and risks from zoonoses vary depending on the size and type of display (e.g. permanent, temporary or mobile), the species of animals displayed, the level of contact with animals and how the display is managed. It is important to be informed about the zoonoses associated with your animals, how these spread to people, options for suitable control measures, and to seek advice as needed.

All animals have the potential to spread zoonoses however some animals pose a higher risk. This includes:

- animals that naturally shed germs that cause gastroenteritis, for example farm animals (e.g. cattle, sheep and goats), reptiles (e.g. snakes, crocodiles, turtles, lizards), amphibians (e.g. frogs, salamanders) and poultry (e.g. chicks, ducklings and goslings)
- animals that are unweaned, juvenile, pregnant, birthing, newborn, newly hatched, co-mingled with other species, stressed or sick
- animals that are unused to being handled or display aggressive behaviour
- some species of wildlife (e.g. microbats and flying foxes) and exotic animals (e.g. monkeys).
 - Horses could have Hendra virus and appear clinically well and be shedding the virus
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Zoonoses can affect anyone, however some people are at a higher risk. This includes:

- workers who are not immune to zoonoses that are vaccine-preventable, such as Q fever
- pregnant women, people aged 65 years and older, people with an impaired immune system because of a medical condition or treatment, children under 5 years of age and infants under one year of age. Young children and infants are especially at risk because of age-related factors such as an immature immune system, natural curiosity and attraction to animals, behaviours such as putting fingers and objects in their mouth and poor hand washing.

Control measures

The following content provides examples of ways to manage zoonoses at petting zoos, however the actual control measures that are adopted may vary depending on the size and type of display and the level of risk.

Layout and design

The layout and design of petting zoos can significantly reduce infection risks. Consider the following:

- Have a clearly defined animal contact area, such as an animal enclosure, where visitors can touch the animals.
- Clearly separate animal contact areas from eating areas and children's play areas.
- Locate the animal contact area in a well ventilated place.

- Make sure that structures and equipment (e.g. gates, barriers) are made of materials that can be readily cleaned and disinfected.
- Prevent people who are outside the display from touching the animals (e.g. by using double fencing, barriers and signs).
- Have a one way flow for the movement of visitors with a separate entrance and exit. Transition areas located at the entrance and exit can be used to control the number of visitors inside the animal contact area and at the hand washing facilities.
- Provide a storage area for strollers to prevent these being brought into the animal contact area and spreading germs via contaminated wheels.
- Have hand washing stations immediately adjacent to all petting opportunities

Hand hygiene



Hand hygiene is critical to preventing zoonoses. Consider the following:

- Provide suitable and sufficient hand hygiene facilities for workers and visitors.
- Position hand washing facilities immediately adjacent to all petting opportunities
- Hand washing facilities should include liquid soap, running water, single-use paper towels in a dispenser and waste bins. If providing warm water, make sure that the water temperature at the tap does not cause scalding. Hot air dryers may take longer to use and cause queues or incomplete hand drying. Hands that are not dried properly can readily pick up germs.
- Where permanent hand washing facilities are insufficient for busy periods such as school holidays, use temporary hand washing facilities such as portable hand washing stations.
- Waterless hand sanitisers and wipes may be used only where it is not reasonably practicable to provide permanent or temporary hand washing facilities. However it is important to note that these products do not kill some types of harmful germs spread by animals (e.g. *Cryptosporidium*) and do not work properly when the hands are soiled with dirt or dust. If used, hand sanitisers should contain at least 60% alcohol and visitors should be instructed to wash their hands with soap and water at the first opportunity and before eating. Visitors' use of hand sanitisers should be supervised to prevent inadvertent contact with the eyes or potential ingestion which can be harmful, especially for children. Hand sanitisers may also be used before contact with animals to prevent germs on people's hands from spreading to animals.
- Do not provide containers of standing water (e.g. wash bowls) or shared towels. These spread germs, even if a disinfectant is added to the water, and are not acceptable.

Also consider the following:

- Install hand washing facilities immediately adjacent to the exit of the animal contact area or position temporary or mobile petting zoos close to permanent hand washing facilities.
- Place hand washing facilities at a suitable height for children and wheelchair users, or provide raised steps for children.
- The use of hands free taps (e.g. sensor or pedal operated taps) may prevent contamination of taps.
- Taps that stop the flow of water when the hands are released are water saving but may prevent proper hand washing.
- Make sure there is sufficient water pressure at each tap, manage wastewater by ensuring it is connected to a drain or stored in a tank for subsequent disposal, and clean up spills of water to prevent the ground becoming muddy or creating a slip hazard.

- Make sure that the hand washing facilities are regularly cleaned and restocked, waste bins are regularly emptied and that portable hand washing stations have sufficient water supplies.

Instruct workers and visitors about hand hygiene:

- Instruct visitors to wash their hands after leaving the animal contact area, even if the animals were not touched. Place staff at the exit to direct visitors to the hand washing facilities or to actively offer hand sanitiser.
- Instruct workers to cover non-intact skin with a water-resistant dressing and to wash their hands before eating and drinking and after contact with animals, animal waste and potentially contaminated surfaces or equipment, after leaving animal contact areas and after removing personal protective equipment (PPE).

