Australian Government

National Health and Medical Research Council

5th Edition

Staying Healthy

Preventing infectious diseases in early childhood education and care services

(updated June 2013)

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Staying Healthy 5th Edition – updated June 2013

The June 2013 update of Staying Healthy 5th Edition includes fact sheets on croup and warts, which were omitted in the first edition. NHMRC has also taken this opportunity to make minor amendments to the publication, which are underlined below.

<table>
<tr><th>Page</th><th>5th Edition version</th><th>5th Edition updated version June 2013</th></tr>
<tr><td>41</td><td>Infants need their hands washed as often and as thoroughly as older children:
If the infant can stand at a small hand basin, wash their hands the same way you wash your own hands.
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<u>[a] To ensure the nappy change table is cleaned correctly, follow the process on page 45 (table 3.3).</u></td></tr>
<tr><td>60</td><td>1.2.2 Celebration cakes and blowing out candles</td><td><u>3.6.2</u> Celebration cakes and blowing out candles</td></tr>
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Introduction

Infections are common in children and often lead to illness. At home, children are reasonably well protected from infectious diseases because they do not come into contact with as many people as children who attend education and care services. The adults they meet are usually immune to many childhood illnesses because they had them as children, or have been vaccinated against them.

Many children first enter education and care services at a time when their immune systems are still developing. They may not have been exposed to many common germs that cause infections—bacteria, viruses, fungi, protozoa—and they may be too young to be vaccinated against some diseases. The way that children interact in education and care services means that diseases can quickly spread in a variety of ways. Children (particularly younger children) will have close physical contact with other children and carers through regular daily activities and play; they often put objects in their mouths; and they may not always cover their coughs or sneezes.

Staying healthy-Preventing infectious diseases in early childhood education and care services is a best-practice tool that provides simple and effective ways for educators and other staff to help limit the spread of illness and infectious diseases in education and care settings.

Alignment with the National Quality Standards

The Australian Children's Education and Care Quality Authority (ACECQA) is the national body guiding the implementation of the National Quality Framework in the education and care sector in Australia.

Under the National Regulations and the National Quality Standards, providers and educators are required to implement and encourage effective hygiene practices. Following best practice in maintaining high standards of hygiene minimises the spread of infectious diseases and promotes good health. It is important to lead by example to ensure that educators and other staff, children, visitors and families all remember to practise effective infection prevention and control.

The National Quality Framework for Early Childhood Education and Care was developed to improve and standardise the quality of education and care in Australia. Quality Area 2: 'Children's Health and Safety' includes standards relating to hygiene and infection control in education and care services, and Quality Area 7: 'Leadership and Service Management' refers to the policies and procedures that services should have in place.[1] The framework came into effect on 1 January 2012, and these quality areas have been considered in this edition of *Staying healthy*.

Staying healthy is a best-practice tool that allows education and care services to interpret and adapt advice to meet the regulatory requirements according to the children in their care and their education and care service environment.

Scope of this edition

The advice in the 5th edition of *Staying healthy* is drawn from established guidelines that are regularly updated using the principles of evidence-based medicine (including the *Australian guidelines for the prevention and control of infection in healthcare*, 2010). It also updates and builds on advice in previous editions of *Staying healthy.* It is designed to be used by anyone caring for children—the term 'education and care service' includes day care, long day care, family day care, preschool and out-of-school-hours care.

1 The *Guide to the National Quality Standard* is available at http://acecqa.gov.au/storage/3%20-%20Guide%20to%20the%20National%20Quality%20Standard%20FINAL.pdf (viewed 28 March 2012).

The scope of *Staying healthy* is to provide advice on infectious diseases in children up to school age, from a public health perspective. It is not intended as a guide to managing individual children who are ill; rather, it is intended for use in controlling and managing the spread of infections that can also affect healthy children. Although guidance on children with particular medical conditions such as diabetes, asthma or severe allergies is needed in the education and care industry, it is beyond the scope of this document.

The key principles of infection prevention and control are applicable across age groups and include the disability sector. However, it is recognised that the risks and issues vary depending on the age and developmental capacity of the children. These variations in risks and issues are not considered in this edition of *Staying healthy*.

Education and care services are all different, and there is often more than one effective way to perform a procedure. This document therefore includes detail on the rationale behind the procedures—with a clear understanding of why each step is important, educators and other staff can solve problems as they arise.

This edition also includes scenarios based on real-life situations that illustrate the key messages and appropriate actions to take.

Best-practice advice

The guidance and procedures in *Staying healthy* represent best practice. Education and care services are strongly encouraged to adopt these practices. However, some services may choose to develop policies that do not follow all of the advice in *Staying healthy.* For example, some services may have a philosophy of environmental sustainability, and a consequent greater emphasis on considering the resources they use. They may have policies and procedures in place to minimise waste or the use of chemicals. Education and care services that choose not to use the best-practice advice in this document should ensure that their policies and procedures minimise the spread of infection.

It is not possible to prevent all infections in education and care services. However, by using the strategies outlined here, you can prevent many infectious diseases and control their spread.

PART 1
Concepts in infection control

Summary

Part 1 describes the basics of infectious diseases—what causes them, how they spread and how to prevent them. A key concept is the chain of infection, which explains how germs can spread in education and care services. To stop infections spreading, you can break the chain of infection at any point through:

- effective hand hygiene
- exclusion of ill children, educators and other staff
- immunisation
- cough and sneeze etiquette
- appropriate use of gloves
- effective environmental cleaning.

Evidence base

The information in Part 1 is based on:

- Communicable Diseases Network Australia 2008–11, *Series of national guidelines,* CDNA, Canberra
- National Health and Medical Research Council 2005, *Staying healthy in child care: preventing infectious diseases in child care,* 4th edn, NHMRC, Canberra
- National Health and Medical Research Council 2008, *The Australian immunisation handbook,* 9th edn, NHMRC, Canberra
- National Health and Medical Research Council 2010, *Australian guidelines for the prevention and control of infection in healthcare,* NHMRC, Canberra
- SA Health—Communicable Disease Control Branch 2009, *You've got what?*, 4th edn, SA Health, Adelaide
- other sources as specified in the text.

1.1 What causes infections?

Microscopic living things (known as germs) are all around us. Some of these germs can cause disease in people, other animals or plants. There are four major types of germs: bacteria, viruses, fungi and protozoa.

Bacteria

Bacteria are found almost everywhere, including in and on the human body. Most bacteria live in close contact with us and our environment without causing any harm. Some are even good for us—good bacteria live in our intestines and help us use the nutrients in the food we eat and make waste from whatever is left. We could not make the most of a healthy meal without these good bacteria. However, some bacteria can infect the body and cause disease. Examples of bacterial diseases include streptococcal sore throat, pertussis (whooping cough) and meningococcal disease.

Viruses

Viruses can only grow and reproduce inside other living cells, called their host. Most viruses cannot survive very long outside their host cell. When viruses enter our bodies, they can multiply and cause illness. Viruses cause diseases such as the common cold, gastroenteritis, varicella (chickenpox), measles and influenza (the flu).

Fungi

Fungi are a group of organisms that includes yeasts, moulds and mushrooms. They prefer to live in damp, warm places. Many fungi—such as edible mushrooms and baker's yeast—are not dangerous, but some can cause disease. Examples of fungal diseases include tinea corporis (ringworm), tinea pedis (athlete's foot) and candida (thrush).

Protozoa

Protozoa are microscopic living things that thrive on moisture and often spread diseases through water. Some protozoa cause intestinal infections that lead to diarrhoea, nausea and stomach upsets; examples include *Cryptosporidium* and *Giardia*, which can be spread through contaminated drinking water.

Other causes of infection

Bacteria, viruses, fungi and protozoa are all types of germs responsible for many human infections. Infections can also be caused by parasites such as roundworm and hookworm.

Mites

Skin infestation by mites such as scabies and insects such as head lice can cause scratching and skin damage. This can increase the risk of getting a secondary bacterial infection by Group A Streptococci. This infection can cause acute rheumatic fever which may result in rheumatic heart disease (damage to the heart). These are of particular concern for Aboriginal and Torres Strait Islander communities in northern Australia who have the highest rate of rheumatic heart disease in the world.[2]

2 Fischer, K and Kemp, DJ. 2009, *Scabies and bacterial skin infections at a molecular level,* Microbiology Australia.

1.2 How do infections spread?

This section explains how germs can spread, with a focus on education and care service settings.

1.2.1 The chain of infection

The chain of infection refers to the way in which germs spread (Figure 1.1). All the steps in the chain need to occur for germs to spread from one person to another. By breaking the chain, you can prevent and control infections. It is important to remember that the chain can be broken at any stage.

Figure 1.1 The chain of infection

The three steps in the chain of infection

1. The germ has a source.
2. The germ spreads from the source.
3. The germ infects another person.

You can break the chain of infection at any stage.

The germ has a source

People can pick up germs directly from an infected person, or from the environment. A person with an infection may or may not show any signs of illness. They may be infectious before they become unwell, during their illness or after they have recovered.

For example, in cases of gastroenteritis, children, educators and other staff who no longer have diarrhoea (loose stools) may still shed diarrhoea-causing germs in their faeces for some time. This means that they are still a potential source of the germ. For this reason, it is important that the infection control process is always followed by all people in the education and care service.

The germ spreads from the source

Germs can spread in a number of ways, including through the air by droplets, through contact with faeces and then contact with mouths, through direct contact with skin, and through contact with other body secretions (such as urine, saliva, discharges or blood).

Some germs can spread directly from person to person; others can spread from the infected person to the environment. Many germs can survive on hands, and on objects such as toys, door handles and bench tops. The length of time a germ can survive on a surface (including the skin) depends on the germ itself, the type of surface it has contaminated and how often the surface is cleaned. Washing hands and surfaces regularly with detergent and water is a very effective way of removing germs and preventing them spreading through the environment. Figure 1.2 shows the role of hands in the spread of infection.

The germ infects another person

When the germ has reached the next person, it may enter the body through the mouth, respiratory tract, eyes, genitals, or broken or abraded skin. Whether a person becomes ill after the germ has entered the body depends on both the germ and the person's immunity. Illness can be prevented at this stage by stopping the germ from entering the body (for example, by making sure that all toys that children put in their mouths are clean, by washing children's hands and by covering wounds), and by prior immunisation against the particular germ.

1.2.2 Ways in which germs can spread

The way in which a germ spreads is known as its mode of transmission. The modes of transmission that are most likely to affect education and care services are described below.

Coughing or sneezing (droplet transmission)

When an infected person sneezes or coughs, tiny droplets are spread into the air and onto surrounding surfaces. A sneeze can spread droplets as far as 2 metres away. The droplets may be breathed in directly by another person, or another person may touch a surface contaminated with the droplets, then touch their mouth, eyes or nose. Examples of germs spread by droplets are the influenza virus and meningococcus.

Breathing contaminated air (airborne transmission)

Airborne transmission is different from droplet transmission because the germs are in even smaller particles than droplets, and they can be infectious over time and distance. These very small particles are created when an infected person breathes, talks, coughs or sneezes. The particles can be carried on air currents and through ventilation or air-conditioning systems, so they can infect people who have not had close contact with the source. Examples of airborne germs are the measles virus and the varicella (chickenpox) virus.

