

A photograph of a man with glasses and a young boy interacting with a goat in a barn. The man is leaning over the goat, and the boy is smiling. The background is a barn with hay. A large purple curved graphic element is overlaid on the right side of the image.

2015

Animal contact guidelines

reducing the risk of illness associated
with animal contact



Government
of South Australia

SA Health

Acknowledgment

The Animal Contact Guidelines - reducing the risk of illness associated with animal contact (2015) is based on the review of the literature and current recommendations, with particular reference to the following key sources:

- National Association of State Public Health Veterinarians, Inc. (NASPHV), Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011, Recommendations and Reports, Morbidity and Mortality Weekly Report (MMWR): 2011: 60 (RR04):1-24.
- Queensland Government, Animal contact guidelines – reducing the risk to human health 2014, August 2014.

These Animal Contact Guidelines were also developed with expert advice from:

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- Department of Primary Industries and Regions, SA
- Food Safety and Nutrition Branch, SA Health
- Health Protection Branch, SA Health

Animal Contact Guidelines - reducing the risk of illness associated with animal contact.

South Australian Department for Health and Ageing (Health Protection Branch and Communicable Disease Control Branch)

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The Animal Contact Guidelines-reducing the risk of illness associated with animal contact (2015) (the Guideline) provides advice of a general nature. The statewide Guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The Guideline is based on a review of published evidence and expert opinion. Information in this statewide Guideline is current at the time of publication.

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Animal Contact Guidelines



Image courtesy, Dave Mattner, Zoos SA

Animal Contact Guidelines

Animals form a rich part of our ecological system.

Exhibited animals allow us to get closer to nature. They provide a unique opportunity to learn, explore and appreciate the natural world. Having contact with animals is an experience that should be valued, respected and enjoyed.

While appreciating the benefits animals can bring, it is important to know animals carry germs that can cause illness in people. Simple health promoting behaviours, such as washing and drying hands after being in an animal contact area, can reduce the risk of illness, and assist in maintaining health and wellbeing.

Background

Diseases transmitted from animals to people are called zoonotic diseases. Diseases transmitted from sick people to animals are called anthroponotic diseases. While the transmission of diseases can work both ways (that is, animals to humans and humans to animals) these Animal Contact Guidelines (the Guidelines) focus on human health and how people can reduce their risk of illness from contact with animals.

More than 200 zoonotic diseases have been identified, caused by: bacteria, protozoa, fungi, viruses, parasites and prions. Reported sources of zoonotic diseases in Australia include (but are not limited to): cows, sheep, horses, goats, pigs, guinea pigs, ferrets, rabbits, dogs, cats, chickens, birds, fish, kangaroos, mice, rats, snakes, lizards, turtles, tortoises, bats, and other wild animals.

Documented outbreaks of zoonotic diseases have been associated with animal contact. Appendix 1. Table 1. provides examples of zoonotic disease outbreaks in South Australia, nationally and internationally where there has been direct or indirect contact with animals. In Australia zoonotic disease outbreaks associated with animal contact do not happen often, but where illness has occurred the consequences have often been serious.

These Guidelines aim to identify potential risks of getting a zoonotic disease and recommends measures to reduce the risk of illness for people who are in contact with animals in a public setting.

Purpose

Animal handlers, exhibitors and retailers have a general public health duty and a work health and safety responsibility to protect themselves, staff, customers and visitors from foreseeable risk of harm and injury at premises or events where animals are handled, exhibited, displayed or sold.

Childcare services, schools and health care facilities are also bound by work health and safety regulations, but their duty of care and responsibility further extends to others, including children or patients in their care.

Whenever animals are handled, exhibited, displayed, sold, hosted or housed there is a responsibility for exhibitors, retailers, childcare service workers, school personnel and health care workers to be informed and aware of the health risks associated with direct and indirect animal contact, and to develop and implement procedures that reduce the risk of illness.

These Guidelines provide information and practical advice about how to reduce the risk of illness and how to stay healthy around animals for people handling or exhibiting animals for public display, or for those selling, hosting or housing animals in a community facility such as a pet shop, or in childcare services, schools or health care facilities.

Audience

These Guidelines provide advice and direction for those who handle, exhibit, sell or display animals in a public setting including (but not limited to):

- accommodation in a farm or animal setting
e.g. farm stays
- agricultural shows and field days
- animal exhibits held at shopping centres
- animal nurseries
- animal rescue centres and shelters
- animal shows
- animals in childcare services and schools
(visiting or resident)
- animals in health care facilities (visiting or resident)
- children's parties (with animals from mobile exhibits)
- nature education centres
- pet shops
- petting zoos
- travelling farms or animal troupes, including circuses and carnivals
- wildlife parks or exhibitions
- zoos.

Scope

These Guidelines are for animal handlers and exhibitors who exhibit or display animals at an event or premises (permanent, mobile or temporary).

These Guidelines also include information about reducing the risk of zoonotic disease from animals in pet shops, childcare services, schools, and health care facilities.

The measures outlined in these Guidelines are considered best practice. They aim to enhance standards in public health by:

- reducing the risk of zoonotic disease transmission in children and adults
- addressing work health and safety obligations
- meeting duty of care.

These Guidelines also aim to set minimum standards to assist local council environmental health officers administer the *South Australian Public Health Act 2011*, and apply to any event or premises where animals are handled, exhibited or displayed (excluding commercial animal farming and processing).

Legal obligations

The *South Australian Public Health Act 2011* (the Act) enables health authorities to take action to safeguard public health. In reducing risk to public health it is recommended that people who handle, exhibit, display, sell, host or house animals in a public setting comply with these Guidelines.

In circumstances where public health is considered to be at risk these Guidelines may be used by relevant health authorities to inform legal notices and directions.

Section 56 of the Act states:

"a person must take all reasonable steps to prevent or minimise any harm to public health caused by, or likely to be caused by, anything done or omitted to be done by the person"

To ensure compliance with these Guidelines, people who exhibit, display, sell, host or house animals in a public setting are encouraged to contact an environmental health officer at the local council where the animals will be located.

Responsibilities and powers of environmental health officers

As public health authorities for their areas, local councils employ environmental health officers to preserve, protect and promote public health. The role of an environmental health officer is to:

- provide advice on public health risks associated with animal contact and ways to reduce those risks
- deliver regulatory and non-regulatory environmental health services
- protect the community from risks arising from environmental health hazards that impact on human health, the natural, and built environment.



How to use these Guidelines

There are six sections in this document. After the first introductory section, the second section **Essential Considerations** provides core advice for anyone who handles, exhibits, displays, sells, hosts, or houses animals in a public setting.

Sections three, four, five and six provides additional information and advice for either an animal exhibitor, pet shop, childcare service, school, or health care facility.

A series of supporting resources are also included in these Guidelines. They are for animal exhibitors, retailers, childcare workers, teachers and health care workers. These practical tools aim to reinforce behaviours that assist to reduce the risk of zoonotic disease, from animal contact, in a public setting.

Animal exhibitors

In South Australia most animal exhibitors (e.g. zoos, wildlife or conservation parks) belong to a recognised industry association that requires adherence to professional levels in all areas of operation.

Animal husbandry, health, facilities, safety and hygiene are regulated and subject to various codes of practice and minimum standards. Exhibited animals are protected by animal welfare, biosecurity and environmental protection laws and regulations.

These Guidelines complement existing industry legislation, standards, policies, regulations, guidelines and codes of practice in that they provide information and advice as it relates to the prevention of zoonotic disease in people.

Pet shops

Pet retailers are encouraged to use and apply these Guidelines alongside other relevant industry standards, guidelines, regulations, and codes of practice. In South Australia the acceptable treatment of animals in the pet trade is regulated under animal welfare legislation.

Childcare services and schools

These Guidelines can be used to inform procedures and practices for childcare services and schools as they relate to contact with animals in those settings.

These Guidelines can complement existing South Australian Department for Education and Child Development policies, guidelines, codes of practice, standard operating procedures, and duty of care arrangements, as they relate to animals in a care or educational environment.

Animals in childcare services and schools are protected by animal welfare regulations and standards in animal ethics relating to their acquisition, care and management.

Health care

These Guidelines provide advice of a general nature. The application of these Guidelines should be considered alongside other relevant policies, protocols, directives and legislation relating to best practice in health care, infection control, patient rights, animal welfare, and work, health, and safety.

Definitions

Aerosols:

A suspension of tiny particles or droplets in the air, such as dusts or mists which may contain microorganisms.

Alcohol-based hand sanitisers:

Alcohol-based hand gels or hand rubs that contain approximately 70% alcohol and are intended to kill germs.

Animal contact:

Contact between animals or their environments (e.g. bedding, enclosures, cages etc.) and humans.

Animal handler / animal exhibitor / operator:

A person who handles or exhibits animals.

Animal waste:

Materials such as hair, feathers, skin, faeces, urine, birthing products (e.g. placenta) and bodily fluids that are either shed, secreted or eliminated from an animal's body.

Business:

Profit and not-for-profit businesses including schools, and charity and community events.

Child:

A person under the age of 18 years.

Childcare services:

Childhood education and care services including home and centre based care, out of school hours care (OSHC), pre-school, and kindergarten.



Council:

As defined in the *Local Government Act 1999*.

Environmental Health Officer (EHO):

A local or state government officer authorised under the *South Australian Public Health Act 2011* whose role is to promote and to provide for the protection of the health of the public of South Australia.

Germ:

A pathogen or disease-causing organism e.g. some bacteria, viruses, fungi.

Hand washing:

Mechanically (physically) removing germs from hands using soap and running water. Drying hands is also a part of the hand washing process.

Immunosuppressed:

When a person's immune system is less able to fight off infection than normal due to a medical condition such as poorly controlled diabetes, chronic kidney or liver disease (including viral hepatitis), advanced human immunodeficiency virus (HIV) infection, and taking immunosuppressing drugs (such as treatment for cancer).

Microorganisms:

Organisms too small to be seen by the unaided human eye, including bacteria, viruses and some fungi.

Mucous membrane:

The moist lining of many structures of the body, such as the nose, mouth, eyes and throat.

Pathogen:

A disease-causing germ e.g. some bacteria, viruses, fungi.

Pasteurisation:

Application of a heat treatment to a liquid or food to reduce pathogens.

Petting Zoo:

A collection of domesticated animals (typically young farm animals) where members of the public might have close contact; including, touching or feeding the animals. Petting zoos can be permanent, mobile or temporary animal exhibits.

Relevant authority:

The Chief Public Health Officer or a local council.

The Act:

The *South Australian Public Health Act 2011*.

Waste:

Also known as general waste, and consists of unwanted materials including anything soiled by animal faeces and urine such as soiled bedding material, and unwanted food and rubbish.