Food hygiene

Food hygiene is important to prevent gastroenteritis. Consider the following:

- Do not allow workers to consume food or drinks in animal contact areas.
- Do not allow visitors to bring food or drinks into animal contact areas, including baby bottles and spill proof cups.
- Do not store or prepare animal food or clean animal equipment in areas where people prepare or eat food, and use separate food containers and utensils.
- If providing animal feeding opportunities, do not place the food in consumables such as ice cream cones. Supervise the feeding activity and do not let children eat the food. Do not let visitors handle animal food that may contain harmful germs, such as rodent carcasses for feeding snakes
- If providing milking displays, do not offer unpasteurised milk for tasting.
- Do not allow displayed animals, including birds, in areas where food is served or consumed.

Cleaning

Cleaning is important because some germs, including those that cause gastroenteritis, survive for a long time in the environment. Consider the following:

- Regularly clean and disinfect surfaces in animal contact areas, especially frequently touched surfaces such as railings, barriers, gates, handles and taps. Establish a cleaning schedule and keep a cleaning log to make sure that it is being done.
- Clean surfaces thoroughly using a detergent. This is an important step because disinfectants may not work effectively on dirty surfaces. After cleaning, apply a disinfectant and allow a sufficient contact time to kill the germs. Alternatively use a product that is both a detergent and disinfectant. Always follow the manufacturer's safety instructions when using chemicals. Seek veterinary advice about a suitable disinfectant if animals develop illness such as diarrhoea.
- Use dedicated equipment for cleaning animal environments and equipment. Wash the equipment after use and store dry.

- Regularly clean animal food and water containers, including containers provided to visitors for animal feeding opportunities. This will keep the animals healthier, which also reduces the chances of disease shedding.
- If adventure activities such as rope climbing or treetop walks are co-located within an animal contact area, make sure that railings and equipment are regularly cleaned to remove animal waste.
- Avoid generating dust and aerosols when cleaning, for example use wet mopping instead of dry sweeping and not using a high pressure water hose. If cleaning bird waste, spray with water before disturbing it and wear a properly fitted particulate respirator to protect against diseases such as psittacosis.
- After packing up a temporary or mobile petting zoo, clean and disinfect all areas where animals have been.
- Implement a pest control program.

Waste management

Animal waste contains germs so make sure that the waste is managed hygienically. Consider the following:

- Clean up animal waste and soiled bedding promptly, and replace animal bedding as needed.
- Store animal waste hygienically. If using waste bins, make sure that these are fitted with a lid
- Manage liquid manure and surface run off, for example by ensuring good drainage.
- Regularly clean equipment used for waste management, such as shovels and wheelbarrows.
- If possible, have a separate service entrance to the animal contact area for the movement of animals and manure to prevent contamination of visitor walkways.
- Consider having a separate night time holding area for animals to reduce the amount of animal waste in the animal contact area.
- Make sure that animal carcasses and birth products (e.g. aborted fetuses and placenta) are handled and disposed of safely.
- Instruct workers to wear sufficient PPE to prevent their hands and clothing from becoming contaminated with animal waste.
- Do not allow visitors to collect manure to take home.
- If contamination of footwear, strollers or wheelchairs is likely, provide ways for these to be cleaned (e.g. boot wash station).

Information, training and supervision

Provide workers, including temporary, seasonal and volunteer workers, with information, training and supervision on safe animal handling, how to protect themselves and visitors against zoonoses and how to recognise and discourage unsafe visitor behaviour.

Provide visitors with safety information and target this to their age and languages. Key messages include:

- Animals can spread germs that make people sick.
- Some people should take extra care around animals (e.g. pregnant women, infants, young children, the elderly and people with chronic medical conditions or a weakened immune system).

- How to stay safe around animals (e.g. handle animals gently, don't kiss or be licked by animals, don't touch animal faeces, don't touch, lie down or roll in bedding, don't eat or drink inside the animal contact area).
- Wash hands after touching animals.

Information can be provided in various ways including signage, continuous loop videos, pictograms, the attraction's website, and brochures. Pre-visit information packs can help teachers and others to prepare children for the visit.

Display signage at:

- entrances to instruct visitors about health risks and safe animal contact
- exits to instruct visitors to wash their hands
- hand washing facilities to instruct visitors on how to wash their hands properly.

Ensure that there are a sufficient number of trained staff to properly supervise visitors and consider limiting the number of visitors allowed inside the animal contact area at any time. Although parents and carers are responsible for their children, staff may need to remind visitors, especially young children, about safe behaviour around animals and to wash their hands.