Direct contact (contact transmission)

Some germs can spread through touching alone. These include head lice (head-to-head contact), scabies and fungal infections of the skin (skin-to-skin contact).

Germs can spread through contact with infectious body fluids, such as mucus, saliva, vomit, blood, urine and faeces. They can enter the body by being swallowed, or through damaged skin or mucous membranes. This means that they can spread if a person touches infectious body fluid then puts their hands in their mouth, or if they prepare and eat food without first washing their hands.

Surfaces such as benches, tables, door handles, toys, bedding and toilets can be contaminated when a person with an infectious disease touches them, or coughs or sneezes on them. If a person touches a contaminated surface and then touches their mouth, eyes or nose, they can become infected.

Animals

Contact with animals can spread disease. Germs can be present on the skin, hair, feathers and scales of animals, and in their faeces, urine and saliva. These germs may not cause disease in the animal, but they may cause disease in humans. Some germs can multiply in insects such as mosquitoes and fleas and spread through the insect's bite; these insects that carry the germs are known as 'vectors'.

Food

Germs can live and reproduce in food. If the food is not heated or chilled properly, the germs can spread to the people eating the food and make them ill. Hand washing and following food preparation procedures are important to ensure that germs are not spread through food. (For more detail, see Section 3.5.)

1.2.3 How can diseases spread in education and care services?

The way that children interact with each other and with adults in education and care services means that diseases can quickly spread in a variety of ways. Children, especially younger children, have close contact with other people through playing or cuddling; they often put objects in their mouths; and they may not always cover their coughs or sneezes. Because some germs can survive on surfaces, children may touch a contaminated surface, then put their hands in their mouth and become infected. If a child has an ill sibling at home, they could also be incubating the illness, and risk bringing germs from home into the education and care service.

Whether or not a person becomes ill in an education and care service depends on three things:

- **The type of germ**—some viruses, such as measles and norovirus, are very infectious. Others, such as hepatitis B, hepatitis C and human immunodeficiency virus (HIV) are very difficult to spread in education and care services.
- **The opportunity for transmission**—germs have a greater chance of spreading if, for example, there are inadequate hand-washing facilities, or ill children are not excluded from the education and care service.
- **The person's immunity**—people who have been immunised against a particular disease, or who have had that disease before, are unlikely to become ill if they come in contact with the disease. People who have not been immunised, or who do not have natural immunity to that disease, have a much higher risk of becoming infected and developing the disease.

Different germs spread in different ways

Airborne: The virus that causes **measles** can stay in the air for up to 2 hours after an infected person has left the room. This means that people can be exposed to the virus without having direct contact with the infected person.

Contact: Germs such as **norovirus** and **rotavirus** can cause gastroenteritis, leading to symptoms of diarrhoea (loose stools) and/or vomiting. It may be obvious that a person can spread the disease while they are unwell, but what is not so well known is that a person may still be contagious up to 10 days after the symptoms have stopped.

Droplets: The bacteria that cause meningococcal disease can be present in people's throats. If an infected person coughs or sneezes, the droplets they produce can infect other people nearby.

Some germs are very difficult to spread in education and care services—these include **mosquito-borne germs** (which do not spread directly from person to person), and **human immunodeficiency virus** (HIV, which spreads through blood and sexual contact).

For more information on how specific germs spread, see the fact sheets in Part 5.

Because diseases can spread in education and care services, it is important to be aware of how this can happen, and to take steps to break the chain of infection. Children or infants may not be capable of maintaining hygiene standards on their own. Educators and other staff need to help children with toileting, hand hygiene and cough and sneeze etiquette, and also be aware of their own hygiene practices.

1.3 Main ways to prevent infection

The most important ways to break the chain of infection and stop the spread of diseases are:

- effective hand hygiene
- exclusion of ill children, educators and other staff
- immunisation.

Other strategies to prevent infection include:

- cough and sneeze etiquette
- appropriate use of gloves
- effective environmental cleaning.

1.3.1 Effective hand hygiene

Hand hygiene is one very effective way to control the spread of infection. Hand hygiene is a general term that refers to washing hands with soap and water, or using an alcohol-based hand rub.

Hands can play an important role in the spread of infection (Figure 1.2). The best way to prevent the transmission of disease is through effective hand hygiene. This can be done with soap and water, which removes both dirt and germs from the hands; or by using an alcohol-based hand rub, which reduces the number of germs on the hands.

More information on the procedures for hand hygiene can be found in Section 3.1.1 and on the 'Hand hygiene' posters

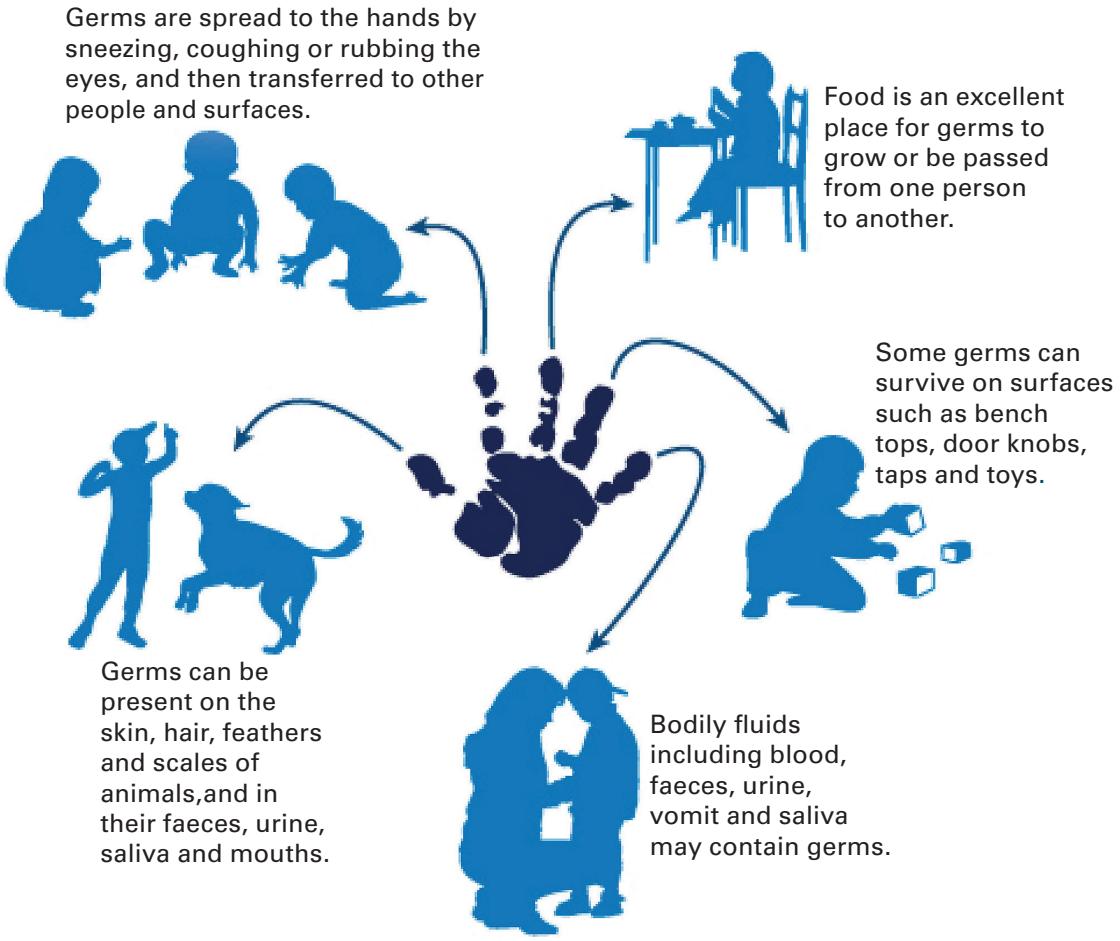


Figure 1.2 The role of hands in the spread of infection

Soap and water

The most effective method of hand hygiene is using soap and water. Washing your hands with soap and running water loosens, dilutes and flushes off dirt and germs. Soap alone cannot remove dirt or kill germs—it is the combination of running water, rubbing your hands and the detergent in the soap that helps loosen the dirt, remove the germs and rinse them off your skin.

Alcohol-based hand rubs

It is important to remember that soap and water are the best option when your hands are visibly dirty. However, alcohol-based hand rubs have been proven to increase hand hygiene in healthcare settings, and it makes sense to have them in education and care services. Alcohol-based hand rubs are also known as antiseptic hand rubs, waterless hand cleaners, gels or hand sanitisers. They can be a fast and effective way to remove germs that may have been picked up by touching contaminated surfaces. Alcohol-based hand rubs reduce the number of germs on your hands; they do not remove dirt from your hands.

Alcohol-based hand rubs are useful when performing multiple tasks in which hands can potentially become contaminated; for example, when assisting children with eating, when on excursions, in the playground, or in other situations where soap and water are not always available.

It is a good idea to place an alcohol-based hand rub at the entrance to the education and care service. This can help remind parents, carers and children (as well as educators and other staff) to have clean hands when they enter the service.

If you have visible dirt, grease or food on your hands, it is preferable to wash your hands with soap and water, rather than use an alcohol-based hand rub. However, even if your hands are visibly dirty, using an alcohol-based hand rub is better than not cleaning your hands at all.

Alcohol-based hand rubs are safe to use as directed, but children may be at risk if they eat or drink the hand cleaner, inhale it, or splash it into their eyes or mouth. Alcohol-based hand rubs should be kept well out of reach of children and only used with adult supervision.[3]

Antibacterial soap

Antibacterial soaps kill some (but not all) bacteria, and do not kill viruses. There is no place for the routine use of antibacterial soap in education and care services.

Hand drying

Effective hand drying is just as important as thorough hand washing. Damp hands pick up and transfer up to 1000 times more bacteria than dry hands. Drying your hands thoroughly also helps remove any germs that may not have been rinsed off.

Using disposable paper towel is the preferred option in education and care services. Cloth towels, if used, should be used by one person (i.e. not shared) and hung up to dry between uses. Cloth towels should be laundered regularly to reduce the risk of recontaminating or cross-contaminating hands. Warm air dryers can also be useful, but it is worth considering that they take longer to dry hands than using paper towel, can only serve one person at a time, and are often not used for long enough to ensure dry hands.

Hand care

Skin that is intact (i.e. has no cuts, scratches, abrasions, cracks or dryness) provides a barrier against germs. Frequent hand hygiene can cause some people's skin to become damaged (known as dermatitis) and allow germs to enter the body.

The most common form of dermatitis is irritant contact dermatitis. This is mainly due to frequent and repeated use of hand hygiene products—especially soaps and other detergents, and paper towels—which cause the skin to dry out. Symptoms may include dryness, irritation, itching, cracking and bleeding, and can range from mild to severe.

Allergic contact dermatitis is rare and is caused by an allergy to one or more ingredients in a hand hygiene product.

Hand care products containing soothing ingredients (emollients) are readily available and can reduce irritant contact dermatitis. Regularly moisturising hands can also help reduce dryness and irritation.

Factors that may contribute to dermatitis include:

- using products containing fragrances and preservatives—these should be kept to a minimum or eliminated
- not wetting hands before applying soap
- washing hands with soap and water immediately before or after using an alcohol-based hand rub
- putting on gloves while hands are still wet from either hand washing or using an alcohol-based hand rub
- using hot water for hand washing
- allowing skin to dry out
- using rough paper towels.