Vector:

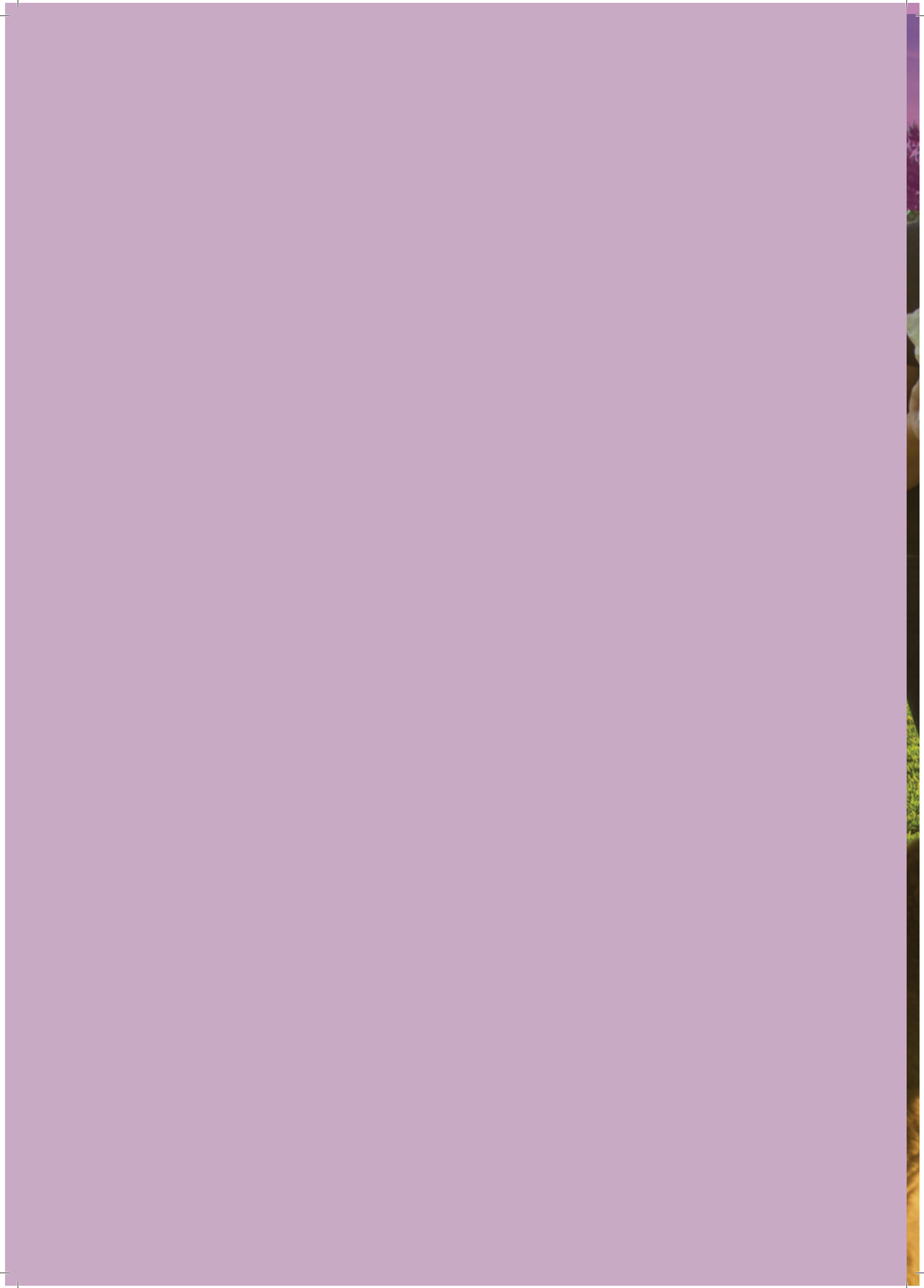
An agent that transmits a pathogen from one living organism to another, for example, mosquitoes.

Zoo:

A place where local or exotic but usually wild animals are viewed from behind a safe enclosure and where members of the public typically have no direct contact with the animals.

Zoonotic diseases:

Diseases that can be transmitted from animals and their environments to humans.



Essential Considerations



image courtesy SATC

Reducing zoonotic disease transmission

Animals may carry and transmit germs without showing any signs of illness. Zoonotic diseases can be spread through:

- direct animal contact – touching or handling animals and their carcasses; or animal bites and scratches, or
- indirect animal contact – contact with animal faeces, urine, saliva, blood, or birth products; or contact with contaminated objects such as cages, enclosures, enclosure handrails, screens, aquaria, food, water, and animal environments.

Ways zoonotic diseases are transmitted

Humans can become infected with zoonotic diseases through a number of different routes of transmission including:

- ingestion
- inhalation
- skin or mucous membrane contact
- vector borne transmission.

Ingestion: hand to mouth

Animals may carry and shed germs such as *Salmonella*, *Campylobacter*, *Cryptosporidium* and Shiga toxin-producing *Escherichia coli* (STEC) in their faeces and urine. These germs can contaminate animal surroundings, such as cages, enclosures, rails, screens, aquaria, food and water, and can cause gastroenteritis, or other diseases in humans.

Human hands may become contaminated with germs when touching animals, their surrounds, or soiled surfaces or objects. Infection can then occur if contaminated hands or objects are placed in the mouth.

Ways to reduce risk of illness

To reduce the risk of hand to mouth zoonotic disease transmission, it is important to always:

- avoid kissing or bringing animals close to the mouth
- avoid placing hands in or near the mouth or eating, drinking, smoking until hands have been washed
- wash hands and any skin that has been exposed to animals, their feed, their feed containers, environment or waste with soap and running water (dry hands following hand washing).

Ingestion: eating or drinking contaminated food or water

Consuming food or water contaminated with germs from animals can lead to human illness. Contaminated foods can be of animal origin e.g. unpasteurised milk or may be food or water contaminated with animal waste (e.g. fresh produce fertilised by animal manure). Animal feed and water sources are also unsafe for human consumption and must not be consumed.

Ways to reduce risk of illness

- Unpasteurised (raw) milk is considered unsafe for human consumption because it may contain germs such as *Salmonella*, *Campylobacter* and Shiga toxin-producing *E. coli* (STEC) that can cause serious infection in people when ingested.
- It is recommended that people do not sample, taste, or drink unpasteurised milk.
- People should never sample, taste, or eat animal feed or water, and should always wash hands with soap and running water (and dry hands) after touching animal feed, or containers that hold, or store, animal feed.

Inhalation

People may acquire zoonotic diseases by inhaling contaminated droplets, aerosols, or fine particles such as dust or dried materials from the animal's environment.

Animals giving birth and newborn animals may present a risk to human health. Infection in humans can be caused through direct exposure to birthing products (e.g. breathing in aerosols) or indirectly through the contamination of the environment (e.g. clothing, dust and straw, wools or hides).

An example of a disease transmitted this way is Q fever.

Ways to reduce risk of Q Fever

Unless vaccinated against Q fever, people should not be exposed to placental animals that are: heavily pregnant, birthing or newborn.

All animal waste must be managed, stored and handled to prevent generation of and human exposure to, dusts or aerosols.

Q fever is a vaccine preventable disease. Q fever vaccination is recommended for people with occupations that place them at risk of getting Q fever such as:

- veterinarians (including students and nurses)
- people who work in abattoirs (including contractors)
- livestock transporters
- sheep shearers
- livestock farmers
- livestock sale yard workers
- tanning and hide workers
- agricultural school staff and students
- people who cull or process kangaroos or camels
- wildlife and zoo workers
- anyone who handles animal products of conception (i.e. placenta and newborn animals).

Skin or mucous membrane contact

Infections from animals can be spread directly to humans through animal bites and scratches, or indirectly when broken skin or mucous membranes come into contact with animals, their environments or their waste products.

Bats (including flying foxes) for example, may carry germs including Australian bat lyssavirus (closely related to the classical rabies virus). Australian bat lyssavirus can be transmitted to humans by bites, scratches and exposure to bat saliva. Australian bat lyssavirus causes rabies which is almost invariably fatal.

How to stay safe around bats

Bats, including flying foxes, are native throughout Australia and play an important role in the ecosystem. Grey-headed flying foxes and other bat species can carry Australian bat lyssavirus which causes rabies.

Unvaccinated and untrained people should **never** handle or touch bats. Bat bites or scratches can lead to serious health consequences including death. Any contact with bats requires urgent medical attention.

Animal handlers who work with or handle bats should:

- Be appropriately trained in bat handling.
- Always wear appropriate personal protective equipment in accordance with work health and safety requirements.
- Be vaccinated with rabies vaccine and have antibody levels regularly monitored, as detailed in the Australian Immunisation Handbook (current edition).

If a person is scratched or bitten by a bat, or if they come into contact with bat saliva, they should:

- Immediately clean the wound / contact area thoroughly with soap and water for at least 5 minutes.
- Apply an antiseptic solution such as povidone-iodine.
- Immediately contact a doctor or hospital emergency department for further assessment and consideration of rabies post exposure prophylaxis (i.e. rabies vaccine and, if required, rabies immunoglobulin). Rabies immunoglobulin is a solution containing antibodies specific for rabies that is made from blood products.



image courtesy SATC



Transmission of disease from animal waste to humans can occur via hand to mouth activities, or contact with mucous membranes, and via skin cuts or scratches.

Diseases such as leptospirosis can be spread from animals to humans via animal urine. This can be through direct contact with animal urine (such as an animal urinating on a person) or indirectly through contact with environments soiled with animal urine like dirt, ground cover or animal bedding.

Ways to reduce risk of illness

- If a person comes into direct contact with animal faeces, urine or saliva they should remove soiled clothing as soon as it is practical to do so and to wash any area of the body that has been in contact with those animal secretions; and wash any soiled clothing.
- Animal cages or enclosures should be well maintained and cleaned. Soiled bedding or ground cover like straw or sawdust should be replaced regularly with clean material.
- In an animal contact area, cover exposed cuts, abrasions or broken skin with a waterproof dressing (which should be changed with clean hands if soiled).
- Covered footwear is recommended where there is a risk of injury to a person's skin, for example, a heavy animal stepping on a person's foot.
- If eyes are scratched or come into contact with animal wastes such as faeces, urine or saliva, wash with large amounts of water or use an eye wash solution. Seek medical assistance if required.

Vector borne-transmission

Vectors, such as insects, can spread germs from animals to humans, often through bites. Fleas are vectors which can live on host animals such as dogs, cats or rodents. Fleas can transmit tapeworm to humans if the fleas are accidentally ingested from infected animals, although this is rare. Rat fleas can also transmit the disease murine typhus from rats and mice to humans, but this is uncommon.

Ways to reduce risk of illness

- Animals infested with insects, internal parasites or mites should not be exhibited or displayed in a public setting.
- Animals and their bedding, cages and enclosures should be regularly examined for signs of insect infestation. Once the insect has been correctly identified, appropriate steps should be taken to remove the infestation and prevent its recurrence. This usually involves treatment of the animal with a suitable veterinary insecticide, and the cleaning, removal or insecticidal treatment of infested bedding material and surrounds. Any insecticide use must adhere strictly to the directions on the label. Veterinary care and advice may be necessary, and heavy infestations may require the services of a licensed pest control operator.
- The application of a suitable insect repellent to humans containing diethyl meta-toluamide (DEET) or picaridin will also discourage insects from biting, and may be necessary for animal handlers who are caring for animals infested with insects until the infestation is suitably controlled.

More information about zoonotic diseases, their routes of transmission and potential sources of infection can be found in Appendix 2. Table 2. Zoonotic disease:transmission, signs and symptoms.



Washing and drying hands

When zoonotic disease occurs, it is commonly acquired via contaminated hands during contact with animals, their environments or their wastes.

Washing and drying hands is considered the most important measure to minimise the risk of most zoonotic diseases.

In environments where animals are present, and regardless of whether animals are touched, washing hands with soap (preferably liquid) and running water, and drying using a single use disposable paper towel (preferred option) or air dryer, is the best way to reduce the risk of illness.

Washing and drying hands

Hand washing physically removes germs from hands using soap and running water i.e. removing the germs from the hands and down the sink. Drying hands with a single use disposable paper towel (preferred option) or air dryer is considered an important step in the hand washing process. If hands remain moist there is a greater propensity to transfer germs from one thing or person to another.

Hand washing facilities

In facilities, premises or venues where animals are present in a public setting, hand washing facilities including soap (preferably liquid), running water and single use disposable paper towels (preferred option) or air dryers must be available for people to wash and dry their hands.

Clear and prominent signs advising people to wash and dry their hands after being in an animal contact area, and before eating or drinking, should be displayed. Additional signs instructing people where and how to wash and dry hands may be required.

To encourage hand washing it is important to provide hand washing and drying facilities that children and people with disabilities can reach and operate.

Children, particularly those less than five years, and some people with intellectual or physical disabilities, may require assistance with washing and drying of hands.

Liquid versus bar soap

Liquid soap is convenient and is preferred over bar soap. It is preferable to replace rather than refill empty liquid soap containers as refilling may lead to contamination.

If bar soap is used care must be taken for it to drain properly. Visibly soggy or dirty soap may carry germs and discourage people from washing their hands.



Effectiveness of alcohol-based hand sanitisers

In an animal contact environment, the use of alcohol-based hand sanitisers alone is **not** effective. Alcohol-based hand sanitisers reduce the number of germs on hands but do not eliminate all germs and are ineffective in the following situations:

- in the presence of dirt or organic matter such as the proteins found in fur or saliva
- against some viruses and spore forming bacteria.

Proper hand washing with soap (preferably liquid) and running water, and drying with single use disposable paper towels (preferred option) or air dryer is the best way to reduce the number of germs on hands and is always the best option.

When to wash hands

In an animal contact environment people should wash their hands with soap (preferably liquid) and running water, and dry them with a single use disposable paper towel (preferred option) or air dryer.

Wash hands after:	leaving an animal area, regardless of whether animals were touched
	touching animals, their enclosures, their cages, their feed, their feed containers or their waste
	being licked, bitten or spat on by animals (also wash affected area).
Wash hands before:	preparing or eating food
	drinking
	any other 'hand to mouth' activity such as smoking.