First aid

Contact with animals may cause injuries and illnesses that require first aid, including bites, scratches, stings, kicks and allergies. Provide first aid facilities including a suitably stocked first aid kit and access to trained first aid personnel. Wounds inflicted by animals can readily become infected by germs that are naturally found in animals' mouths and in animal environments. Wounds should be thoroughly cleaned and covered with a dressing. Serious, deep, dirty or puncture wounds should be assessed by a doctor because medical treatment, such as a tetanus booster, may be needed.

Worker health

Ensure that workers have the necessary vaccinations to do their job safely, and seek medical advice about vaccination as needed. Recommended vaccinations include:

- Q fever vaccination for workers who work with livestock (e.g. cattle, sheep, goats and camels) and native wildlife (e.g. kangaroos, wallabies and bandicoots). Contractors who provide cleaning services for animal contact areas or who handle and dispose of animal waste or birth products should be vaccinated against Q fever
- seasonal influenza vaccination for workers who work with pigs or poultry
- current tetanus vaccination
- current rabies vaccination for workers who handle bats.

Provide workers with PPE and instruct them in its proper use. Examples of PPE include:

- gloves (e.g. disposable gloves or heavy duty gloves) for contact with animal blood, body substances, mucous membranes (e.g. inside the animal's mouth), non-intact skin (e.g. wounds) and contaminated surfaces and equipment. Puncture-resistant gloves and gauntlets should be worn where workers are at risk of animal bites and scratches (e.g. handling raptors)
- protective clothing (e.g. overalls) if personal clothing could become contaminated with animal blood or body substances

- safety eyewear (e.g. safety glasses, goggles or face shield) if the eyes or face could become contaminated with splashes of blood, body substances or contaminated water
- protective footwear (e.g. enclosed shoes, safety boots, rubber boots) if shoes could become contaminated with animal blood or body substances
- respiratory protective equipment (e.g. properly fitted particulate respirator) if workers are exposed to potentially infectious dust or aerosols.

Instruct workers on what to do if they have accidental contact with animal blood or body substances. For example:

- If blood or body substances get on unprotected skin or on a wound, wash the area with soap and water as soon as possible. Where water is not immediately available, wipe the area clean, apply a waterless hand sanitiser and wash the area with soap and running water as soon as possible.
- If the eyes are contaminated, gently but thoroughly rinse open eyes with water or normal saline for at least 30 seconds.
- If blood or body substances get in the mouth, spit the substance out and then rinse the mouth with water several times.

Instruct workers to tell their doctor that they work with animals if they become sick as this may assist with early diagnosis and treatment.

Instruct workers about particular risks associated with pregnancy and advise medical assessment of this risk as soon as pregnancy is known?

Animal care

Animals that are healthy and well cared for are less likely to shed harmful germs. However this alone will not prevent the spread of zoonoses because healthy animals can naturally shed germs. Consider the following:

- Provide animals with clean and hygienic housing, food, water and bedding.
- Minimise animal stress from prolonged transportation, confinement, crowding, handling and extremes of temperature.
- Rotate animals through the animal contact area so that they have sufficient rest time.
- Provide animals with preventative veterinary care including appropriate nutrition, vaccinations and parasite control (e.g. worms, ticks, fleas). Speak to your veterinarian about leptospirosis vaccination of cattle and pigs and Hendra virus vaccination of horses.
- Monitor animals for signs of illness and injury, isolate sick animals and seek veterinary advice as needed.
- Do not provide the following animals for patting or other animal contact opportunities:
 - ill or injured animals, including animals with diarrhoea, respiratory illness or open wounds (e.g. recently dehorned animals)
 - animals showing aggressive or unpredictable behaviour or which are not used to being handled
 - birthing or recently birthed animals and their newborn
 - animals that are not suitable for patting (e.g. bats and venomous snakes).
- If a pregnant animal births or aborts unexpectedly, remove the animal from display because animals infected with Q fever release a large number of bacteria during birthing. Where possible, place the animal in a well ventilated area away from the public as the bacteria can

travel over considerable distance in the air. Do not allow visitors to watch the birthing as this is high risk for Q fever. After the birthing, safely remove and dispose of the birth products. Clean, disinfect and ventilate the area thoroughly before allowing visitors to return. People who assist with the birthing, handle birth products or clean the birthing area should be immune to Q fever. A properly fitted particulate respirator may be used as short term protection where this is not reasonably practicable.

- Speak to your veterinarian about biosecurity measures to protect your animals from acquiring infectious diseases.

For more information

For more information on zoonoses and work health and safety, contact Workplace Health and Safety Infoline on 1300 362 128 or visit www.worksafe.qld.gov.au.

For more information on zoonoses and animal health or biosecurity, contact Biosecurity Queensland on 13 25 23 or visit www.biosecurity.qld.gov.au.

For more information on zoonoses and human health, contact Queensland Health on 13HEALTH (13 43 25 84) or visit www.health.qld.gov.au. Seek advice from a general practitioner, local hospital emergency department or local public health unit if you have concerns about your health after contact with animals. See Queensland Health [Infection Control Guidelines for Animal Contact](#).

For more information on public health issues, contact an environmental health officer from local government.