3 For more information about hand rubs, see www.healthunit.com/article.aspx?ID=12684 (viewed 26 July 2011).

When buying alcohol-based hand rubs, soaps and moisturising lotions, make sure they are chemically compatible. This will minimise skin reactions and ensure that the hand hygiene products work effectively together. It is advisable to buy hand hygiene and hand care products from a range made by a single manufacturer, as this may help to ensure that the products are compatible. Speak to your supplier for advice on chemically compatible products.

Hand hygiene and eczema

People with eczema have dry, itchy and sensitive skin that is easily inflamed and made worse by rubbing and scratching. These people may find that frequent use of soap and water irritates their skin. One solution is to use sorbolene cream instead of soap—put the cream on and gently rub it off under running water. People with eczema should pat their hands dry rather than rub them, and apply more sorbolene cream if needed.

1.3.2 Exclusion of ill children, educators and other staff

The aim of exclusion is to reduce the spread of infectious disease. The less contact there is between people who have an infectious disease and people who are at risk of catching the disease, the less chance the disease has of spreading. Excluding ill children, educators and other staff is an effective way to limit the spread of infection in education and care services.

By excluding one ill person, you can protect many other people from becoming ill

The need for exclusion and the length of time a person is excluded depend on:

- how easily the infection can spread
- how long the person is likely to be infectious
- how severe the disease can be.

The exclusion procedure

To determine when a person should be excluded:

- identify whether the symptoms or a diagnosed illness have an exclusion period
- refer to Table 1.1 for the recommended minimum periods of exclusion
- advise the parents, or the educator or other staff member, when they may return to the education and care service.

Involving parents

Parents may find an exclusion ruling difficult, and some parents may put pressure on educators to vary the exclusion rules. These parents are often under pressure themselves to fulfil work, study or other family commitments. This may lead to stress and conflict between parents and educators.

The best way to avoid conflict is to have a written policy that clearly states the exclusion criteria. This policy should state the minimum exclusion periods as per Table 1.1. The policy should also state any other conditions or exclusion periods that your education and care service may have. For example, you may wish to state the service's policy for excluding children, educators and other staff at times of an outbreak of infectious disease that does not specifically require exclusion. Give a copy of the policy to all parents, educators and other staff when they first join the education and care service, and regularly remind them about the policy.

For more information about appropriate policies in education and care services, see Part 4 – Issues for employers, educators and other staff

Clear policies can help avoid conflict

When the child enrols, provide parents with a copy of the education and care service's policies on exclusion, hand hygiene, cough and sneeze etiquette, immunisation and medication. Encourage parents to discuss these policies with you. The exclusion policy is the policy most likely to cause concern—make sure parents understand why the service has an exclusion policy.

Most parents will appreciate your attempts to prevent illness in their children. It is especially important that parents support the education and care service's policies on hygiene and infection control. Ask parents to encourage their children to perform effective hand hygiene when they arrive at the education and care service, and when they leave.

Education and care services should not be influenced by letters from doctors stating that the child can return to care, unless the child's condition fulfils the criteria for returning to care. Sometimes doctors can make different diagnoses for children in the same education and care service with illnesses that appear similar. It is the doctor's role to make the diagnosis, but education and care services can use the information in *Staying healthy* to decide on their response to an illness (e.g. the required exclusion time). Your local public health unit can help you with these situations, or if you are in doubt about exclusion.

Scenario

Millie, a child in the toddlers' room, has a confirmed case of pertussis (whooping cough). A public health nurse has contacted the education and care service, asking for the vaccination status of all staff and children who spent at least an hour in the same room as Millie.

Two educators (John and Rachel) have not had a pertussis vaccine in the past 10 years, and one child (Sebastian) who attended on the same day as Millie has not been vaccinated.

The public health nurse advises John and Rachel to take a course of an appropriate antibiotic prescribed by their doctor, but they can continue to work as long as they remain well. The nurse advises that Sebastian needs to be excluded until he has taken an appropriate antibiotic for 5 days. If Sebastian does not take an antibiotic, he must remain away for 14 days from his last contact with Millie.

Sebastian's mum has been contacted and has come to pick him up. She is very upset and wants to know why Sebastian must be excluded—he is well, and she cannot take time off from her full-time job to stay home with him.

How do you respond?

Points to discuss with Sebastian's mum include:

- You are not singling out Sebastian. Pertussis can cause serious illness in young children and as Sebastian is not vaccinated he is at higher risk of being infected.
- You understand the difficulties she faces with taking time off work.
- By excluding Sebastian, you are protecting him—there may be other children who have pertussis but have not yet developed symptoms, and you want to prevent him from being exposed and getting sick.
- You are also protecting the other children in the education and care service—Sebastian may develop symptoms and spread the infection to children whose immune systems did not respond well to the vaccine.
- The education and care service has a policy on excluding non-vaccinated children at times when vaccine-preventable diseases may be in the service.

Recommended minimum exclusion periods

Children, educators and other staff who are unwell should stay home from education and care services. Even if they do not have a condition that requires exclusion, the best place for an ill child to rest and recover is with someone who cares for them.

The recommended exclusion periods in Table 1.1 are based on how long a person with a specific disease is likely to be infectious. These are the minimum exclusion periods—people may need to stay home for longer until they are well enough to return to the service. The recommendation 'Not excluded' means that there is not a significant risk of spreading the infection to others, and exclusion is not necessary.

Contact your local public health unit if you have any questions about the recommended exclusion periods in Table 1.1.

See Section 6.2 for contact details of public health units

Sometimes people who have been in contact with an infected person may need to be excluded too. This depends on the disease; a public health unit will usually be involved to make sure exclusion is appropriate.

Different exclusion periods will apply to people whose work involves food handling. If people whose work involves food handling have vomiting or diarrhoea, they should not return to work until they have been symptom-free for 48 hours.

For some conditions that cause diarrhoea (such as *Campylobacter*, *Salmonella* and *Giardia*), children may be able to return 24 hours after the diarrhoea has stopped, even though the germ may still be in the faeces. This is because the number of germs present will be at a low level and, once the diarrhoea has stopped, it will be easier to maintain good hygiene.

Table 1.1 Recommended minimum exclusion periods

Condition	Exclusion of case	Exclusion of contacts[a]
Campylobacter infection	Exclude until there has not been a loose bowel motion for 24 hours[b]	Not excluded
Candidiasis (thrush)	Not excluded	Not excluded
Cytomegalovirus (CMV) infection	Not excluded	Not excluded
Conjunctivitis	Exclude until discharge from the eyes has stopped, unless a doctor has diagnosed non-infectious conjunctivitis	Not excluded
Cryptosporidium	Exclude until there has not been a loose bowel motion for 24 hours[b]	Not excluded
Diarrhoea (no organism identified)	Exclude until there has not been a loose bowel motion for 24 hours[b]	Not excluded
Fungal infections of the skin or nails (e.g. ringworm, tinea)	Exclude until the day after starting appropriate antifungal treatment	Not excluded
Giardiasis	Exclude until there has not been a loose bowel motion for 24 hours[b]	Not excluded
Glandular fever (mononucleosis, Epstein–Barr virus [EBV] infection)	Not excluded	Not excluded
Hand, foot and mouth disease	Exclude until all blisters have dried	Not excluded
Haemophilus influenzae type b (Hib)	Exclude until the person has received appropriate antibiotic treatment for at least 4 days	Not excluded Contact a public health unit for specialist advice
Head lice (pediculosis)	Not excluded if effective treatment begins before the next day at the education and care service The child does not need to be sent home immediately if head lice are detected	Not excluded
Hepatitis A	Exclude until a medical certificate of recovery is received and until at least 7 days after the onset of jaundice	Not excluded Contact a public health unit for specialist advice about vaccinating or treating children in the same room or group
Hepatitis B	Not excluded	Not excluded
Hepatitis C	Not excluded	Not excluded
Herpes simplex (cold sores, fever blisters)	Not excluded if the person can maintain hygiene practices to minimise the risk of transmission If the person cannot comply with these practices (e.g. because they are too young), they should be excluded until the sores are dry Sores should be covered with a dressing, where possible	Not excluded
Human immunodeficiency virus (HIV)	Not excluded If the person is severely immune compromised, they will be vulnerable to other people's illnesses	Not excluded
Human parvovirus B19 (fifth disease, erythema infectiosum, slapped cheek syndrome)	Not excluded	Not excluded

Condition	Exclusion of case	Exclusion of contacts[a]
Hydatid disease	Not excluded	Not excluded
Impetigo	Exclude until appropriate antibiotic treatment has started Any sores on exposed skin should be covered with a watertight dressing	Not excluded
Influenza and influenza-like illnesses	Exclude until person is well	Not excluded
Listeriosis	Not excluded	Not excluded
Measles	Exclude for 4 days after the onset of the rash	Immunised and immune contacts are not excluded For non-immunised contacts, contact a public health unit for specialist advice All immunocompromised children should be excluded until 14 days after the appearance of the rash in the last case
Meningitis (viral)	Exclude until person is well	Not excluded
Meningococcal infection	Exclude until appropriate antibiotic treatment has been completed	Not excluded Contact a public health unit for specialist advice about antibiotics and/or vaccination for people who were in the same room as the case
Molluscum contagiosum	Not excluded	Not excluded
Mumps	Exclude for 9 days or until swelling goes down (whichever is sooner)	Not excluded
Norovirus	Exclude until there has not been a loose bowel motion or vomiting for 48 hours	Not excluded
Pertussis (whooping cough)	Exclude until 5 days after starting appropriate antibiotic treatment, or for 21 days from the onset of coughing	Contact a public health unit for specialist advice about excluding non-vaccinated contacts, or antibiotics
Pneumococcal disease	Exclude until person is well	Not excluded
Roseola	Not excluded	Not excluded
Ross River virus	Not excluded	Not excluded
Rotavirus infection	Exclude until there has not been a loose bowel motion or vomiting for 24 hours[b]	Not excluded
Rubella (German measles)	Exclude until the person has fully recovered or for at least 4 days after the onset of the rash	Not excluded
Salmonellosis	Exclude until there has not been a loose bowel motion for 24 hours[b]	Not excluded
Scabies	Exclude until the day after starting appropriate treatment	Not excluded
Shigellosis	Exclude until there has not been a loose bowel motion for 24 hours[b]	Not excluded
Streptococcal sore throat (including scarlet fever)	Exclude until the person has received antibiotic treatment for at least 24 hours and feels well	Not excluded
Toxoplasmosis	Not excluded	Not excluded

Condition	Exclusion of case	Exclusion of contacts[a]
Tuberculosis (TB)	Exclude until medical certificate is produced from the appropriate health authority	Not excluded Contact a public health unit for specialist advice about screening, antibiotics or specialist TB clinics
Varicella (chickenpox)	Exclude until all blisters have dried—this is usually at least 5 days after the rash first appeared in non-immunised children, and less in immunised children	Any child with an immune deficiency (for example, leukaemia) or receiving chemotherapy should be excluded for their own protection as they are at high risk of developing severe disease Otherwise, not excluded
Viral gastroenteritis (viral diarrhoea)	Exclude until there has not been a loose bowel motion for 24 hours[b]	Not excluded
Worms	Exclude if loose bowel motions are occurring Exclusion is not necessary if treatment has occurred	Not excluded

a The definition of 'contacts' will vary according to the disease—refer to the specific fact sheet for more information.

b If the cause is unknown, possible exclusion for 48 hours until the cause is identified. However, educators and other staff who have a food handling role should always be excluded until there has not been a loose bowel motion for 48 hours. Adapted from SA Health Communicable Disease Control Branch http://www.dh.sa.gov.au/pehs/ygw/index.htm .Note that exclusion advice is consistent with the Communicable Diseases Network Australia Series of National Guidelines (SoNGs), where available.