Correct hand washing technique

- Use soap (preferably liquid) and running water.
- Wet hands thoroughly and lather with soap.
- Rub hands vigorously for at least 20 seconds.
- Wash all surfaces including front and back of hands, wrists, thumbs, between fingers and underneath fingernails.
- Rinse hands well under running water.
- Turn off tap with used paper towel (if possible).
- Dry hands with a single use disposable paper towel (reusable towels are unsuitable).
- Dispose used paper towel in a waste container.

Tip: to avoid recontamination of hands, facilities should consider installing automatic sensor or lever taps.

Additional measures

To minimise the risk of illness when in an animal contact area the following additional measures are recommended:

- avoid kissing or bringing an animal close to the face
- avoid “hand to mouth” contact, that is, putting potentially contaminated fingers or hands in or near the mouth
- where possible, avoid being licked, bitten or scratched by an animal
- avoid sitting, lying or allowing children to play in animal bedding or where animals are housed
- cover existing cuts and abrasions with a water proof dressing (change with clean hands when soiled)
- avoid wiping hands on clothes before washing hands.

Children, particularly those aged less than five years, require supervision and support to adopt these behaviours.

Animal bites or scratches

The mouths and claws of animals carry germs that can cause infection if a person is bitten or scratched.

Should an animal bite or scratch a person it is important to wash the wound thoroughly and consider seeking medical attention.

Note: bat bites and scratches can have serious health consequences and therefore require a specific response.

Immediately clean the wound or contact area thoroughly with soap and running water for at least 5 minutes, apply an antiseptic solution (for example: povidone – iodine) and immediately contact a doctor or hospital emergency department for further assessment.





People who need to take extra care

While everyone should take measures to protect their health, some people are at greater risk of acquiring a zoonotic disease, or if infected, may experience more severe disease, or both. These people need to take extra care and include:

- children aged less than five years
- pregnant women
- people who are immunosuppressed.

Children aged less than five years

The immune system of young children is not yet mature and this can make children aged less than five years more vulnerable to some diseases.

The behaviour of children is also different from adults e.g. children may have closer contact with animals and not wash or dry their hands.

Children aged less than 5 years should not clean or assist in cleaning bird cages (including chicken coops), fish tanks or other animal cages or enclosures.

Pregnant women

A pregnant woman's immune system is changed and complications such as miscarriage can occur with some zoonotic diseases.

Women who are pregnant or planning pregnancy should avoid contact with:

- Cat faeces, dirty cat litter or cat litter box. The parasite *Toxoplasma gondii* may be carried by cats, particularly kittens, and passed in their faeces. *T. gondii* infection (toxoplasmosis) acquired during pregnancy may cause miscarriage, stillbirth or birth defects.
- Rodents (rats, mice, guinea pigs), and their droppings. Rodents may carry lymphocytic choriomeningitis virus which although very rare, can cause birth defects in humans.

People who are immunosuppressed

A person is immunosuppressed when his or her immune system is less able to fight off infection than normal. Examples include people who have poorly controlled diabetes, long term kidney or liver disease, advanced HIV infection, organ transplant recipients, and people taking immunosuppressing drugs.

People who are immunosuppressed are at increased risk of developing many infections, including most zoonotic diseases.

Animals for display or contact in a public setting

Animal health and welfare

As the health, welfare and management of animals are linked to human health it is important that animals are healthy and well cared for.

Healthy animals require:

- accommodation and equipment designed to suit their physical and behavioural requirements
- protection from the elements
- space to stand, move around, stretch and rest
- appropriate feed and water
- suitable bedding
- protection from disease
- clean and hygienic conditions
- appropriate social structures and opportunities for socialisation.

To maintain an animal's health it is important to:

- establish regular contact with a veterinarian
- vaccinate animals as appropriate
- maintain a comprehensive parasite control program
- minimise overcrowding and stress to animals
- ensure adequate ventilation
- provide an adequate supply of fresh feed and water
- regularly clean cages or enclosures.





Animals that may pose a higher risk to human health

Animals carry germs that may cause illness in humans but some animals are considered higher risk than others.

The animals listed below are ones that people are more likely to view or have contact with as part of an exhibit, display or as visiting, or resident animals in childcare services or schools.

These animals are considered higher risk as they have been documented in zoonotic disease outbreaks as causing illness in people. They are also animals that shed the types of germs that can typically cause illness in people (such as *Salmonella*).

Be aware that whenever these animals are present it is especially important for people to take measures to protect their health.

Reptiles (turtles, snakes, lizards), amphibians (frogs, tadpoles, axolots) and fish (gold fish, tropical fish)

Reptiles, amphibians and fish, can shed *Salmonella* in their wastes. *Salmonella* can contaminate the animal and its environment (e.g. enclosure, tank water and pebbles). *Salmonella* is able to survive in the environment for long periods (up to months or years).

Poultry and other birds

Poultry frequently carry germs such as *Campylobacter* and *Salmonella*. Other germs may include influenza.

Numerous types of birds can be infected with *Chlamydophila* (formerly *Chlamydia*) *psittaci* (which causes psittacosis, also known as pigeon fanciers' disease) but it is more commonly found in birds of the parrot family.

Farm animals (sheep, lambs, cow, calves, etc.)

Farm animals carry germs such as Shiga toxin-producing *Escherichia coli*, *Campylobacter* and *Salmonella*, and young farm animals tend to shed more germs. Farm animals can also spread Q fever with the risk of spread highest during the birthing period.

Rodents (rats, mice, guinea pigs)

Rodents can transmit various illnesses such as *Campylobacter* infection, leptospirosis and toxoplasmosis. Rodents may carry lymphocytic choriomeningitis virus which can cause meningitis (inflammation of the brain) and, if exposed during pregnancy, birth defects in humans, although it is a very rare infection.



Unsuitable animals

The following animals should never be exhibited or displayed. Members of the public should not view or have contact with animals that are:

- unwell
- infested with insects, mites or internal parasites
- heavily pregnant placental animals, animals giving birth or animals which have recently given birth
- new born animals
 - › placental mammals (for example: cows, sheep, pigs, dogs) should not be publically exhibited until their umbilicus (navel or belly button) has dried and healed
 - › young animals of any species should not be shown or exhibited unless they are considered free of any signs of illness.

Persons responsible for the care of very young animals must have the appropriate knowledge, skills and experience to provide advice, and to care for newborn animals.

Animals that should not be handled or touched

Members of the public should never handle, touch or have contact with:

- bats, including flying foxes (due to risk of bats carrying Australian bat lyssavirus)
- venomous or toxin-producing animals and including venomous spiders, insects, reptiles, amphibians or fish
- hostile, aggressive, dangerous or unpredictable animals.

Sick, injured, diseased or stressed animals

Sick, injured, diseased or stressed animals are known to shed more germs and can pose an increased risk to human health, as well as to other animals. Prompt attention is required for these animals including:

- removing or isolating them so they pose no risk to people or to other animals
- seeking immediate veterinary care
- rotating and resting exhibited animals to minimise stress from over handling (such as at an agricultural fair or show).

Animal handling

People handling animals should be trained in correct animal handling techniques. Incorrect handling of animals can result in injury to the person, other people, the animal or other animals.

Pest control

Rats, mice, flies, mosquitoes, cockroaches and other insects can transmit diseases. Pest infestation should be prevented and managed by the implementation of an integrated pest management strategy which may include:

- regular inspection for pest activity
- appropriate storage of all food to reduce the risk of pests
- adequate disposal of all waste including food scraps
- vermin proofing of all buildings
- insecticide use or baiting programs.

Food and beverage for human consumption

In an animal contact environment, animals carry germs that can potentially contaminate food or beverages intended for human consumption. The following key principles promote food safety in environments where animals are present.

Food and beverage consumption

Eating, drinking or bringing food near animals or in an animal contact area should be discouraged. Food and beverages intended for human consumption should be consumed away from animals and animal contact areas.

In South Australia, a few select conservation or wildlife parks provide open air picnic facilities, away from animal enclosures but in areas where some animals are permitted to roam. It is important for animal exhibitors to keep these areas clean and to advise visitors to wash and dry their hands before eating or drinking.

Storage, preparation, service or sale of food and beverage

Food and beverage storage, preparation, service or sale areas should ideally be located well away and segregated from animals and animal contact areas, and where there might be any risk of contamination, for example via dust or aerosols.

Specifically, areas in which food is made, manufactured, produced, collected, extracted, processed, stored, transported, delivered, prepared, treated, preserved, packed, cooked, thawed, served, sold or displayed must be separate from animal areas.



Food Act 2001 (SA) Part 1 Section 6

Food business means a business, enterprise or activity (other than a business, enterprise or activity that is primary food production) that involves:

- (a) the handling of food intended for sale; or
- (b) the sale of food,

regardless of whether the business, enterprise or activity concerned is of a commercial, charitable or community nature or whether it involves the handling or sale of food on one occasion only.

The Australia New Zealand Food Standards Code includes the following:

Food Safety Practices and General Requirements (Australia Only), Standard 3.2.2 Clause 24 states, that a food business must not permit live animals in areas in which food is handled, other than seafood or other fish or shellfish.

Hand washing facilities

In venues, premises or facilities where animals are present, hand washing facilities should be provided in, or in close proximity to, food preparation and service areas for people to wash and dry their hands before eating or drinking.

Signs advising people to wash and dry their hands before eating or drinking should be erected in food and beverage preparation, service or sale areas.

Food handlers

As per the requirements of the Australia New Zealand Food Standards Code food handlers must have access to dedicated hand washing facilities to wash their hands.



Animal feed and water

Animal feed and water are not suitable for human consumption and should never be ingested. Animal feed should be stored appropriately and people should wash and dry their hands after feeding animals, having contact with animal feed, or touching containers that store their feed.

Feeding animals

- People should feed animals with feed meant for consumption by animals.
- People should never place themselves between an animal and its feed.
- Animal feed containers should only hold feed intended for animals.

Visitors feeding animals at an exhibit

- Animal feed should be preferably supplied by the animal exhibitor and clearly labelled "for animal use only".
- Animal feed should not be provided to members of the public in containers associated with human food (such as ice cream or waffle cones).
- Visitors should not handle potentially contaminated animal feed (feeding carcasses to snakes for example).
- After feeding animals at an animal exhibit visitors should dispose of all left-over animal feed.
- Animal feed containers should either be disposed of or, if appropriate, cleaned by animal exhibitors for re-use.



Storage of animal feed

- Animal feed, including bulk feed such as grains or pellets, should be stored in pest proof and waterproof containers with close fitting lids.
- Containers used for the storage of animal feed and water should be labelled clearly, cleaned regularly, and used for that purpose only.
- Animal feed such as baled hay or lucerne should be bagged or packaged and stored above the floor.
- Wet feed (for example, meat, milk, fruits and vegetables) should be stored in suitable containers in a refrigerator or freezer not used to store food for human consumption.
- Left-over or discarded animal feed should be disposed of promptly and appropriately via general waste.
- Animal feed or feed containers should not be stored or kept in areas used for the storage or preparation of food for human consumption.

Cleaning animal feed bowls and utensils

Washing facilities used to clean animal feed trays, dishes and utensils should be separate from facilities used for hand washing, or for the preparation, storage and cleaning of utensils and food intended for human consumption.

People should wash and dry their hands after feeding animals or touching an animal's feed container, bowl or utensils.

Other considerations

Vaccinations for people who work with animals

The risk of zoonotic disease for people who work with animals can vary and is based on the types of animals handled.

People who work with animals should seek medical advice about appropriate vaccinations.

Some zoonotic diseases may be preventable through vaccination e.g. Australian bat lyssavirus infection (rabies vaccine), Q fever (Q fever vaccine) and influenza (seasonal influenza vaccine).

People who work with animals should also ensure they are up to date with tetanus vaccination.

Vaccinations for people in childcare services, schools or health care facilities

Adults and children in facilities where animals are present should ensure that they are up to date with routine recommended vaccinations, and in particular tetanus vaccination.

People with allergies to animals

Some people are allergic to animals or their products (i.e. animal saliva, sweat, hair, feathers, urine or dead skin flakes) and exposure may trigger an allergic reaction or asthma. People should be prepared for such events and take appropriate measures including obtaining medical assistance if required.

First aid

Venues, premises or facilities where animals are displayed should have a suitable first aid kit in case of injury or illness and available personnel who are appropriately trained in first aid.

Illness after contact with animals

If a person becomes ill after contact with animals it is advisable for them to visit a doctor and to explain there has been recent contact with animals.

Sick people and contact with animals

Transmission of diseases can be a two way process. Diseases can be transmitted from animals to people and they can be transmitted by sick people to animals.

People who are unwell (e.g. gastroenteritis, cold, influenza) should avoid contact with animals as they can pass these infections on to them. Once infected, animals can become a risk to other people and to other animals.

Avoiding contact with animals when someone is unwell protects both animal and human health.

Assistance and law enforcement animals

Guide, hearing, or other service and law enforcement animals should be under the control of a person familiar with the specific animal and in accordance with recommendations of the sponsoring organisations.

The *Disability Discrimination Act 1992* (Cth) prevents a person from refusing a person entry to premises because the person has an assistance animal.

It is lawful to refuse access to premises to a person who is accompanied by an animal if:

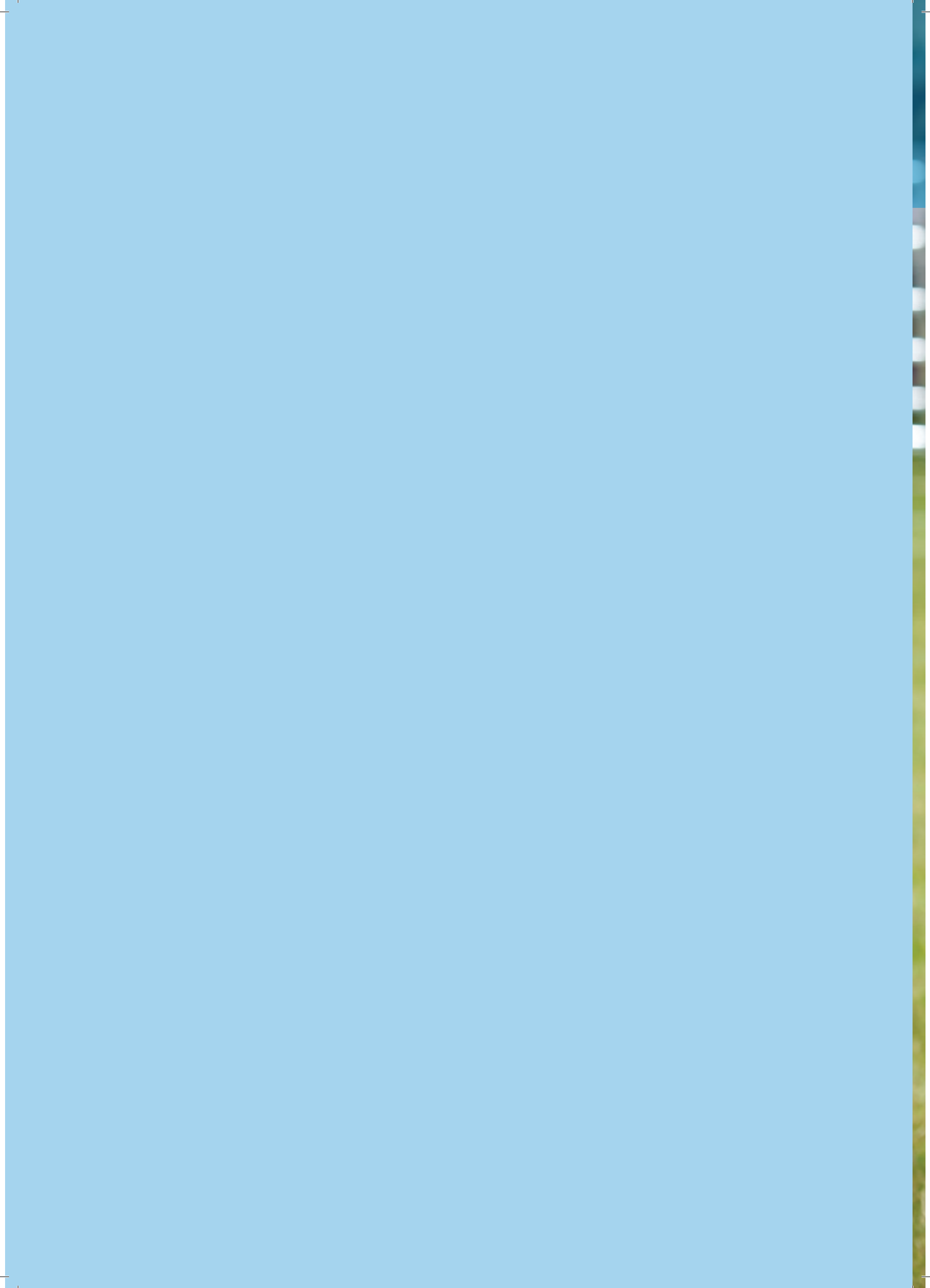
- the person seeking entry with the animal is unable to provide evidence, upon request, that the animal is an assistance animal or is trained to meet standards of hygiene and behaviour acceptable for a public place;
- the animal presents with signs of an infectious disease; or
- the behaviour of the animal may endanger the health of people or other animals.

Print your own signs, poster, brochure or checklist

Visit www.sahealth.sa.gov.au/ProtectingPublicHealth to download and print:

- Hand washing signs
- 5 Steps to Clean Hands (hand washing poster)
- Contact with animals and your health: a guide for visitors
- Visiting an animal exhibit: a checklist for childcare services and schools
- Keeping children healthy around animals (a learning resource for children).





Additional information for animal exhibitors



Structural design of close contact animal exhibits

When setting up an animal exhibit for close contact by members of the public, consideration should be given to structural designs that aim to reduce the risk of zoonotic disease transmission by creating an environment that supports activities such as hand washing.

The following is considered best practice and applies to animal exhibits where there will be close contact with animals such as a permanent, mobile or temporary petting zoo in a public setting; whether within a zoo; agricultural fair, show or field day; shopping centre or expo.

This section (structural design of close contact animal exhibits) does not apply to areas where animals are viewed behind an enclosure, at a safe distance, and without any close or physical contact by members of the public, such as at some zoos.

Preferable design for close contact animal exhibits

Sound exhibit design includes designated animal areas, non-animal areas, and transition areas between the two.

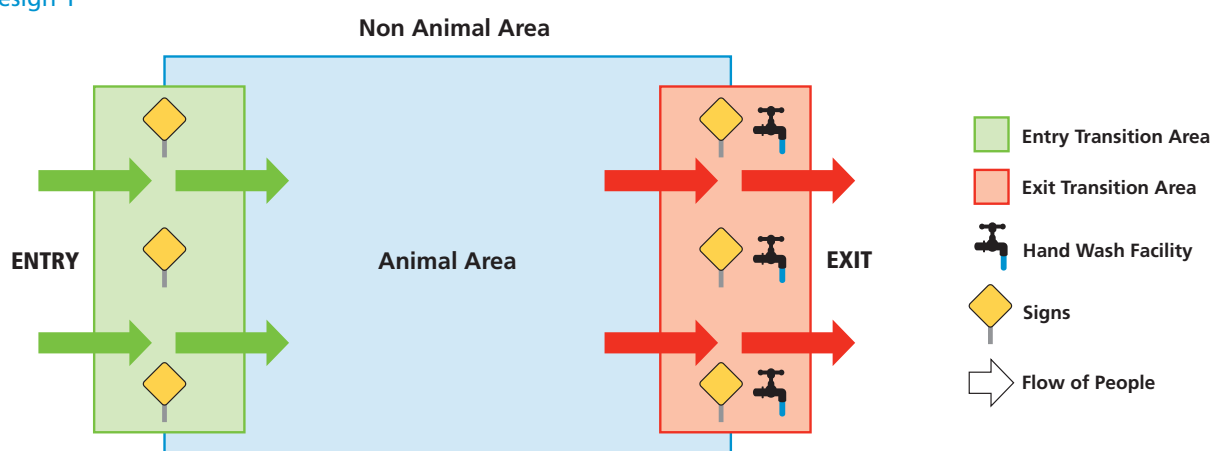
Hand washing stations and signage encouraging people to wash and dry their hands are located at the animal area exits.

Effective design should also ensure the removal of animal waste through areas not frequented by visitors.

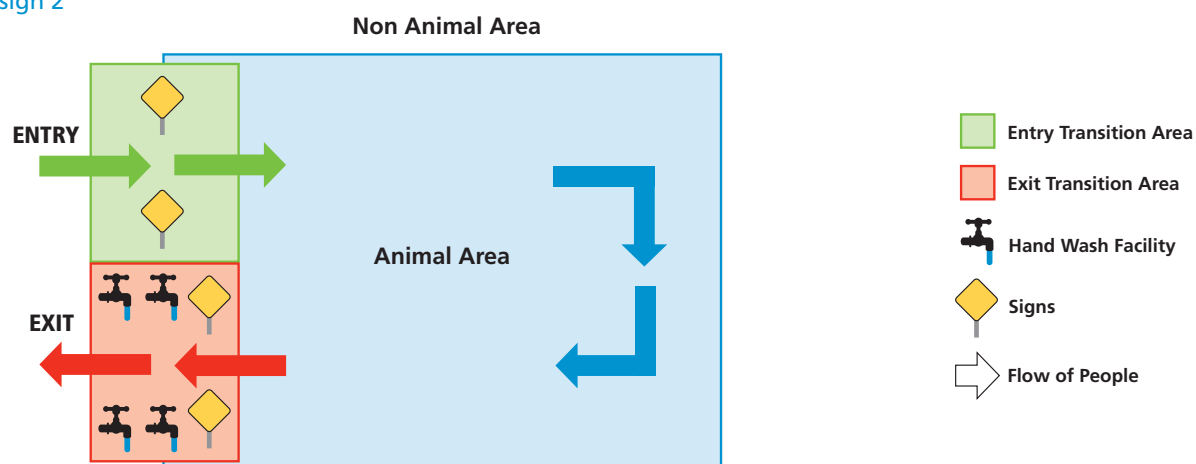
Below are two examples of suitable structural designs for animal exhibits:

Visitors should enter and leave an animal exhibit at a clearly signed designated entry and exit point. Additionally a one directional flow of visitors (Design 1) or clear intended flow of traffic through the exhibit (Design 2) is preferred.

Design 1



Design 2



Acknowledgment: designs 1 and 2 adapted from National Association of State Public Health Veterinarians, Inc. (NASPHV), Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011, Recommendations and Reports, *Morbidity and Mortality Weekly Report (MMWR)*: 2011: 60 (RR04):1-24.

Animal areas

Animal areas are designated places where only healthy and suitable animals for public display are exhibited. It is important to reduce the risk of zoonotic diseases by:

- erecting barriers to prevent contact with animals and their environments with the exception of specified animal interaction areas
- not allowing food and beverages intended for human consumption to be stored, prepared, served, sold or consumed near animals or in an animal contact area
- in the case of temporary or mobile animal exhibits, the suitable placement of the exhibit and proposed waste management plans should be discussed with event organisers or premises owners, and if necessary an environmental health officer from the local council.



Transition areas

Ideally visitors should pass through a transition area in order to enter or exit an animal area or enclosure. These areas should be:

- located separately and clearly marked as an entrance or exit point
- a one way walk through area (that is, visitors make their way from the entrance transition area through the animal area and toward the exit transition area in a single direction).

Entrance transition areas

Information and advice can be provided to visitors at an entrance transition area (via signs, leaflets or staff) indicating to members of the public they will be entering an animal area and that it is recommended they:

- Do not eat, drink or smoke in animal areas.
- Supervise children and discourage them from putting their fingers or hands in their mouth.
- Avoid using dummies, bottles or children's spill proof cups in animal areas. If they do, and should these items fall to the ground or come into contact with animals or their enclosures, advise caregivers to clean items appropriately before returning them to the child. Items should be cleaned by sterilisation for babies 0-6 months; and for 7 months upwards, use detergent and warm water.
- Consider storing prams or strollers in the entry transition area as wheels may become contaminated with animal faeces or urine if they are taken through an animal contact area.

Exit transition areas

Hand washing facilities are located at an exit transition area and include:

- signs and/or staff advising visitors to wash and dry their hands regardless of whether animals were touched (it is appreciated that exhibitor staff can only advise and not force visitors to wash their hands)
- signs illustrating how to wash and dry hands properly with soap and running water
- hand washing facilities in sufficient quantities for all visitors and accessible to children, and people with disabilities
- adequate stocks of soap (preferably liquid) and single use disposable paper towel which are replenished as required.

Exit transition areas should be well maintained. Waste should be removed regularly and spills cleaned.

Non-animal areas

Non-animal areas are places where no animals are permitted.

Access (entry) and egress (exit) of premises

When designing an animal exhibit, consideration should be given to the provision of safe entry and exit for everyone and especially in the event of a fire or other emergency.