Some diseases—such as pertussis, typhoid, tuberculosis, meningococcal disease and hepatitis A—can cause concern among parents and sometimes interest from the media. Education and care services should consult their local public health unit, which can provide support and education in the event of a concerning disease.

For more information about public health units, see Section 4.4

1.3.3 Immunisation

Immunisation is a reliable way to prevent some infections. Immunisation works by giving a person a vaccine—often a dead or modified version of the germ—against a particular disease. This makes the person's immune system respond in a similar way to how it would respond if they actually had the disease, but with less severe symptoms. If the person comes in contact with that germ in the future, their immune system can rapidly respond and prevent the person becoming ill.

Immunisation also protects other people who are not immunised, such as children who are too young to be immunised, or people whose immune systems did not respond to the vaccine. This is because the more people who are immunised against a disease, the lower the chance that a person will ever come into contact with someone who has the disease. The chance of an infection spreading in a community therefore decreases if a large proportion of people are immunised, because the immune people will not become infected and can protect the vulnerable people; this is known as 'herd immunity'.

Educators should ask all parents to provide a copy of their child's vaccination records. If the child has a vaccination record, make sure they have received all the vaccinations recommended for their age group.

If the child has not been medically vaccinated ('not medically vaccinated' includes children who may have been naturopathically or homeopathically vaccinated), tell the parents that their child will be excluded from care during outbreaks of some infectious diseases (such as measles and pertussis), even if their child is well. This is because the effectiveness of naturopathic or homeopathic vaccinations has not been scientifically proven. A statement about excluding non-medically vaccinated children should be included in the education and care service's immunisation policy.

You can encourage parents to vaccinate their children by:

- putting up wall charts about immunisation in rooms
- reviewing which children are behind in their vaccinations each month, updating the child's records kept in the education and care service, and sending home a reminder card
- putting a message about immunisation at the bottom of receipts.

When enrolling children, education and care services should make a note of when the child will need updates to their vaccinations. Services should review the vaccination status of all children, educators and other staff every year.

For information on immunisation for adults, see Section 4.2

Table 1.2 shows the schedule of vaccines currently funded through the National Immunisation Program in Australia. More information about vaccine-preventable diseases is shown in Table 1.3.

It is a good idea to check the Immunise Australia Program website (immunise.health.gov.au) and your state or territory health department's website on a regular basis (e.g. once a year) for any changes to the immunisation schedule.

Table 1.2 National Immunisation Program Schedule

Australian Government
Department of Health

National Immunisation Program Schedule

From 1 July 2013

Child programs	
Age	**Vaccine**
Birth	• Hepatitis B (hepB) [a]
2 months	• Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), *Haemophilus influenzae* type b, inactivated poliomyelitis (polio) (hepB-DTPa-Hib-IPV) • Pneumococcal conjugate (13vPCV) • Rotavirus
4 months	• Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), *Haemophilus influenzae* type b, inactivated poliomyelitis (polio) (hepB-DTPa-Hib-IPV) • Pneumococcal conjugate (13vPCV) • Rotavirus
6 months	• Hepatitis B, diphtheria, tetanus, acellular pertussis (whooping cough), *Haemophilus influenzae* type b, inactivated poliomyelitis (polio) (hepB-DTPa-Hib-IPV) • Pneumococcal conjugate (13vPCV) • Rotavirus [b]
12 months	• *Haemophilus influenzae* type b and Meningococcal C (Hib-MenC) • Measles, mumps and rubella (MMR)
18 months	• Measles, mumps, rubella and varicella (chickenpox) (MMRV)
4 years	• Diphtheria, tetanus, acellular pertussis (whooping cough) and inactivated poliomyelitis (polio) (DTPa-IPV) • Measles, mumps and rubella (MMR) (to be given only if MMRV vaccine was not given at 18 months)
School programs	
10–15 years (contact your State or Territory Health Department for details)	• Hepatitis B (hepB) [c] • Varicella (chickenpox) [c] • Human papillomavirus (HPV) [d] • Diphtheria, tetanus and acellular pertussis (whooping cough) (dTpa)
At-risk groups	
6 months and over	• Influenza (flu) (people with medical conditions placing them at risk of serious complications of influenza)
12 months	• Pneumococcal conjugate (13vPCV) [e] (medically at risk)
12–18 months	• Pneumococcal conjugate (13vPCV) (Aboriginal and Torres Strait Islander children in high risk areas) [e]
12–24 months	• Hepatitis A (Aboriginal and Torres Strait Islander children in high risk areas) [f]
4 years	• Pneumococcal polysaccharide (23vPPV) [e] (medically at risk)
15 years and over	• Influenza (flu) (Aboriginal and Torres Strait Islander people) • Pneumococcal polysaccharide (23vPPV) (Aboriginal and Torres Strait Islander people medically at risk)
50 years and over	• Pneumococcal polysaccharide (23vPPV) (Aboriginal and Torres Strait Islander people)
Pregnant women	• Influenza (flu)
65 years and over	• Influenza (flu) • Pneumococcal polysaccharide (23vPPV)

* Please refer to reverse for footnotes

IMMUNISATION

Table 1.2 National Immunisation Program Schedule (continued)

Footnotes to the National Immunisation Program (NIP) Schedule

a. Hepatitis B vaccine: should be given to all infants as soon as practicable after birth. The greatest benefit is if given within 24 hours, and must be given within 7 days.

b. Rotavirus vaccine: third dose of vaccine is dependent on vaccine brand used. Contact your State or Territory Health Department for details.

c. Hepatitis B and Varicella vaccine: contact your State or Territory Health Department for details on the school grade eligible for vaccination.

d. HPV vaccine: is for all adolescents aged between 12 and 13 years. A catch-up program for males aged between 14 and 15 years is available until December 2014. Contact your State or Territory Health Department for details on the school grade eligible for vaccination.

e. Pneumococcal vaccine:
   i. Medically at risk children require: a fourth dose of 13vPCV at 12 months of age; and a booster dose of 23vPPV at 4 years of age.
   ii. Aboriginal and Torres Strait Islander children require: a fourth dose of pneumococcal vaccine (13vPCV) at 12-18 months of age for children living in high risk areas (Queensland, Northern Territory, Western Australia and South Australia). Contact your State or Territory Health Department for details.

f. Hepatitis A vaccine: two doses of Hepatitis A vaccine for Aboriginal and Torres Strait Islander children living in high risk areas (Queensland, Northern Territory, Western Australia and South Australia). Contact your State or Territory Health Department for details.

Further information

Further information and immunisation resources are available from the Immunise Australia Program website at **www.immunise.health.gov.au** or by contacting the infoline on **1800 671 811**.

You should contact your State or Territory Health Department for further information on the program specific to your State or Territory:

State/Territory	Contact Number
Australian Capital Territory	(02) 6205 2300
New South Wales	1300 066 055
Northern Territory	(08) 8922 8044
Queensland	13 HEALTH (13 4325 84)
South Australia	1300 232 272
Tasmania	1800 671 738
Victoria	1300 882 008
Western Australia	(08) 9321 1312

IMMUNISE AUSTRALIA PROGRAM

A joint Australian, State and Territory Government initiative

www.immunise.health.gov.au

All information in this publication is correct as at October 2013

10521 October 2013

Table 1.3 Vaccine-preventable diseases

Disease	Caused by	Spreads by	Symptoms	Notes	Vaccine
Diphtheria	Bacterium	Droplets	Difficulty swallowing, breathlessness, suffocation	The bacterium produces a powerful toxin that may cause complications and death	Diphtheria toxoid in combination with tetanus toxoid and other antigens (e.g. DTPa)
Haemophilus influenzae type b (Hib)	Bacterium	Droplets; exposure to infected nose or throat secretions	Swelling in the throat (can block breathing), pneumonia, meningitis, joint pain	Before vaccines were introduced, Hib was the most common cause of life-threatening infection in children under 5 years of age	Hib
Hepatitis A	Virus	Faecal–oral route	Fever, nausea, tiredness, dark urine, yellow skin (jaundice)	Indigenous Australian children are at considerably greater risk of acquiring Hepatitis A and being hospitalised for the infection, compared to non-Indigenous children	Inactivated hepatitis A virus
Hepatitis B	Virus	Exposure to infected blood or body fluids containing blood; mothers can pass it on to their unborn babies	Fever, nausea, tiredness, dark urine, yellow skin (jaundice)	Following acute infection, 90% of infants will develop chronic infection and 1-10% of older children or adults will develop chronic infection	hepB
Measles	Virus	Airborne droplets	Fever, rash, runny nose, cough, conjunctivitis; around 6% of people also get pneumonia	Highly contagious; complications can be very serious	MMR
Meningococcal C disease	Bacterium	Droplets	Meningitis, bloodstream infection (septicaemia)	At any one time, about 10% of healthy people are carrying meningococcal bacteria in their nose or throat Although almost all people who carry these bacteria do not become ill, they can spread the bacteria to other people There are other strains of meningococcal bacteria (e.g. type B) that are not covered by this vaccine.	MenCCV
Mumps	Virus	Droplets	Fever, headache, inflammation of the salivary glands; occasionally causes brain infections (meningitis and encephalitis)	Can cause permanent deafness	MMR
Pertussis (whooping cough)	Bacterium	Droplets	Difficulty breathing, cough with characteristic 'whoop' sound in some people, vomiting	Highly contagious	Acellular pertussis in combination with diphtheria toxoid and tetanus toxoid (e.g. DTPa), and other antigens

Disease	Caused by	Spreads by	Symptoms	Notes	Vaccine
Pneumococcal disease	Bacterium	Droplets	Can infect the brain, bloodstream, lungs and middle ear	Pneumococcal bacteria are commonly carried in the back of the throat and nose of healthy people	Pneumococcal conjugate (13vPCV)[a] or pneumococcal polysaccharide (23vPPV)
Poliomyelitis (polio)	Virus	Faecal–oral route	Range from mild to severe, including permanent paralysis	The most recent case of polio in Australia occurred in 1977	Inactivated polio vaccine (IPV) or combination vaccines
Rotavirus	Virus	Faecal–oral route	Diarrhoea (can be severe), vomiting, fever	Thousands of children under 5 years of age are hospitalised each year in Australia due to rotavirus	Rotavirus
Rubella (German measles)	Virus	Droplets	Slight fever, swollen glands, joint pain, rash on the face and neck	Can cause devastating abnormalities in infants if mothers are infected during the first 20 weeks of pregnancy	MMR
Tetanus	Bacterium	Bacteria enter through a wound; no person-to-person spread	Severe muscle spasms that first appear in the neck and jaw muscles (lockjaw)	Often fatal	Tetanus toxoid in combination with diphtheria toxoid and other antigens (e.g. DTPa)
Varicella (chickenpox)	Virus	Airborne droplets or direct contact with fluid in blisters	Runny nose, mild fever, cough and fatigue, followed by a spreading rash that turns into blisters	Scratching spots can lead to bacterial infections; children with medical conditions are at greater risk of life-threatening complications such as pneumonia or inflammation of the brain; infection during pregnancy can damage the unborn baby	Varicella (VZV)[b]

Source: Adapted from National Health and Medical Research Council 2008, *The Australian immunisation handbook*, 9th edn, NHMRC, Canberra.