Hand washing facilities at an animal exhibit

Whether an animal exhibit is permanent, mobile or temporary, it is critical to plan and organise suitable hand washing facilities that are:

- adequately signed to direct visitors to hand washing facilities
- appropriately located for visitors leaving animal areas
- available in sufficient supply to accommodate all visitors
- within easy reach for children and accessible for people with disabilities
- well maintained, including routine cleaning and restocking, to ensure an adequate supply of soap (preferably liquid) and single-use disposable paper towels
- available to visitors prior to eating or drinking on the premises in non-animal areas.

Hand washing facilities must provide:

- running water from a tap (using water in a basin or a wash bowl is not acceptable)
- soap (preferably liquid)
- hand drying facilities such as single-use disposable paper towels as the preferred option or air dryer.

Washing hands with soap (preferably liquid) and running water, and drying hands with a single use disposable paper towel (preferred option) or air dryer remains the best way of reducing risk of illness after contact with animals.



Leasing, hiring or constructing hand washing facilities

Where permanent hand washing facilities are not available or where they are located at a distance inconvenient for visitors needing to wash and dry their hands, it will be necessary to make available temporary hand washing facilities, by either leasing, hiring or constructing them.

While professionally designed and built hand washing stations are preferable, a hand washing station can be constructed using a variety of designs. Regardless of design, there are a number of requirements that should be met including:

- Water must be flowing from a tap. Do not allow users to wash their hands in water collected in basins or wash bowls.
- Wastewater should be disposed of responsibly and not allowed to spill or cause mess at hand washing stations.

Wastewater disposal

Wastewater from hand washing facilities should be connected to an approved drainage scheme.

If wastewater cannot be connected to an approved drainage scheme then it must be stored in a suitably sized storage tank and must be disposed of within 24 hours.

Wastewater must not be disposed of on any above ground surface, such as gardens, paths or storm water. It must be disposed of straight to sewer e.g. cleaners sink, overflow relief gully or toilet bowl.

If you are unsure about how best to dispose of your wastewater contact an environmental health officer at the local council or SA Health, to discuss options for an appropriate waste disposal system.

Emergency hand cleaning

Although the use of moist hand wipes and an alcohol-based hand sanitiser is appropriate in emergency situations where running water is not available, it is not a substitute for proper hand washing. Alcohol-based hand sanitisers kill the majority of germs on hands, however they may not be as effective against some of the germs found within an animal contact environment. The effectiveness of alcohol-based hand sanitisers is also reduced when hands are visibly soiled or dirty.

In an emergency, and where soap and running water are not available (e.g. mains water supply has been disrupted) the following should be provided:

- moist hand wipes
- an alcohol-based hand sanitiser (at least 70% alcohol)
- waste containers for the appropriate disposal of hand wipes.

Parents or guardians should supervise and assist children apply and use alcohol-based hand sanitisers correctly.

People should be advised to wash their hands with soap (preferably liquid) and running water, and to dry them using a single use disposable paper towel (preferred option) or air dryer, as soon as possible, after being in an animal area, especially before preparing food, eating or drinking.

How to use moist hand wipes and alcohol-based hand sanitiser:

- use a moist hand wipe to remove organic matter and dirt
- allow hands to dry before applying an alcohol-based hand sanitiser
- use an adequate amount of alcohol-based hand sanitiser to cover the entire surface of hands, including the finger tips
- wash and dry hands with soap and running water as soon as possible.

Cleaning animal exhibits

To reduce the risk of zoonotic diseases, animal enclosures and their surrounds should be kept clean. A routine should be established for regular inspection and cleaning of all areas where animals are kept. In particular:

- keep walkways clean and free of waste
- regularly remove waste from enclosures, at least daily
- regularly, preferably daily, thoroughly clean animal cages or enclosures (where practical) and all frequently touched surfaces such as railings, floors and gates
- regularly clean hand washing facilities, including taps, hand basins and their surrounds
- clean the entire animal area when the animal exhibit has ceased operating (this is especially important for mobile or temporary exhibits)
- where animals have been exhibited on surfaces that are not possible to clean (such as lawn, dirt, sand, woodchip, mulch) these areas should not be accessed by members of the public for a period of time.

It is desirable to keep a log of any cleaning undertaken. Cleaning chemicals and materials should be chosen and used on the basis of their suitability, safety and effectiveness and used only in accordance with the manufacturer's instructions.

Waste removal and cleaning frequency will depend on factors such as the volume of waste generated, the number of visitors, and the duration of operation of the exhibit. This should be done at least daily but in some cases should be more frequent.

Upon completion of cleaning of areas it is important to always wash hands and any exposed skin with soap (preferably liquid) and running water, and to dry hands with a single use disposable paper towel (preferred option) or air dryer.



Waste management

Waste must be stored and disposed of regularly in a manner which prevents or minimises harm to public health, in accordance with the South Australian Public Health (General) Regulations 2011 under the *South Australian Public Health Act 2011*.

Animal waste, feed waste, and dead animals should be disposed of promptly and appropriately in accordance with the requirements of the relevant local council or the Environment Protection Authority South Australia (EPA).

Waste removal should not contaminate transition and non-animal areas. Risk of spillage should be minimised by covering waste, bagging waste, and not overfilling waste bins. Spills should be appropriately cleaned as soon as possible.

To prevent cross contamination, waste and tools used for its removal should be kept in an area not accessible by members of the public and designated only for that purpose. In some circumstances (especially where large quantities of waste are generated) the services of a licensed waste management company may be required.

Odour and dust suppression

Keeping premises clean will help to minimise the generation of odours, which, when not properly controlled, can become offensive.

Dust can not only be a nuisance but it can transmit disease. The generation of dust can be an issue in areas frequented by animals. All reasonable efforts should be made to maintain cleanliness, minimise the generation of dust, and to suppress any generated dust to avoid contamination of public or adjacent areas, including:

- animal areas and enclosures
- non-animal areas
- walkways
- roads.

Dust can be suppressed in many different ways and the appropriate method should be determined by animal exhibitors. A local council environmental health officer may provide advice on appropriate ways to minimise dust.



Signage and visitor information at an animal exhibit

Appropriate signage should be erected by an animal exhibitor to inform visitors of the possible health risks associated with animal contact and the precautions (like washing and drying hands) they can take to minimise their health risk. Similarly, signage can be used to advise visitors how to behave around animals so they are not harmed.

Location of signs

Visitor information signs should be erected in locations that allow for maximum exposure to visitors such as the entrance of a premises, ticket office, designated eating area, entrance and exit of all animal areas.

Hand washing signs

Hand washing signs should be placed in clear and obvious locations such as the exit of an animal exhibit, near hand washing facilities and in areas where visitors prepare, buy, or consume food and drink.

Directional signs

Directional signs instruct visitors about where they can go to wash and dry their hands. If required, signs directing visitors to the location of hand washing facilities should be erected.

Visitor information

Visitors should be provided with information outlining recommended steps to reduce their risk of illness, and behaviours expected whilst visiting an animal exhibit.

In the case of an advanced booking an information leaflet can be provided along with the booking confirmation.

Information leaflets can also be made available to visitors on arrival.



Additional information for pet shops



Animals in pet shops

Pet shops keep a variety of animals in cages. If pet shop premises are not well managed or kept clean, it can lead to the spread of disease or the creation of nuisance and annoyance to neighbours.

In addition to these Guidelines, owners of pet shops should also consult the South Australian Department of Environment, Water and Natural Resources, South Australian Code of Practice for the Care Management of Animals in the Pet Trade, Second Edition, 1999.

Responsibilities of management and staff

Any person who works with animals should be aware of the risk of zoonotic diseases and the measures they should take to minimise the risk. These measures include:

- maintaining the premises in a high standard of cleanliness
- promoting hand washing by providing signage advising staff and visitors to wash their hands with soap (preferably liquid) and running water and to dry them with a single use disposable paper towel (preferred option) or air dryer after contact with animals.

If you are planning to open a pet shop premises, it is recommended that you discuss business set-up with your local council planning officer and local council environmental health officer.

Hand washing

It is important that hand washing facilities are made available to, and are used routinely by, staff after contact with animals, their cages, their equipment, waste, feed, or feed containers, and when moving from one enclosure to another.

Visitors should be encouraged to wash and dry their hands after having contact with animals or their environment. If hand washing facilities are not available for use by visitors, management and staff should provide moist hand wipes and alcohol-based hand sanitisers for use as an interim measure, and visitors should be advised to wash their hands with soap and running water at the nearest available hand washing facilities after contact with animals.

Keeping premises clean

Animal cages, containers, pens and pet shop premises should be regularly cleaned and inspected for cleanliness to minimise zoonotic disease transmission and ensure animal wellbeing.

Animal cages, their surrounds and equipment should be cleaned:

- as frequently as is necessary and at least once per week
- prior to the introduction of a replacement animal
- when moving animals from one enclosure to another
- when an animal is unwell or an infectious disease is suspected.

Animal cages should be:

- designed to allow easy cleaning and the removal of waste, and to prevent excessive contact with or handling of animals by the public
- constructed of strong impervious materials that can be thoroughly cleaned, and be separated by a space and/or solid walls.



Odour control

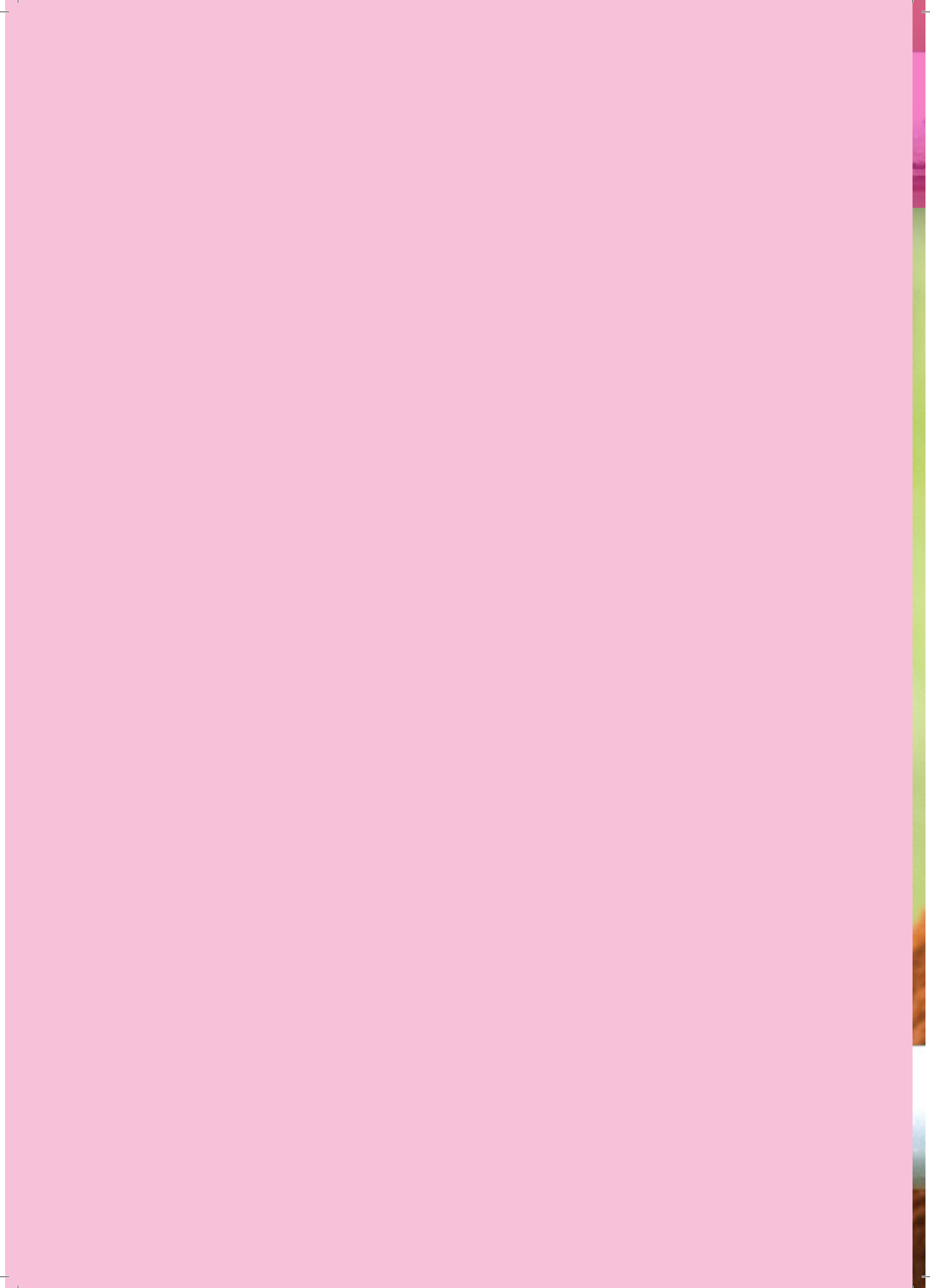
Keeping premises clean will help to minimise the generation of odours, which, when not properly controlled, can become offensive.