DTPa = diphtheria–tetanus–acellular pertussis; MMR = measles–mumps–rubella

a Note that 13vPCV replaced 7vPCV in the National Immunisation Program in all states and territories in 2011.

b Note that, from 1 July 2013, a new combination vaccine for measles, mumps, rubella and varicella will replace the individual varicella vaccine for children aged 18 months.

1.3.4 Additional strategies

Appropriate use of gloves

Wearing gloves does not replace the need to wash your hands, and you should ensure that you perform hand hygiene before putting gloves on and after taking them off.

Gloves provide a protective barrier against germs. When educators and other staff wear gloves appropriately, they protect both themselves and the children in their care from potential infection. It is important to remember that using gloves correctly will reduce the spread of germs, but will not eliminate it.

Disposable (i.e. single-use only) gloves are made of natural rubber latex, nitrile or vinyl. Latex gloves are preferable,[4] but nitrile gloves can be used by educators and other staff who have a latex allergy, or with

4 National Health and Medical Research Council 2010, *Australian guidelines for the prevention and control of infection in healthcare,* NHMRC, Canberra.

children who have latex allergies. Vinyl gloves are not recommended.[5] Powder-free gloves are preferable, because powdered gloves may contribute to latex allergies in children, educators and other staff.[6] Wear disposable gloves if you are likely to come in contact with body fluids or excretions, such as when changing nappies or cleaning up vomit or blood.

Children attending education and care services may be at significant risk of exposure to latex and acquiring a latex allergy because:

- education and care services are more likely to use cheaper, powdered supermarket brands of latex gloves rather than the more expensive, low-protein, powder-free, medical-grade examination gloves used in health care
- children may be regularly exposed to latex, including via their mucous membranes (e.g. when educators and other staff wear powdered latex gloves to prepare and handle food and to change a child's nappy; from inhaling latex powder when educators and other staff remove powdered gloves near children; and from touching surfaces that are contaminated with latex powder, such as nappy change mats).

Some authorities suggest that latex gloves should not be used in education and care services because of latex allergy risks to children, educators and other staff.[7]

Reusable utility gloves are made of more heavy-duty rubber and should be worn during general cleaning activities.

For more information on using gloves, see Section 3.1.2

Washing hands before wearing gloves

Wash your hands before putting on gloves so that you remove as many germs as possible from your hands. Otherwise, when you reach into the box of gloves, you can contaminate the other gloves in the box.

When changing a nappy, it is very important to wash your hands before you put on gloves, so that when you have finished changing the child, you can remove the dirty gloves and dress the child (steps 4–9 in Table 3.3) without needing to interrupt the nappy-changing procedure to wash your hands before dressing the child.

Washing hands after wearing gloves

When you have finished a procedure that requires you to wear gloves, it is important to wash your hands thoroughly after removing the gloves, because any germs on your hands may have multiplied significantly while you were wearing the gloves. There may also be microscopic tears or holes in the gloves that can allow germs to contaminate your skin. When taking off the gloves, you may contaminate your hands with the dirty gloves; therefore, it is essential that you wash your hands.

Cough and sneeze etiquette

Many germs can be spread through the air by droplets. By covering your mouth and nose when you cough or sneeze, you reduce how far the droplets can travel and stop them from contaminating other surfaces. In the past, people were encouraged to cover their coughs and sneezes with their hands. But if you do not clean your hands immediately, germs stay on your hands and can be transferred to other surfaces.

5 Rego, A and Roley, L 1999, 'In-use barrier integrity of gloves: latex and nitrile superior to vinyl', *American Journal of Infection Control,* vol. 27, no. 5, pp. 405–10.

6 National Health and Medical Research Council 2010, *Australian guidelines for the prevention and control of infection in healthcare*, NHMRC, Canberra.

7 Frith, J, Kambouris, N & O'Grady, O 2003, *Health and safety in children's centres: model policies and practices,* 2nd edn, University of New South Wales, Sydney.

Remember: cover your cough and sneeze to stop the spread of germs

The correct way to prevent the spread of germs that are carried in droplets is by coughing or sneezing into your inner elbow, or by using a tissue to cover your mouth and nose. Put all tissues in the rubbish bin straight away, and clean your hands with either soap and water or an alcohol-based rub.

Effective environmental cleaning

Some germs can survive in the environment, usually on surfaces such as bench tops, door handles and toys. The length of time a germ can survive on a surface depends on the germ itself, the type of surface it has contaminated, and how often the surface is cleaned. Reducing the number of germs in the environment can break the chain of infection.

Washing germs away

Routine cleaning with detergent and water, followed by rinsing and drying, is the most useful method for removing germs from surfaces. Detergents help to loosen the germs so that they can be rinsed away with clean water. Mechanical cleaning (scrubbing the surface) physically reduces the number of germs on the surface, just as hand hygiene using soap and water reduces the number of germs on the hands. Rinsing with clean water removes the loosened germs and any detergent residues from the surface, and drying the surface makes it harder for germs to survive or grow.

Detergent and water should be made up fresh daily in a clean, dry container, which should be labelled with the time it was made, the date and the type of detergent. Do not 'top up' the container with extra water during the day because this dilutes the detergent mixture, making it less effective. Spray bottles are not recommended—spraying a surface with a fine mist and then wiping it with a cloth or paper towel will not be enough to dislodge germs. There is also a greater risk of germs growing in the bottle and in the detergent mixture.

The most effective method is to use a container of fresh detergent and warm water (follow the manufacturer's instructions on how much detergent to use), immerse a cloth, wring it out, then clean the area with a vigorous rubbing action, followed by rinsing and drying. Although it is best to use warm water, cold water can also be used with a little extra scrubbing.

For more detail about cleaning with detergent or disinfectants, see Section 3.4

Disinfectants

Disinfectants are usually only necessary if a surface that has already been cleaned with detergent and water is known to have been contaminated with potentially infectious material. Most germs do not survive for long on clean surfaces when exposed to air and light, and routine cleaning with detergent and water should be enough to reduce germ numbers. Disinfectants might be used after routine cleaning during an outbreak of, for example, a gastrointestinal disease.

Clean first, then disinfect

It is more important to make sure that all surfaces have been cleaned with detergent and warm water than to use a disinfectant. If you do need to use a disinfectant, remember that the disinfectant will not kill germs if the surface has not been cleaned first.

To kill germs, any disinfectant must:

- have enough time in contact with the surface to kill the germs (as per the manufacturer's instructions)
- be used at the right concentration
- be applied to a clean, dry surface
- be effective against those particular germs.

Note that you should only use bleach for cleaning up small to large blood spills. Bleach is stronger than other disinfectants and can inactivate bloodborne viruses.

PART 2
Monitoring illness in children

Summary

Part 2 contains information on monitoring children who become ill while in the education and care service, and describes how to keep records of illness in the service. This includes illness from infectious diseases, as well as post-immunisation illness or discomfort.

Evidence base

The information in Part 2 is based on:

- National Health and Medical Research Council 2005, *Staying healthy in child care: preventing infectious diseases in child care*, 4th edn, NHMRC, Canberra
- National Health and Medical Research Council 2008, T*he Australian immunisation handbook*, 9th edn, NHMRC, Canberra
- other sources as specified in the text.

2.1 Watching for and recording symptoms in children

Because you care for the children in your group every day, you are probably used to the way each of them looks and behaves when they are healthy. It is useful for educators and other staff to have some understanding of the signs and symptoms that suggest that a young child may be quite ill and need urgent medical attention.[8] These include the following:

- **High fever**—a high fever in a young child can be a sign of infection, and needs to be investigated to find the cause. However, fever by itself is not necessarily an indicator of serious illness (see below for more details about fever).
- **Drowsiness**—the child is less alert than normal, making less eye contact, or less interested in their surroundings.
- **Lethargy and decreased activity**—the child wants to lie down or be held rather than participate in any activity, even those activities that would normally be of interest.
- **Breathing difficulty**—this is an important sign. The child may be breathing very quickly or noisily, or be pale or blue around the mouth. The child may be working hard at breathing, with the muscles between the ribs being drawn in with each breath.
- **Poor circulation**—the child looks very pale, and their hands and feet feel cold or look blue.
- **Poor feeding**—the child has reduced appetite and drinks much less than usual. This is especially relevant for infants.
- **Poor urine output**—there are fewer wet nappies than usual; this is especially relevant for infants.
- **Red or purple rash**—non-specific rashes are common in viral infections; however, red or purple spots that do not turn white if pressed with a finger require urgent medical referral because the child could have meningococcal disease.
- **A stiff neck or sensitivity to light**—this may indicate meningitis, although it is possible for infants to have meningitis without these signs.
- **Pain**—a child may or may not tell you they are in pain. Facial expression is a good indicator of pain in small infants or children who do not talk. General irritability or reduced physical activity may also indicate pain in young children.

These clinical features cannot be relied on to say for certain that a child is seriously ill, nor does their absence rule out serious illness. The more of the above features that are seen, the more likely it is that the child may have a serious illness. Remember that illness in infants and young children can progress very quickly. If there is any doubt, seek medical advice without delay.

2.1.1 What to do if a child seems unwell

Separate the ill child from the other children. If the child is not well enough to participate in activities, contact their parent and send them home. A child who is feeling unwell needs to be with a person who cares for them—this is usually a parent or grandparent.

While waiting for the parent to arrive, keep the child away from the main group of children, if possible. For example, they could lie on a floor cushion or mat in a corner of the room where you can still comfort and supervise them. After the child leaves, ensure that the mattress or floor cushion is cleaned before it is used again. Some infectious agents can persist on surfaces and may cause infection even if an object looks clean or is wiped clean.

8 Oberklaid, F 2004, 'Recognising serious illness in young children', *Childcare and Children's Health,* vol. 70, no. 1, viewed 11 October 2011, www.rch.org.au/emplibrary/ecconnections/CCCHVol7No1Feb2004.pdf.

When caring for an ill child, remember the main ways to break the chain of infection:

- Remind a child who is coughing or sneezing to cough or sneeze into their elbow. If the child covers their mouth with their hands, ask them to wash their hands.
- If you wipe a child's nose, dispose of the tissue in a plastic-lined rubbish bin and then wash your hands.
- If you touch a child who might be ill, avoid touching other children until after you have washed your hands.

Encourage parents to tell you when anyone in the family is ill. If someone in the family is ill, watch for signs of illness in the child.

If a child appears very unwell or has a serious injury that needs urgent medical attention, call an ambulance.

2.1.2 What to do if a child has a fever

Key things to remember about fever:[9]

- The normal temperature for a child is up to 38°C.
- Fevers are common in children.
- If the child seems well and is happy, there is no need to treat a fever.
- If the child is less than 3 months old and has a fever above 38 °C, contact the child's parent and ask them to take the child to a doctor, or ask permission to take the child to a doctor yourself.
- If the child is unhappy, treatment is needed to comfort them. Give clear fluids and, if the parents give permission, paracetamol.
- Watch the child and monitor how they are feeling.

In some cases, a child may have febrile convulsions, which are physical seizures caused by the fever. They usually last only a few seconds or minutes; however, you should call an ambulance if the convulsions last for more than 5 minutes, if the child does not wake up when the convulsions stop, or if they look very ill when the convulsions stop.[10]

Reducing the fever

Warning: Before giving any medication to a child, it is extremely important for educators and other staff to check if the child has any allergies to the medication being administered. Parental consent should be obtained before administering any medication to a child (see the medication permission form in Section 6.4).

It is usually not necessary to reduce a fever, because fever in itself is not harmful. However, medication is sometimes given to 'bring a fever down' because there is no doubt that fever can make a person feel miserable.

Some studies show that giving medication to reduce the fever can actually slow down the body's immune response to infection. In most cases, do not worry about treating the fever itself—instead, focus your attention on the way the child looks and behaves, their level of alertness, and whether there are any other symptoms that indicate serious infection, such as vomiting, coughing or convulsions.

9 Royal Children's Hospital Melbourne 2011, *Fever in children*, viewed 11 October 2011, www.rch.org.au/kidsinfo/factsheets.cfm?doc_id=5200.

10 Royal Children's Hospital Melbourne 2008, Febrile convulsions, viewed 16 March 2012, www.rch.org.au/kidsinfo/factsheets.cfm?doc_id=3722.

Medications to reduce fever include the following:[11]

- **Paracetamol** is often given when a child has a high fever (over 38.5 °C). This does not address the cause of the fever, but can help the child feel better and may bring the temperature down temporarily. It is very important to read the label carefully because paracetamol for children comes in different strengths and formulations. It is essential that the dose is appropriate for the child's weight. Follow the instructions on the bottle or box.
- **Ibuprofen** is another over-the-counter medication that is sometimes used as an alternative to paracetamol. This is also relatively safe, but avoid giving it to vomiting children or asthmatic children.
- **Aspirin** should **never** be given to children because of its side effects—it can cause stomach upsets and gastric bleeding, and is associated with a rare but potentially fatal condition called Reye syndrome.[12]

If a child has a fever, ensure they drink plenty of fluids and are not overdressed. Avoid cold-water sponging or cold baths that make the child shiver. If sponging or bathing makes the child feel more comfortable, use lukewarm water.

Scenario

Tabitha is an 18-month-old who attends your service. About 2 hours after arriving, Tabitha is flushed in the face and warm to touch. She refuses her morning tea, does not want to play with the other children and seems quite miserable. Before lunch, she has severe diarrhoea, which escapes her nappy. She has two similar episodes in the next 2 hours. When you ring Tabitha's mum to ask her to take Tabitha home, she says she is unable to get there for at least another 2 hours.

What do you do?

Points to discuss with Tabitha's mum include:

- Tabitha is unwell and needs to be with someone who cares for her.
- If she cannot pick Tabitha up, is someone else available, such as Tabitha's dad or grandmother?

While you are waiting for Tabitha's mum to collect her:

- Keep Tabitha away from the other children as much as possible. She can rest on a mattress or cushion in the room, but away from the others; this way, you can still supervise her. Make sure you clean the mattress or cushion thoroughly when Tabitha leaves.
- Try to regularly give Tabitha small amounts of fluids.
- Print a 'Diarrhoea and vomiting' fact sheet for Tabitha's mum.
- Advise Tabitha's mum that Tabitha will need to be excluded until 24 hours after her diarrhoea has stopped.

11 Women's and Children's Health Network 2010, Parenting and child health: fever, viewed 20 March 2012, www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=304&id=1798.

12 Stigall, R 2010, Reye's syndrome, viewed 20 March 2012, www.kidspot.com.au/familyhealth/Conditions-&-Disorders-Brain-&-nervous-system-Reyes-syndrome+2389+208+article.htm%20.

2.1.3 Keeping records

Keep records of any illness in children, educators or other staff at the education and care service. It may also be useful for the parents and the child's doctor to have written information on the child's illness. It is important to record which part of the education and care service the person was in for most of the day. Table 2.1 shows an example record of illness.

Table 2.1 Sample record of illness in the education and care service

Name	Age	Symptoms	Room or group	Date	Time of onset	Comments
Basil Dukakis	2	Rash on head and neck	Toddlers	4 May 2011	2pm	
Amy Johnson	6 months	Fever, runny nose	Infants	5 May 2011	1.30pm	Dad contacted. Paracetamol given 2.30pm
Jason Wong	4	Weeping eye	Preschool	5 May 2011	4pm	Mum contacted. Will collect
Aarushi Pinto	Educator	Weeping eye	Preschool	5 May 2011	5pm	

Keeping records can help prevent the spread of infection—records show you when your approach to infection control is working. They are invaluable in helping you and public health workers to identify the cause of any outbreak and how to control it.

Recording information

Record the symptoms you see as best you can, and record when you first noticed the illness. You can also record information such as the action taken (e.g. exclusion for 4 days, review of nappy changing practices) and the doctor's diagnosis.

2.1.4 Managing symptoms after immunisation

Vaccinations can cause several common side effects. These are usually mild and do not last long; treatment is not usually necessary.

Managing injection site discomfort

Many vaccine injections can cause soreness, redness, itching, swelling or burning at the injection site for 1–2 days. Paracetamol can ease this discomfort. Sometimes a small, hard lump may persist for weeks or months—this should not cause concern and does not need treatment.[13]

Managing fever after immunisation

If a child develops a fever after a vaccination, give them extra fluids to drink and do not overdress them if they are hot. It is not necessary to routinely give children paracetamol at the time of vaccination, but it may be needed if a child has a high fever after being vaccinated. Follow the instructions on the label carefully.[14]

13 National Health and Medical Research Council 2008, *Australian immunisation handbook,* 9th edn, NHMRC, Canberra.
14 National Health and Medical Research Council 2008, *Australian immunisation handbook,* 9th edn, NHMRC, Canberra.

Table 2.2 compares the potential side effects of vaccines with the effects of the diseases they help to prevent.

Table 2.2 Comparison of effects of diseases and side effects of vaccines

Disease and cause	Effects of disease	Side effects of vaccine
Diphtheria—contagious bacterium spread by droplets	Severe throat and breathing difficulties The bacteria release a toxin that can paralyse nerves and cause heart failure About 1 in 15 patients die	About 1 in 10 people have redness and swelling at the injection site, or fever Booster doses can cause swelling around the injection site, but this disappears within a few days Serious side effects are very rare
Hepatitis A—contagious virus spread by touching or ingesting water or food that has been contaminated with faeces, or by touching faeces from an infected person	Jaundice (yellowing of the skin and eyes), fever, loss of appetite, nausea, vomiting, liver pain, tiredness Recovery can take up to 1 month, and some people may need to go to hospital People are infectious up to 2 weeks before jaundice starts, and for around 1 week after the jaundice appears Young children may not show any symptoms, but they can be infectious	About 1 in 5 people have discomfort or redness and swelling at the injection site
Hepatitis B—virus spread mainly by blood or sexual contact, or from mother to infant	Either severe and sudden liver disease, or chronic liver disease About 1 in 4 people with chronic disease will develop cirrhosis (a serious disease that stops the liver functioning properly) or liver cancer	About 1 in 15 people have injection site pain, and 1 in 100 people have fever Severe allergic reactions occur in about 1 in 600 000 people
Hib (*Haemophilus influenzae* type b)—contagious bacterium spread by droplets	Meningitis, blockage of airways, bloodstream infections,bone disease About 1 in 20 people with Hib meningitis die, and about 1 in 4 survivors have permanent brain or nerve damage About 1 in 100 people with blocked airways die	About 1 in 20 people have discomfort or redness and swelling at the injection site About 1 in 50 people have fever
Human papillomavirus (HPV)—virus spread mainly by sexual contact	Cervical cancer in women	About 8 in 10 people have pain at the injection site, and 2 in 10 people have redness and swelling at the injection site Headache, fever and nausea occur very rarely
Influenza—contagious virus spread by droplets	Fever, muscle and joint pains, pneumonia. Elderly people are likely to need hospitalisation High-risk groups include elderly people, pregnant women, people who are diabetic, and people who are alcoholic	About 1 in 10 people have redness and swelling at the injection site For every million influenza vaccinations, around 1 person may develop a rare but serious condition known as Guillain-Barré syndrome, which affects the nervous system
Measles—highly infectious virus spread by airborne droplets	Fever, cough, rash. One in 15 children develop pneumonia One in 1000 children have brain inflammation—1 in 10 of these die, and 4 in 10 of these have permanent brain damage About 1 in 100 000 people develop a fatal degenerative brain disease	About 1 in 10 people have discomfort, redness and swelling at the injection site, or fever About 1 in 20 people develop a non-infectious rash Less than 1 in a million people may develop inflammation of the brain

Disease and cause	Effects of disease	Side effects of vaccine
Meningococcal infections—bacteria spread by droplets	Brain infection (meningitis) and bloodstream infection, often with a severe rash About 1 in 10 people die Of those that survive, 1 in 30 people have limbs amputated or have severe skin scarring, and 1 in 30 people have severe brain damage	About 1 in 10 people have redness and swelling at the injection site, fever, irritability, loss of appetite or headaches
Mumps—contagious virus spread by saliva	Swollen neck and salivary glands, fever One in 200 children develop brain swelling; 1 in 5 males past puberty develop inflammation of the testes Sometimes causes infertility or deafness	One in 100 people develop swelling of the salivary glands One in 3 million people develop mild brain swelling
Pertussis (whooping cough)—contagious bacterium spread by droplets	Severe cough and vomiting for up to 3 months About 1 in 200 children with pertussis who are less than 6 months old die from pneumonia or brain damage	Around 1 in 10 people have redness and swelling at the injection site, or fever Booster doses can cause swelling around the injection site, but this disappears within a few days Serious side effects are very rare
Pneumococcal infections—bacterium spread by droplets	Fever, pneumonia, bloodstream infection, meningitis About 1 in 10 people with pneumococcal meningitis die	There are two vaccines for pneumococcal disease Common side effects in people vaccinated with the 13-valent pneumococcal conjugate vaccine (13vPCV) are redness, pain or tenderness at the injection site; fever; poor appetite; and restlessness About 1 in 2 people vaccinated with the 23-valent pneumococcal polysaccharide vaccine (23vPPV) have redness and swelling at the injection site
Polio—contagious virus spread by faeces and saliva	Fever, headache,vomiting; may cause paralysis Many infections do not cause any symptoms About 1 in 20 hospitalised people die, and 1 in 2 people who survive are permanently paralysed	Redness, pain and swelling at the injection site are common Up to 1 in 10 people have fever, crying and decreased appetite
Rotavirus—virus spread by faecal–oral route	Mild to severe gastroenteritis. Every year in Australia, rotavirus infections in children <5 years old cause: • around 10 000 hospitalisations • around 115 000 general practitioner visits • around 22 000 emergency department visits Illness can range from mild, watery diarrhoea that does not last for long, to severe, dehydrating diarrhoea and fever, which can cause death	Between 1 in 100 and 3 in 100 people may develop diarrhoea or vomiting in the week after being vaccinated