Removal and disposal of waste

Animal waste is to be regularly collected from cages and wrapped or sealed in a container for disposal. The storage and disposal should be tailored to suit the type and number of animals housed at the premises.

Cats must be provided with litter trays that are cleaned at least once daily. Frequent disposal is recommended to prevent offensive odours and the attraction and breeding of flies.

Large quantities of animal waste should be disposed of frequently, and in some circumstances the services of a licensed waste management company may be required.



Additional information for childcare services and schools



Visiting an animal exhibit

An important part of a child's learning and development involves interacting with animals and the natural world. Whilst children can benefit from a visit to an animal exhibit, such as a zoo, petting zoo, farm or wildlife park, it is important to be aware that animals can carry germs that are potentially harmful to human health.

For those attending an animal exhibit (adults and children), adopting a few simple measures can maintain health and wellbeing and reduce the risk of illness or injury.

Organisers are advised to allow enough time, when organising a visit, to follow the advice provided in these Guidelines.

People who need to take extra care

Some people are at greater risk of acquiring a zoonotic disease or may suffer more severe symptoms or both. These include children aged less than five years, pregnant women and people who are immunosuppressed.

Further information can be found in the '**Essential Considerations: People who need to take extra care**' section of this Guideline.

Before visiting

- Seek parent or guardian consent. Document and address any concerns (e.g. fear of certain animals).
- Be aware of any additional protection needed for children who have health conditions such as immunosuppression, allergies, or asthma. Ensure individual health management or care plans, including treatment protocols and required medications will be available during the visit.

Seek information about

- What animals will be on display?
- Which animals can be touched?
- What hand washing facilities are available and are they accessible for all, including small children, and people with disabilities?
- What first aid facilities are available?





Educate adults

Provide information about:

- zoonotic disease and why it's important to adopt precautions to reduce the risk of injury or illness in themselves and children
- duty of care obligations and their role in assisting children reduce the risk of injury and zoonotic disease
- the importance of washing hands with soap (preferably liquid) and running water, and drying hands with a single use disposable paper towel (preferred option) or air dryer, as a way of reducing the risk of zoonotic disease
- assisting or supervising children to wash and dry their hands after being in an animal area (even if animals were not touched)
- discouraging children from having hand to mouth contact while visiting an animal exhibit and before washing and drying their hands
- supporting children to treat animals respectfully (in order to avoid animal bites or scratches)
- modelling the same behaviours at the animal exhibit, as expected of children in their care.

Agricultural schools

Students should not be exposed to placental animals that are heavily pregnant, birthing or newborn. However this might not always apply to people vaccinated against Q fever (staff and students) attending agricultural schools, and where under appropriate supervision such exposure might form part of the curriculum.

In an agricultural learning environment Q fever vaccination should be considered for agricultural school staff and students (aged ≥ 15 years).



Educate children

Teach children why it's important to wash and dry their hands after being in an animal environment. Advise them that they should wash their hands with soap (preferably liquid) and running water, and dry them with a single use disposable paper towel (preferred option) or air dryer:

- **after** contact with animals (whether animals were touched or not), their enclosures, their waste, their feed, or their feed containers (remember that any part of an animal or its environment might be contaminated); **and**
- **before** eating or drinking, and after going to the toilet.

Educate children about the things they can do to stay healthy around animals including:

- Avoiding putting fingers, hands or objects in or near the mouth, or to touch eyes or nose while in an animal area, and before washing hands.
- Avoiding bringing animals close to or near their mouth (e.g. do not kiss the animals).
- Avoid sitting, lying or playing on the ground in an animal contact area.
- Avoiding wiping hands on clothing after touching animals or their environment.
- Avoiding handling animal feed unless deemed appropriate to do so by both the animal exhibitor, childcare service provider or teacher (and to wash and dry their hands after doing so).
- To not eat an animal's feed or consume an animal's drinking water; and to never get in between an animal and their feed.
- To eat or drink away from the animals or in a designated food service area; and to not consume food or beverage around animals.
- To treat animals with respect and consideration e.g. never torment, hit, poke or chase an animal. Respectful behaviour towards animals reduces the risk of injury and disease, e.g. through accidental scratching or biting.
- To always behave in a calm, quiet manner, to talk quietly, and to avoid making loud noises or sudden movements.

Animals in childcare services and schools

Some educational environments, such as childcare services and schools, host, house or display animals. Animals are valuable in a care or learning environment as they teach children about the life cycle and the natural world.

An animal in a care or learning environment is a wondrous thing, but some simple measures are required to reduce the risk of zoonotic disease.

People who need to take extra care

Some people are at greater risk of acquiring a zoonotic disease or may suffer more severe symptoms or both. These include children aged less than 5 years, pregnant women, and people who are immunosuppressed.

Further information can be found in the “**Essential Considerations: People who need to take extra care**” section of this Guideline.

Hand washing

Hand washing with soap and running water remains the key to minimising the risk of zoonotic disease in a care or learning environment, and where educators, parents, caregivers, guardians, volunteers, community members, children and other family members come into contact with animals, their environments or their waste.

It is important to always wash and dry hands after being in an animal area (whether animals were touched or not), after touching animals, animal products, animal feed, animal waste, or an animal's environment, and before eating or drinking.



image courtesy SATC

Supervision of children

Children should be supervised when they are in contact with animals. This is especially true for children under the age of five years who should be supervised to reduce their risk of:

- Placing contaminated fingers or hands in their mouth (e.g. after touching an animal, their environment or their wastes or after being licked by an animal).
- Putting their face close to or kissing an animal.
- Sitting, lying or playing on animal bedding or where animals are housed.
- Being bitten or scratched by an animal. Ensure children treat animals respectfully (respectful behaviour reduces risk of injury and disease, e.g. through accidental scratching or biting).

Parent or guardian consent

Parents or guardians should be informed of the benefits and potential risks associated with having animals in their child's care or learning environment.

Consult and take into account any concerns, parents or guardians might have in relation to the presence of animals in their child's childcare service or school.

Identify and document any special considerations needed for children who are immunosuppressed, have allergies to animals, or who have asthma. Ensure individual health management or care plans, including treatment protocols and required medications are in place.





Animal areas

Animals in a care or learning environment should:

- be situated away from food preparation and eating areas
- be housed in suitable cages or enclosures and where necessary be placed under appropriate restraint
- not be allowed in sandpits
- where possible, animals and their cages or enclosures should be restricted to a designated area or areas.

Regularly monitor communal areas, and clean if soiled with animal waste (where possible). Immediately wash hands with soap (preferably liquid) and running water then dry using a single use disposable paper towel (preferred option) or air dryer.

Visiting animals

In a care or learning environment, visiting animals such as show and tell, animal rescue and pet hire, need to be healthy and deemed appropriate for viewing or contact by children and adults at that facility or premises (for example, some animals such as reptiles and amphibians are considered higher risk for children under five years of age).

People should not drink or consume food around animals, and visiting animals should not be displayed in or near human food storage or preparation areas.

After the visit, areas that have come into contact with animals should be cleaned.

Children and adults should wash their hands with soap (preferably liquid) and running water, and dry them with a single use disposable paper towel (preferred option) or air dryer immediately after viewing or having contact with animals, and before eating or drinking.

Cold storage of animal feed

Animal feed should be stored in a different fridge from that used to refrigerate foods for human consumption.

If this is not possible then animal feed must be stored in a separate container from that used for human food. It must be covered, sealed well and clearly labelled.

Collecting and handling eggs

Raising chickens and collecting eggs in a care or learning environment is becoming more commonplace. Eggs are nutritious and form part of a healthy diet. Most eggs are safe but cracked and dirty eggs can be a source of germs such as *Salmonella*.

Key points to consider when collecting eggs:

- Cracked and excessively dirty eggs must be disposed of, not stored or brought into food preparation areas (dirty eggs may also cause cross contamination within the food preparation area).
- Egg shells that are cracked (including fine hairline cracks) can allow germs to enter and grow inside the egg.
- As eggshells are porous, excessively dirty eggs can allow germs to move from the dirt and through the shell, and into the egg itself.
- Do not wash dirty eggs. Eggshells become more porous when wet, making it easier for germs from dirt or feathers on the shell to get inside the egg.
- Dirty (but not excessively dirty) un-cracked eggs can be cleaned with a dry cloth, and the cloth disposed of once the egg has been cleaned.
- Keep clean, un-cracked eggs separate from dirty or cracked eggs.
- At a minimum, eggs should be collected twice a day on hot days and once a day in cooler weather.
- Once eggs are collected they should be refrigerated.

Key points to consider when handling eggs in the kitchen as food:

- cracked or dirty eggs have been discarded prior to coming into the kitchen
- dirty (but not excessively dirty) eggs have been dry cleaned outside before bringing them inside
- do not store eggs in the kitchen in the same container used to collect eggs
- keep eggs away from ready to eat foods, ideally store eggs in the lower levels of the fridge
- ensure cross contamination is minimised when using these eggs e.g. sanitise benches/equipment, discard egg shells immediately
- ensure eggs are cooked before being eaten.

After collecting, touching or handling eggs it is important to always wash hands with soap (preferably liquid) and running water, and to dry hands using a single use disposable paper towel (preferred option) or air dryer.



Cleaning

All areas where animals and animal products have been present should be cleaned regularly.

Children aged less than five years should not be allowed to clean animal areas and children over the age of five years must be supervised by an adult.

Upon completion of cleaning it is important to always wash hands and any exposed skin with soap (preferably liquid) and running water, and to dry hands with a single use disposable paper towel (preferred option) or air dryer.

When cleaning:

- do not clean animal cages, enclosures, or aquaria in sinks or other areas used to prepare, serve or consume food or drink intended for human consumption
- after cleaning animal cages, enclosures or aquaria, wash these areas thoroughly with detergent and water
- dispose of animal faeces and litter daily, or more often if necessary, by placing it in a plastic bag in the general waste
- if cleaning bird cages use a wet cleaning method to avoid the creation of dust, by using a damp cloth
- use disposable gloves when handling animal faeces, emptying litter trays or cleaning cages, enclosures and aquaria.

Correct use of single use disposable gloves

When using single use disposable gloves it is important to avoid cross contamination by:

- using one pair of gloves for each activity (do not reuse them)
- removing and disposing of gloves after use
- removing gloves by peeling them back from wrists, turning them inside out as you go, and not letting skin touch the outer contaminated surface of the gloves
- always washing hands with soap and running water after gloves have been removed.

Quick reference guide for childcare services and schools

Principles

- Contact with animals is a valuable learning experience.
- Animals can carry germs that are potentially harmful to human health.
- Simple measures can reduce risk of illness and maintain health.
- Everyone should take measures to protect their health but some people are at greater risk of acquiring a zoonotic disease or may suffer more severe symptoms or both. Children less than five years, pregnant women, and people who are immunosuppressed need to take extra care.
- Seek parent or guardian consent (i.e. if visiting an animal exhibit or if having animals in their child's care or learning environment).
- Identify and document any special considerations needed for children who are immunosuppressed, have allergies to animals, or who have asthma. Ensure individual health management or care plans, including treatment protocols and required medications are in place.

Strategies (children and adults)

- Wash hands with soap (preferably liquid) and running water, and dry hands with a single use disposable paper towel (preferred option) or air dryer after being in an animal contact area (regardless of whether animals were touched) and before eating or drinking.
- Avoid hand to mouth contact in an animal contact area, for example, do not kiss or bring animals close to the face, avoid putting fingers or hands in or near the mouth until after hands have been washed.
- Avoid wiping hands on clothes.
- Avoid eating or drinking around animals or while in an animal contact area.
- Animals should be healthy, free of disease and appropriate for those who attend the facility or premises (that is, when visiting an animal exhibit or if hosting or housing animals in a care or learning environment).
- Keep animal areas, cages or enclosures in a care or learning environment clean and free of waste (children under five years of age should not clean an animal's enclosure, cage or aquarium).
- Always treat animals respectfully.
- People who are sick or unwell with an infectious illness should avoid contact with animals.



Additional information for health care facilities



Animals in health care facilities

Animals may be present in long term or non-acute health care facilities such as aged or residential care facilities, and in short term, or acute health care settings, such as rehabilitation centres and hospitals.

In health care facilities animals can be part of programmed activities, targeted therapy, service animals, pets or companions. Examples include:

- animal assisted activity – a casual meet and greet activity where animals and specially trained volunteers or professional handlers visit patients and their families at the bedside or in common areas
- animal assisted therapy – tailored individual therapy under professional supervision with an animal trained for the role
- dogs trained to provide support to people with vision impairment (guide dogs), hearing impairment (hearing dogs) or other physical disability (assistance dogs)
- facility pets – animals in permanent residence within a non-acute care facility
- personal pet visitation – the patient's own pet visiting them whilst in a healthcare facility.

While animals can benefit residents, patients and staff by providing comfort, entertainment, therapeutic care and a sense of wellbeing, it is important to know how to minimise the risk of injury, allergy or infections from animals in a health care environment.

Advice

The use of animals in a health care facility should be made in consultation with clinical management (such as the Director of Nursing), local infection control staff (where available) or SA Health's Communicable Disease Control Branch ph. 1300 232 272.

Seek advice about:

- What animals are suitable?
- Where animals can or cannot roam?
- Acceptable contact between the animal, patients or residents.
- Where animal feed and water can be stored?
- Environmental cleaning before and after an animal visit.
- Infection control requirements for staff, patients, and visitors during, and after an animal visit.

Consent

Approvals for animals in a health care facility should be made with the consent of staff, patients, residents and their families.

It is important to take into account any special considerations needed for those who are immunosuppressed, have allergies to animals or who have asthma.

People who need to take extra care

Everyone should take measures to protect their health around animals but some people should take extra care as they are at greater risk of acquiring a zoonotic disease or may suffer more severe symptoms or both. These include children aged less than five years, pregnant women and people who are immunosuppressed.

Further information can be found in the '**Essential Considerations: People who need to take extra care**' section of this Guideline.



Suitable animals

Animals in health care facilities should be healthy and well behaved, and restricted to domestic companion animals suited as household pets.

Animals should be adults, that is, cats should be at least one year of age and dogs should be at least one year of age but ideally two years of age or older.

Animals should have a temperament assessment to evaluate their behaviour under conditions they might encounter while in a healthcare facility, such as reactions towards strangers, loud noises, crowded situations and human contact.

Ideally, animals and their handlers will have undergone appropriate training, for example, dogs should have undergone and passed a formally recognised obedience training program with their handler.

Animal handlers should be encouraged to undergo further training that includes information on zoonoses, infection control practices, how to recognise parasitic infections and reading an animal's body language to identify sign of stress, discomfort, fear and aggression.

Animals should not be allowed from animal shelters or similar facilities and should be in a permanent home for at least 6 months prior to any visit to a health care facility.

It is not recommended to feed any raw or dehydrated (but otherwise raw) foods, chews or treats of animal origin to animals that reside or visit a health care setting.

Health screening of animals

A veterinarian should provide appropriate vaccinations and flea, tick, and parasite control programs. Documentary evidence provided by a veterinarian should be made available for each animal.

Animals with fleas, ticks or mange should not enter health care facilities until cleared to return by a veterinarian after completion of appropriate treatment.

Routine screening for specific organisms such as group A streptococci, *Clostridium difficile*, vancomycin-resistant enterococci and methicillin-resistant *Staphylococcus aureus* (MRSA) is not recommended. Although animals have been reported as being carriers of some of these organisms, adherence to good infection control practices should be sufficient to prevent transmission of these organisms.

Managing contact between animals and people

In a health care facility, animal handlers (the people who have ownership or responsibility for the animal) are required to manage all contact between animals and people by:

- Preventing animals from coming into contact with sites of invasive devices like drips and wound drains, open or bandaged wounds, surgical incisions or other breaches of skin, or any patient medical equipment. Bandages must be replaced if soiled.
- Preventing animals from licking people and medical equipment.
- Ensuring patients or residents use a barrier such as a clean towel or sheet if having an animal placed on the bed. This should be laundered immediately after use or placed in a dirty linen bag and sent for laundering in the usual process, and not used for multiple patients or residents.
- Reporting any incidents (such as accidents, bites or scratches) immediately to health care staff at the facility.
- Ensuring animal visits or activities are not conducted in areas considered unsuitable due to health, safety and infection control requirements including:
 - › food storage, preparation or dining areas (such as kitchens and dining rooms)
 - › sterilising departments
 - › operating theatres or procedure rooms
 - › intensive care/high dependency areas
 - › areas specifically for immunosuppressed patients.

Hand washing

All patients, visitors, and health care staff should wash their hands with liquid soap and running water, and dry hands with a single use disposable paper towel (air dryers are not recommended for use in health care facilities):

- before and after touching a patient
- before handling or consuming food or beverage
- before contact with animals or their environments (to reduce risk of disease transmission to animals)
- after contact with animals, their environments or wastes.

Acknowledgment: the advice contained in this section has been adapted from the following sources: Sehulster et al, 2004; NSW Ministry of Health, 2012; Lefebvre et al, 2008.



Appendices



image courtesy SATC

Appendix 1

Table 1. Zoonotic disease outbreaks

LOCATION (Country) YEAR	*ZOO NOTIC DISEASE	WHO WAS AFFECTED	MODE OF TRANSMISSION AND RISK FACTORS
Agricultural show (Qld, Australia)** 2013	Shiga toxin-producing <i>Escherichia coli</i> O157:H-	57 people (median age 9 years)	Direct and indirect animal contact via a petting zoo and animal nursery.
Agricultural show (SA, Australia) ¹ 2011	Shiga toxin-producing <i>Escherichia coli</i> and haemolytic uraemic syndrome [^]	10 people (median age 5 years), 2 of whom developed Haemolytic Uraemic Syndrome (HUS)	Direct and indirect animal contact via a petting zoo.
Petting farm (England) ² 2009	Shiga toxin-producing <i>Escherichia coli</i> O157	93 people	Direct contact with infected animals. Indirect contact via faeces contaminated bedding or fixtures.
Petting zoo - state fair (USA) ³ 2004	Shiga toxin-producing <i>Escherichia coli</i> O157:H7 and haemolytic uraemic syndrome	108 people, 15 of whom developed HUS	Visiting the petting zoo area of the fairground was associated with illness. Contact with animal manure. Hand-to-mouth behaviours increased risk of illness (e.g. thumb sucking).
Childcare and school children visiting a temporary petting zoo (Canada) ⁴ 2003	Shiga toxin-producing <i>Escherichia coli</i> O157:H7	44 people	Direct contact with animals. Secondary cases within classes were also detected up to 7 weeks after visiting the petting zoo (suspected person to person transmission). Running water and signs recommending hand washing were not available.
Travelling poultry hatchery visiting childcare centres (NSW, Australia) ⁵ 2002	<i>Salmonella</i> Agona	7 people, 6 of whom were children	Animal to person transmission.
Petting zoo at regional fair (SA, Australia) ⁶ 2002	Shiga toxin-producing <i>Escherichia coli</i>	6 people	Direct and indirect contact via a petting zoo and secondary transmission to contacts (e.g. in the household) who did not attend the petting zoo.
Children's farm day camp (USA) ⁷ 2000-2001	Shiga toxin-producing <i>Escherichia coli</i> O157 & non-O157, <i>Cryptosporidium parvum</i> , <i>Salmonella</i> Typhimurium <i>Campylobacter jejuni</i>	84 people	Direct and indirect animal contact. Contact with an ill calf and getting visible manure on hands were risk factors for illness.
Dairy farm (USA) ⁸ 2000	Shiga toxin-producing <i>Escherichia coli</i> O157:H7 haemolytic uraemic syndrome	51 people (median age 4 years), 8 of whom developed HUS	Direct animal contact. Indirect contact including railings and manure. Hand-to-mouth activities associated with illness.
Zoo (USA) ⁹ 1996	<i>Salmonella</i> Enteritidis	65 people (median age 7 years)	Indirect animal contact. Touching a wooden barrier around a temporary reptile exhibit was the main risk factor for illness.

* Please refer Appendix 2. Table 2. for information about these zoonotic diseases including common potential sources of infection, disease transmission, signs and symptoms.

** Personal communication with Communicable Disease Unit, Queensland Department of Health

[^] Haemolytic uraemic syndrome (HUS) is a severe clinical outcome of Shiga toxin-producing *Escherichia coli* infection and is characterised by kidney disease and damage to other organs such as the pancreas and brain.

References to Appendix 1. Table 1. Zoonotic disease outbreaks

1. McCallum L, Communicable Disease Control Branch disease surveillance and investigation report: 1 April to 31 December 2011. Public Health Bulletin 2012; 9: 52-63.
2. Ihekweazu C, Carroll K, Adak B, et al. Large outbreak of verocytotoxin-producing *Escherichia coli* O157 infection in visitors to a petting farm in South East England, 2009; Epidemiol. Infect., 2012 Aug;140(8):1400-13. doi: 10.1017/S0950268811002111. Epub 2011 Nov 18.
3. Goode B, O'Reilly C, Dunn J, et al. Outbreak of *Escherichia coli* O157:H7 infections after petting zoo visits, North Carolina state fair, October--November 2004. Arch Pediatr Adolesc Med 2009;163:42--8.
4. David ST, MacDougall L, Louie K, et al. Petting zoo-associated *Escherichia coli* O157:H7-secondary transmission, asymptomatic infection, and prolonged shedding in the classroom. Can Commun Dis Rep 2004;30:173-80.
5. Merritt TD and Herlihy C. *Salmonella* outbreak associated with chicks and ducklings at childcare centres. MJA 2003;179:63-64.
6. The OzFoodNet working group, Foodborne disease in Australia: incidence, notifications and outbreaks. Annual Report of the OzFoodNet network, 2002. CDI 2003; 27 (2): 209-243.
7. Smith KE, Stenzel SA, Bender JB, et al. Outbreaks of enteric infections caused by multiple pathogens associated with calves at a farm day camp. Pediatr Infect Dis J 2004;23:1098-104.
8. Crump JA, Sulka AC, Langer AJ, et al. An outbreak of *Escherichia coli* O157:H7 infections among visitors to a dairy farm. N Engl J Med 2002;347 (8):555-60.
9. Friedman CR, Torigian C, Shillam PJ, et al. An outbreak of salmonellosis among children attending a reptile exhibit at a zoo. J Pediatr 1998;132:802-7.

Appendix 2

Table 2. Zoonotic diseases: transmission, signs and symptoms

This table is limited to sources and routes applicable to these Guidelines.

★ Many of the gastrointestinal infections listed in these tables are most commonly contracted through eating contaminated food or through person to person spread. Some are not known to occur in South Australia and some are rare.

Disclaimer: The information outlined in this table of zoonotic diseases has been provided for education and information purposes only. Over time the currency and completeness of this information may change.