Disease and cause	Effects of disease	Side effects of vaccine
Rubella—contagious virus spread by droplets	Fever, rash, swollen glands; severe defects in unborn babies with infected mothers About 5 in 10 people develop a rash and painful swollen glands; 5 in 10 adolescents and adults have painful joints; 1 in 3000 people develop bruising or bleeding; 1 in 6000 people develop inflammation of the brain; 9 in 10 infants who were infected during the first 10 weeks after conception have major birth defects (such as deafness, blindness or heart defects)	About 1 in 10 people have discomfort, redness and swelling at the injection site, or fever About 1 in 20 people have swollen glands, stiff neck or joint pains About 1 in 20 people have a non-infectious rash About 1 in 30 500 people have bruising or bleeding after a first dose of measles–mumps–rubella vaccine
Tetanus—caused by the toxin of bacteria in soil	Painful muscle spasms, convulsions, lockjaw About 3 in 100 people die The risk is greatest for very young or elderly people	Around 1 in 10 people have redness and swelling at the injection site, or fever Booster doses can cause swelling around the injection site, but this disappears within a few days Serious side effects are very rare
Varicella (chickenpox)—caused by a highly contagious virus	Low-grade fever and rash with blisters Reactivation of the virus later in life causes shingles One in 100 000 people develop brain inflammation About 3 in 100 000 people die Infection during pregnancy can cause birth defects If the mother becomes infected from 5 days before delivery to 2 days after delivery, the newborn will have severe infection in up to one-third of cases	About 1 in 5 people have redness and swelling at the injection site, or fever A mild chickenpox-like rash may develop in 3 to 5 people in every 100 people

Source: Adapted from National Health and Medical Research Council 2008, *The Australian immunisation handbook*, 9th edn, NHMRC, Canberra.

PART 3
Procedures

Summary

Part 3 outlines some common procedures that can help education and care services prevent and control the spread of infections. These include how to:

- perform effective hand hygiene
- use gloves appropriately
- change nappies and assist children in toileting
- deal with spills of blood, faeces, vomit, urine and nasal discharge
- clean the education and care service
- ensure that food is safely stored and prepared.

Evidence base

The information in Part 3 is based on:

- Food Standards Australia New Zealand 2007, 'Food safety standard 3.2.2: Food safety practices and general requirements', in *Food safety standards*, FSANZ, Canberra
- Grampians Region Infection Control Group 2010, *Environmental services: a little yellow infection control book*, Victorian Department of Health, Melbourne
- National Health and Medical Research Council 2003, *Dietary guidelines for children and adolescents in Australia incorporating the infant feeding guidelines for health workers*, NHMRC, Canberra
- National Health and Medical Research Council 2005, *Staying healthy in child care: preventing infectious diseases in child care*, 4th edn, NHMRC, Canberra
- National Health and Medical Research Council 2010, *Australian guidelines for the prevention and control of infection in healthcare*, NHMRC, Canberra
- Queensland Health 2008, *Infection control guidelines for animal contact*, Queensland Health, Brisbane
- Queensland Health 2010, *Storing breastmilk*, Queensland Government, Brisbane
- World Health Organization and Food and Agriculture Organization of the United Nations 2007, *Safe preparation, storage and handling of powdered infant formula: guidelines*, WHO, Geneva
- other sources as specified in the text.

3.1 Personal hygiene

3.1.1 Hand hygiene

Hand hygiene is one of the most simple and effective ways to break the chain of infection.

The most effective method of hand hygiene is using soap and water, and this is the best option when your hands are visibly dirty.

If your hands are not visibly dirty, using alcohol-based hand rub is a fast, effective way to remove germs from your hands that may have been picked up from touching contaminated surfaces.

Section 1.3.1 explains why hand hygiene is one of the best ways to break the chain of infection

When to perform hand hygiene

Many germs can spread easily to other people or onto surfaces via contaminated hands. Think about the chain of infection when you think about hand hygiene—as a general rule, perform hand hygiene **before** you touch anything that should stay clean (such as before eating or preparing food) and **after** touching anything that might contaminate your hands (such as after using the toilet or wiping a child's nose). Examples of when to perform hand hygiene are shown in Table 3.1.

Infants need their hands washed as often and as thoroughly as older children:

- If the infant can stand at a small hand basin, wash their hands the same way you wash your own hands.
- If the infant cannot stand at a hand basin, wash their hands with pre-moistened disposable wipes, then dry thoroughly.

See Section 1.2.1 for a description of the chain of infection

Table 3.1 When to perform hand hygiene

	Before	After
Educators and other staff	Starting work, so germs are not introduced into the service Eating or handling food Giving medication Putting on gloves Applying sunscreen or other lotions to one or more children Going home, so germs are not taken home with you	Taking off gloves Changing a nappy Cleaning the nappy change area Using the toilet Helping children use the toilet Coming in from outside play Wiping a child's nose or your own nose Eating or handling food Handling garbage Cleaning up faeces, vomit or blood Applying sunscreen or other lotions to one or more children Touching animals
Children	Starting the day at the service; parents can help with this Eating or handling food Going home, so germs are not taken home with them	Eating or handling food Touching nose secretions Using the toilet Having their nappy changed—their hands will become contaminated while they are on the change mat Coming in from outside play Touching animals

How to wash hands with soap and water

The process of thoroughly washing, rinsing and drying your hands or a child's hands should take around 30 seconds.

There are five steps to washing hands:

1. Wet hands with running water (preferably warm water, for comfort).
2. Apply soap to hands.
3. Lather soap and rub hands thoroughly, including the wrists, the palms, between the fingers, around the thumbs and under the nails. Rub hands together for at least 15 seconds (for about as long as it takes to sing 'Happy birthday' once).
4. Rinse thoroughly under running water.
5. Dry thoroughly.

Hands can be dried with paper towel or cloth towels. Cloth towels, if used, should be used by one person (i.e. not shared) and hung up to dry between uses. Cloth towels should be laundered regularly to reduce the risk of recontaminating or cross-contaminating hands. Supervise children when washing their hands, and help them get into the habit of hand hygiene.

If you wear rings or other jewellery on your hands, move the jewellery around your finger while you lather the soap to ensure that the area underneath the jewellery is clean.

Always wet hands first before applying soap. This helps the soap to lather more and prevents the skin from drying.

How to clean hands with alcohol-based hand rub

Only use an alcohol-based hand rub if your hands are not visibly dirty. The hand rub should contain 60–80% alcohol.

There are three steps to using alcohol-based hand rub:

1. Apply the amount of hand rub recommended by the manufacturer to palms of dry hands.
2. Rub hands together, making sure you cover in between fingers, around thumbs and under nails.
3. Rub until hands are dry.

3.1.2 Using gloves

Do I really need to wear gloves?

If there is a chance that you may come in contact with faeces, urine, saliva, vomit or blood, you should wear disposable gloves. If you are not likely to come in contact with these body fluids, there is no need to wear gloves.

If you do come in contact with body fluids but gloves are not available, it is important to thoroughly wash your hands with soap and water as soon as you finish the activity.

Appropriate use of gloves can also be part of effective hand hygiene. Table 3.2 shows when you should wear disposable gloves and when you should wear reusable gloves.

Table 3.2 When to wear gloves

Type of gloves	When to wear them	How to maintain them	Examples
Disposable gloves	When there is a chance you may come in contact with body fluids, including faeces, urine, saliva, vomit or blood	No maintenance—use them once and throw them away; do not reuse	Changing nappies Managing cuts and abrasions Cleaning spills of body fluids
Reusable gloves	When cleaning the education and care service When preparing bleach solutions for use after cleaning a surface	Clean according to the manufacturer's instructions Store dry between uses Replace when showing signs of wear	General cleaning duties

Disposable gloves

Disposable gloves should never be reused or washed for reuse. They must be thrown away as soon as you have finished the activity that requires gloves.

Always wash your hands before and after wearing disposable gloves. Wear gloves on both hands:

- when changing nappies—there are billions of germs in faeces and sometimes in urine; see Section 3.2 for more details
- when cleaning up faeces, urine, blood, saliva or vomit, including when it is on clothes.

However, note that overuse of gloves can cause skin reactions and sensitivity.

It is important to remember that the outside of the glove is dirty and the inside of the glove is clean. Avoid touching the inside of a glove with the outside of another glove, and avoid touching bare skin or clean surfaces while wearing contaminated gloves.

How to remove disposable gloves

- Pinch the outside of one glove near the wrist and peel the glove off so it ends up inside out.
- Keep hold of the peeled-off glove in your gloved hand while you take off the other glove—put one or two fingers of your ungloved hand inside the wrist of the other glove. Peel off the second glove from the inside, and over the first glove, so you end up with the two gloves inside out, one inside the other.
- Put the gloves in a plastic-lined, hands-free lidded rubbish bin, and wash your hands. If a hands-free lidded rubbish bin is not available, put the gloves in a bucket or container lined with a plastic bag, then tie up the bag and take it to the outside garbage bin.

3.2 Hygienic nappy changing and toileting

Faeces (and sometimes urine) contain billions of germs. Hygienic nappy changing and toileting is important to prevent these germs from spreading disease.

3.2.1 Nappy changing

Parents and education and care services may have different preferences for nappies: some may choose to use cloth nappies, and some may choose disposable nappies. However, the use of disposable nappies is strongly encouraged in education and care services. This is because disposable nappies are less likely to spread germs into the environment[15] because they are less prone to 'leaking' than cloth nappies and can be disposed of immediately.

Whether you choose cloth nappies or disposable nappies, it is important to minimise the risk of contact with urine and faeces when dealing with soiled nappies. This includes keeping soiled nappies in a contained space, and having a separate, dedicated nappy change area.

An area should be specifically set aside for changing nappies. Ensure that the nappy change mat or surface is not torn and can be easily cleaned. Do not share the same nappy change mat with children from another room, if possible. Having separate change mats for each room can help limit the spread of an infection and contain it to a single room. If this is not possible, take extra care to ensure that the change mat is thoroughly cleaned after each nappy change, especially if a child is known to have an infection.

Check that all the supplies you need are ready. If the child can walk, walk with them to the changing area. If the child cannot walk, pick them up and carry them to the changing area. If there are faeces on the child's body or clothes, hold the child away from your body if you need to carry them.

Table 3.3 shows the best way to stop disease spreading when changing nappies.

Table 3.3 Nappy changing procedure

PREPARATION	CHANGING	CLEANING
1. Wash your hands	4. Remove the child's nappy and put any disposable nappy in a hands-free lidded bin. Place any soiled clothes (including any cloth nappy) in a plastic bag	12. After each nappy change, clean the change table with detergent and warm water, then rinse and dry
2. Place paper on the change table	5. Clean the child's bottom	**13. Wash your hands**
3. Put disposable gloves on both hands	6. Remove the paper and put it in a hands-free lidded bin	
	7. Remove your gloves and put them in the bin	
	8. Place a clean nappy on the child	
	9. Dress the child	
	10. Take the child away from the change table	
	11. Wash your hands and the child's hands	

15 Van, R, Wun, C-C, Morrow, AL and Pickering, LK 1991, 'The effect of diaper type and overclothing on fecal contamination in day-care centers', *Journal of the American Medical Association,* vol. 265, no. 14, pp. 1840–4.