DISEASE OR INJURY	COMMON POTENTIAL ANIMAL SOURCES TRANSMISSION, SIGNS AND SYMPTOMS	MODE OF TRANSMISSION		
		ingestion	inhalation	skin or mucous membrane
Bacterial	Sources, transmission, signs and symptoms			
★ <i>Campylobacter</i> infection	Potential animal sources include cattle, sheep, poultry, birds, pigs, rodents, puppies and kittens. Transmission is via ingestion i.e. eating or drinking contaminated food or water, or hand to mouth activities. Symptoms in humans include diarrhoea, fever, abdominal pain, nausea and vomiting.	✓		
★ <i>Salmonella</i> infection	Potential animal sources include reptiles, cattle, sheep, horses, pigs, poultry, rodents, birds, cats and dogs. Transmission is via ingestion i.e. eating or drinking contaminated water, or hand to mouth activities. Symptoms in humans include diarrhoea, fever, abdominal pain, headache, nausea and vomiting.	✓		
★ Shiga toxin producing <i>E. coli</i> (STEC) infection	Potential animal sources include cattle, sheep, goats, and deer. Transmission is via ingestion i.e. eating or drinking contaminated food or water, or hand to mouth activities. Symptoms in humans include diarrhoea, possibly with blood and abdominal pain. In severe cases, STEC can lead to haemolytic uraemic syndrome (HUS), which may cause kidney failure and brain damage.	✓		
★ <i>Yersinia</i> infection	Potential animal sources include cows, dogs, cats, horses, birds, pigs, and rodents. Transmission is via ingestion i.e. eating or drinking contaminated food or water, or hand to mouth activities. Symptoms in humans include fever, diarrhoea, and abdominal pain.	✓		
Psittacosis	Potential animal sources include wild and domestic birds. Transmission is via inhalation of dried nose and eye secretions, droppings or dust from feathers of infected birds. Symptoms in humans include, fever, cough, headache, rash, muscle aches, chest pain, shortness of breath, sore throat, swollen lymph glands.		✓	

DISEASE OR INJURY	COMMON POTENTIAL ANIMAL SOURCES TRANSMISSION, SIGNS AND SYMPTOMS	MODE OF TRANSMISSION		
		ingestion	inhalation	skin or mucous membrane
Bacterial	Sources, transmission, signs and symptoms			
Leptospirosis	Potential animal sources include cattle, rats, pigs and dogs. Transmission is via skin or mucous membrane contact with animal urine, directly or indirectly. Symptoms in humans include sudden onset of fever, headache, chills, muscle aches, conjunctivitis and sometimes a rash.			✓
Cat scratch disease	Animal sources include cats. Transmission is via skin or mucous membrane contact when a cat scratches or bites. Symptoms in humans include, flu- like symptoms, fever, painful lymph node swelling and tiredness.			✓
Q fever	Potential animal sources include cattle, sheep, goats, cats, dogs, and kangaroos. Transmission is via the inhalation of animal waste (especially birthing products) and dust from an animal's environment OR the ingestion of raw (unpasteurised) milk from infected cattle and goats. Symptoms in humans include fever (may last up to 4 weeks), sweats and chills, severe headache, fatigue, muscle aches, confusion, nausea and vomiting, diarrhoea and abdominal pain.	✓	✓	
<i>Brucella</i> infection	In Australia only <i>Brucella suis</i> (affecting feral pigs and pig hunting dogs) and <i>Brucella ovis</i> (affecting sheep) are present. Of these only <i>Brucella suis</i> affects humans. Transmission is via skin or mucous membrane contact, inhalation and ingestion of animal products. Symptoms in humans include fever, headache, sweats, chills, weakness, weight loss and generalised aches.	✓	✓	✓
Tetanus	All animals and their environments (and soil). Transmission is via skin or mucous membrane contact Symptoms in humans include lockjaw, painful muscular contractions and the illness is often fatal.			✓
Rat-bite fever	Animal sources include rats, mice and other rodents. Transmission is via skin and mucous membrane contact (rodent bites) and via ingestion i.e. through food contaminated with rodent urine or faeces. Symptoms in humans include fever, chills, headaches, muscle aches, rash and arthritis.	✓		✓

DISEASE OR INJURY	COMMON POTENTIAL ANIMAL SOURCES TRANSMISSION, SIGNS AND SYMPTOMS	MODE OF TRANSMISSION		
		ingestion	inhalation	skin or mucous membrane
Protozoa	Sources, transmission, signs and symptoms			
<i>Cryptosporidium</i> and <i>Giardia</i> infections	Potential animal sources include cattle, sheep, poultry, rodents, cats and dogs. Transmission is via ingestion i.e. eating or drinking contaminated food or water, or hand to mouth activities. Symptoms in humans include watery diarrhoea, bloating, and abdominal pain. May include fever, vomiting and loss of appetite.	✓		
<i>Toxoplasma</i> infection	Potential animal sources include cats, rodents and warm blooded animals. Transmission is via ingestion i.e. eating or drinking contaminated food or water, or hand to mouth activities. Symptoms in humans include fever, with blindness and other birth defects in fetal infections.	✓		
Fungi	Sources, transmission, signs and symptoms			
Fungal infections (e.g. ringworm)	Sources include all animals and especially cats, dogs, cattle, goats and pigs. Transmission is via skin or mucous membrane contact. Symptoms in humans include ring-shaped rash that is reddish and may be itchy, and, if involving the scalp, a bald scaly patch.			✓

DISEASE OR INJURY	COMMON POTENTIAL ANIMAL SOURCES TRANSMISSION, SIGNS AND SYMPTOMS	MODE OF TRANSMISSION		
		ingestion	inhalation	skin or mucous membrane
Parasites	Sources, transmission, signs and symptoms			
Hydatid infection	Potential animal sources include dogs, foxes and dingoes. Transmission is via ingestion i.e. eating or drinking contaminated food or water, or hand to mouth activities. Symptoms depend on the site of the cyst. It can be without symptoms. Hydatid infection in humans produces slowly enlarging fluid-filled cysts, mainly on the liver or lungs, but can appear elsewhere.	✓		
Mites	Sources include all animals and their environments. Transmission is via skin or mucous membrane contact. Symptoms in humans include itchy, red inflamed skin lesions.			✓
<i>Toxocara</i> infection	Potential animal sources include dogs and cats. Transmission is via ingestion i.e. hand to mouth. Symptoms in humans include flu-like illness with rash, wheezing and blindness.	✓		
Viruses	Sources, transmission, signs and symptoms			
Hendra virus infection	Sources include horses (via host flying foxes). Transmission is via inhalation. Symptoms in humans include flu-like illness, pneumonia, encephalitis (fever, headache, drowsiness), coma and infection may lead to death.	✓		
Australian bat lyssavirus infection (rabies-like virus)	Sources include all bats including flying foxes. Transmission is via skin or mucous membrane contact. Symptoms in humans include headache, fever, delirium, convulsions, coma; infections to date have all been fatal.			✓
Orf virus infection (also called "sore mouth" or "contagious ecthyma")	Animal sources include sheep and goats. Transmission is via skin or mucous membrane contact. Symptoms in humans include blister type lesions found mainly on hands, arms and face.			✓

Additional information about the zoonotic diseases can be sourced from SA Health's publication *You've Got What? Prevention and control of notifiable and other infectious diseases in children and adults* at www.sahealth.sa.gov.au/YouveGotWhat

Relevant Legislation, Legislative Instruments, Policies, Guidelines and Codes of Practice

Legislation and legislative instruments

- Australia New Zealand Food Standards Code
- *Disability Discrimination Act 1992* (Cth) - Section 9 Disability discrimination—guide dogs, hearing assistance dogs and trained animals
- *Food Act 2001* (SA)
- *Animal Welfare Act 1985* (SA)
- Animal Welfare Regulations 2000 (SA)
- *South Australia Public Health Act 2011*
- South Australian Public Health (General) Regulations 2013
- *Dog and Cat Management Act 1995* (SA)
- *Work Health and Safety Act 2012* (SA)

Policies, guidelines and codes of practice

Pet trade

- South Australian Department of Environment, Water and Natural Resources, South Australian Code of Practice for the Care Management of Animals in the Pet Trade, Second Edition, 1999.
- Pet Industry Association of Australia Ltd, Pet Care Professionals, National Code of Practice 2008.

Childcare services and schools

- Australian Government, National Health and Medical Research Council, 5th Edition, Staying Healthy. Preventing infectious diseases in early childhood education and care services, 2012.
- Department of Education & Children's Services, Code of Practice for the Use and Care of Animals in Schools and Early Childhood Settings 2010.
- Department for Education and Child Development, Animal Ethics Committee, Standard Operating Procedures for the use of Animals in Schools, Preschools & Childcare Centres, 2013.
- Department for Education and Child Development, Family Day Care Fact Sheet, Animals, 2012

Health

- SA Health, Hand Hygiene Policy Directive, Infection Prevention and Control, Infection Control Service, Communicable Disease Control Branch, 2012.
- SA Health, Hand Hygiene Guideline, Infection Prevention and Control, Infection Control Service, Communicable Disease Control Branch, 2012.

Useful web sites

South Australian Government

- Biosecurity SA
www.pir.sa.gov.au/biosecuritysa
- Department of Environment Water and Natural Resources
www.environment.sa.gov.au
- Department of Primary Industries and Regions SA
www.pir.sa.gov.au
- Local Government Association of South Australia
www.lga.sa.gov.au
- SA Health
www.sahealth.sa.gov.au
- *South Australian Public Health Act 2011*
www.legislation.sa.gov.au
- SafeWork SA
www.safework.sa.gov.au
- *Food Act 2001 (SA)*
www.legislation.sa.gov.au
- *Work Health and Safety Act 2012 (SA)*
www.legislation.sa.gov.au

Commonwealth Government of Australia

- Animal Health Australia
www.animalhealthaustralia.com.au

Other useful web pages

- Centres for Disease Control and Prevention, Atlanta, USA
www.cdc.gov/

Print your own

To download and print these resources visit

www.sahealth.sa.gov.au/ProtectingPublicHealth

For animal handlers, exhibitors or pet retailers

Hand washing sign for placement at entry and exit of animal contact areas.



Hand washing sign for placement in food and beverage service areas.



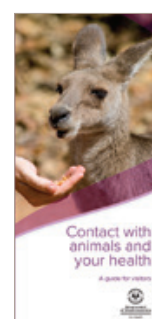
Hand washing directional signage for placement at an animal exhibit.



5 Steps to Clean Hands. An A4 poster for use over hand wash basins about how to wash hands properly with soap and running water and dry with a single use disposable paper towel.



Contact with animals and your health - a guide for visitors. Information pamphlet for visitors attending an animal exhibit.



For childcare services and schools

Visiting an animal exhibit. A checklist for childcare services and schools.



Keeping children healthy around animals. A learning resource for teachers to use with children (R-7) about how they can maintain their health around animals.



5 Steps to Clean Hands. An A4 poster for use over hand wash basins about how to wash hands properly with soap and running water and dry with a single use disposable paper towel.



For other general and community use

Hand washing signs.



5 Steps to Clean Hands. An A4 poster for use over hand wash basins about how to wash hands properly with soap and running water and dry with a single use disposable paper towel.



Contact

For information and advice on zoonotic disease contact:

Your doctor or veterinarian

OR

Environmental health officer, at the local council

OR

Health Protection Branch
Public Health and Clinical Systems
Department for Health and Ageing
Telephone (08) 8226 7100
Email healthprotectionprograms@health.sa.gov.au

OR

Communicable Disease Control Branch
Public Health and Clinical Systems
Department for Health and Ageing
Telephone 1300 232 272
Email cdcb@health.sa.gov.au

For information and advice on animal health:

Department of Primary Industries and Regions SA
Biosecurity SA, Animal Health
Telephone: (08) 8207 7900
E-mail: PIRSA.BiosecuritySA@sa.gov.au

Emergency Animal Disease Watch Hotline
Phone: 1800 675 888

Contributors

These Animal Contact Guidelines were developed in consultation with representatives of the following organisations:

Animal Exhibitors

- Adelaide Zoo
- Cleland Wildlife Park
- Gorge Wildlife Park
- Monarto Zoo
- Wildlife Exhibitors Association South Australia
- Royal Adelaide & Horticultural Society, South Australia Inc.
- The Avicultural Society of South Australia Inc.
- United Birds Society of South Australia Inc.

Childcare services and schools

- Australian Children's Community Services SA
- Catholic Education SA
- Family Day Care Educators Association of SA
- Gowrie SA
- Independent School Inc.
- Kadina Childcare Centre
- Lurra Community Children's Centre
- Modbury Community Children's Centre
- Out of School Hours Care SA
- St Morris Community Childcare Centre
- Toy Box Community Childcare Centre
- Urrbrae Agricultural High School

Local Council Environmental Health Officers

- Barossa Council
- City of Charles Sturt
- City of Holdfast Bay
- City of Onkaparinga
- City of Port Adelaide Enfield
- City of Playford
- City of Salisbury
- City of West Torrens
- District Council of Loxton Waikerie
- District Council of Mount Barker
- District Council of Yorke Peninsula
- Mid-Murray Council
- Naracoorte Lucindale Council
- Rural City of Murray Bridge
- Whyalla City Council

Pet Trade

- Animal Welfare Unit, Department of Environment, Water and Natural Resources, Government of South Australia
- Pet Industry Association of Australia Ltd.

South Australian Government

- Department for Health and Ageing
- Department of Environment, Water and Natural Resources
- Department of Primary Industries and Regions SA
- Department for Education and Child Development

Other

- Queensland Health, Queensland Government, Australia
- Southern Cross Aged Care.

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- Heymann DL (ed). *Control of communicable diseases manual*. 18th edition. Washington: American Public Health Association, 2004.
- Hughes JM, Colley DG. Preventing congenital toxoplasmosis, *MMWR*, Recommendations and Reports, 2000: 49 (RR02): 57-75.
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- National Health and Medical Research Council, *Staying Healthy. Preventing infectious diseases in early education and childcare services*, Fifth Edition 2012.
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