Table 3.3 shows three stages in the nappy changing procedure: preparation, changing and cleaning. You are most likely to come in contact with germs during the changing stage, shown in orange. It is also important to note that the person changing the nappy should wash their hands three times during the entire procedure: before they start, after changing the nappy and after cleaning the change table.

Placing paper on the change table

Every time a child has their nappy changed, germs are put on the change table. Placing a piece of paper on the change table catches many of these germs so they do not reach the change table itself. Any paper can be used for this, including paper towel (but this can be expensive), greaseproof paper or large sheets of butcher's paper or recycled paper. The paper is removed in the middle of the nappy change, before the child's clean clothes are put on, and the paper and the germs are put in the bin. If an education and care service does not wish to use paper on the change table, extra care must be taken in cleaning the change mat between nappy changes.

Wearing disposable gloves

Disposable gloves should always be worn on both hands when changing nappies, to prevent the spread of germs in faeces and urine. Wear gloves only during the part of the nappy changing process when you may come in contact with faeces or urine. Once the child is clean and the paper has been removed from the change table, remove your gloves so you will not touch the clean child with dirty gloves.

For details on how to remove gloves properly, see Section 3.1.2

Cleaning the child

Pre-moistened disposable wipes are recommended to clean the child.

Cleaning the change table

Try to have at least two nappy change surfaces for each day as an additional way to prevent the spread of disease. A waterproof sheet over the change mat can be the morning surface; this can be removed for the afternoon.

For more information on effective environmental cleaning, including the nappy change area, see Section 3.4

Mattresses and covers used on the nappy change table need to be smooth and in good condition, because germs can survive in cracks, holes, creases, pleats, folds or seams.

This is the best method to keep the nappy change table clean[a]:

- After each nappy change and at the end of each day, wash the surface well with detergent and warm water, rubbing with paper towel or a cloth as you wash. Put the paper towel in the bin, or put the cloth aside for washing after each nappy change—there will be many germs on this cloth, and it cannot be used again until it has been washed. Leave the change surface to dry. See Section 3.3 for information on how to clean the nappy change table if the child had diarrhoea.
- If faeces or urine spill onto the change surface, clean the surface with detergent and warm water and leave it to dry.
- Halfway through the day, remove the morning change mat or waterproof sheet, clean it with detergent and water and leave it to dry, preferably outside in the sun. Use the fresh mat for the afternoon.
- Always wash your hands after cleaning the nappy change area.

[a] To ensure the nappy change table is cleaned correctly, follow the process on page 45 (table 3.3).

3.2.2 Toilet training

Ask parents to supply a clean change of clothing for children who are toilet training. Place soiled clothes in a plastic bag or alternative, and keep these bags in a designated place until parents can take them home.

Help the child use the toilet. It is better for the child to use the toilet rather than a potty chair, which increases the risk of spreading disease. If the child must use a potty, empty the contents into the toilet and wash the chair with detergent and warm water. Do not wash the potty in a sink used for washing hands.

Children, especially girls, should be encouraged to wipe front to back, to reduce the chance of introducing bowel bacteria to the urinary tract.

After toileting, help the child wash their hands. Ask older children if they washed their hands. Explain to the child that washing their hands and drying them properly will stop germs that might make them ill. Always wash your own hands after helping children use the toilet.

3.3 Safely dealing with spills

Accidental spills of body fluids—including blood, vomit, urine, faeces and nasal discharge—are a fact of life within education and care services. Prompt management of spots and spills, including removing the spilled substance, and cleaning and disinfecting the area, reduces the potential risk to children, educators and other staff in education and care services.

Prevention is better than cure. Strategies to prevent spills of body fluids include:

- regularly toileting children
- using disposable nappies rather than cloth nappies
- excluding children with vomiting or diarrhoea
- making sure children play safely.

If a spill does occur, it is important to avoid direct contact with body fluids. Healthy skin is an effective barrier against infectious body fluids, so make sure any cuts or abrasions on your hands are covered with a waterproof dressing, and wear gloves, if possible.

Have a spill kit readily accessible for educators and other staff to use. The spill kit can be in the form of a bucket filled with all the necessary equipment to clean up a spill, including:

- disposable gloves
- paper towel
- disposable cloths or sponge
- detergent
- disposable scraper and pan to scoop
- bleach (sodium hypochlorite).

3.3.1 Blood

Children must be supervised at all times, and it is important to ensure that they play safely. If a child is bleeding, through either an injury, bites from other children or a nosebleed, you need to:

- look after the child
- allow the first-aid officer to dress the wound (if appropriate)
- check that no-one else has come in contact with the blood
- clean up the blood.

Looking after the child

- Avoid contact with the blood.
- Comfort the child and move them to safety, away from other children.
- Put on gloves, if available.
  - If gloves are not available, take the first opportunity to get someone wearing gloves to take over from you. Then **wash your hands**.
- Apply pressure to the bleeding area with a bandage or paper towel.
- Elevate the bleeding area, unless you suspect a broken bone.

- Send for the first-aid officer (if appropriate).
- When the wound is covered and no longer bleeding, remove your gloves, put them in a plastic bag or alternative, seal the bag and place it in the rubbish bin.
- **Wash your hands** thoroughly with soap and running water (preferably warm water).

When cleaning or treating a child's face that has blood on it, do not put yourself at eye level with the child—their blood could enter your eyes or mouth if the child is crying or coughing.

Dressing the wound

This should be done by the first-aid officer, if appropriate.

- Wear gloves, if there is time.
- Dress the wound with a bandage or suitable substitute and seek medical assistance.
  - If it is an emergency, call 000 for an ambulance.
  - If the situation is not urgent, call the child's parent.
- Remove your gloves, put them in a plastic bag or alternative, seal the bag and place it in the rubbish bin.
- Wash your hands thoroughly with soap and running water (preferably warm water).

Checking for contact with blood

Ask the adults and children in the area of the spill if they have come into contact with the blood. If they have, remove any blood from the person with soap and water and make sure they wash their hands thoroughly.

Cleaning the blood spill

The best way to clean a blood spill depends on the size of the spill. Table 3.4 will help educators and other staff decide on the most appropriate cleaning strategy.

Table 3.4 Recommended methods for cleaning blood spills

Size of spill	What to do
Spot (e.g. drop of blood less than the size of a 50-cent coin)	• Wear gloves • Wipe up blood immediately with a damp cloth, tissue or paper towel • Place the cloth, tissue or paper towel in a plastic bag or alternative; seal the bag and put it in the rubbish bin • Remove gloves and put them in the rubbish bin • Wash surface with detergent and warm water • Wash your hands with soap and water
Small (up to the size of the palm of your hand)	• Wear gloves • Place paper towel over the spill and allow the blood to soak in • Carefully lift the paper towel and place it in a plastic bag or alternative; seal the bag and put it in the rubbish bin • Remove gloves and put them in the rubbish bin • Clean the area with warm water and detergent using a disposable cloth or sponge; place the cloth in the rubbish bin • Wipe the area with diluted bleach[a] and allow to dry • Wash your hands with soap and water

Size of spill	What to do
Large (more than the size of the palm of your hand)	• Wear gloves • Cover the area with an absorbent agent (e.g. kitty litter or sand) and allow the blood to soak in • Use a disposable scraper and pan to scoop up the absorbent material and any unabsorbed blood or body fluids • Place the absorbent agent, the scraper and the pan into a plastic bag or alternative; seal the bag and put in the rubbish bin • Remove gloves and put them in the rubbish bin • Mop the area with warm water and detergent; wash the mop after use • Wipe the area with diluted bleach[a] and allow to dry • Wash your hands with soap and water

a See 'Preparing bleach solution', below.

Adapted from National Health and Medical Research Council 2010, *Australian guidelines for the prevention and control of infection in healthcare*, NHMRC, Canberra.

Preparing bleach solution

Always prepare bleach solutions according to the manufacturer's instructions. Because bleach loses strength over time, always make up new dilutions of bleach every day. Any diluted bleach that is not used within 24 hours of preparation should be discarded.

Safe use of bleach

Always:

- Read and follow the safety and handling instructions on the label.
- Dilute bleach according to directions.
- Wear gloves when handling and preparing bleach.
- Check the use-by date before using bleach, because it can lose effectiveness during storage.
- Make up a new batch of bleach each time you disinfect—it loses its effectiveness quickly once it has been diluted.

Never:

- Use bleach in a spray bottle.
- Use hot water to dilute bleach.
- Mix bleach with any other chemicals.
- Use bleach on metals other than stainless steel—bleach is corrosive.

3.3.2 Faeces, vomit and urine

When cleaning up spills of faeces, vomit or urine, the following procedures should be used:

- Wear gloves.
- Place paper towel over the spill and allow the spill to soak in. Carefully remove the paper towel and any solid matter. Place it in a plastic bag or alternative, seal the bag and put it in the rubbish bin.
- Clean the surface with warm water and detergent, and allow to dry.
- If the spill came from a person who is known or suspected to have an infectious disease (e.g. diarrhoea or vomit from a child with gastroenteritis), use a disinfectant on the surface after cleaning it with detergent and warm water.
- Wash hands thoroughly with soap and running water (preferably warm water).

See Figure 3.1 in Section 3.4.2 to help you decide when to use detergent and warm water, and when to use disinfectant

3.3.3 Nasal discharge

Washing your hands every time you wipe a child's nose will reduce the spread of colds. If you cannot wash your hands after every nose wipe, use an alcohol-based hand rub.

It is not necessary to wear gloves when wiping a child's nose. If you do wear gloves, you must remove your gloves and wash your hands or use an alcohol-based hand rub afterwards.

Dispose of dirty tissues immediately.

3.4 Cleaning the education and care service

The aim of environmental cleaning is to minimise the number of germs that survive on surfaces in the education and care service. (See Section 1.3.4 for the rationale behind environmental cleaning.) It is advisable to use warm water when cleaning because this makes it easier to remove dirt from a surface. However, cold water and a little extra scrubbing can also be used to effectively clean a surface.

Start the cleaning process in the cleanest areas and finish in the dirtier areas. This method helps to prevent cross-infection because it decreases the risk of contaminating a clean room with germs from a dirty room.[16]

Basic steps for effective routine cleaning

- Use detergent and warm water. Follow the manufacturer's instructions on how much detergent to use.
- Vigorously rub the surface to physically remove germs.
- Rinse the surface with clean water.
- Dry the surface.

3.4.1 Cleaning equipment

Appropriate cleaning equipment includes mops with detachable heads (so they can be laundered in a washing machine using hot water), disposable cloths or cloths that can be laundered, and vacuum cleaners fitted with HEPA (high-efficiency particulate air) filters to reduce dust dispersion. Ensure that cleaning equipment is well maintained, cleaned, and stored so it can dry between uses.

It can be useful to have colour-coded cloths or sponges for each area (e.g. blue in the bathroom, yellow in the kitchen) so that it is easier to keep them separate. Wear utility gloves when cleaning and hang them outside to dry. Wash your hands after removing the gloves.

When choosing cleaning products, it is important to consider the product's effectiveness against germs and the length of time the product must be in contact with a surface to properly clean it.

3.4.2 When to clean

Table 3.5 shows how often different surfaces and areas should be cleaned. If the education and care service does not have control over cleaning (e.g. if a separate organisation provides or supervises cleaning services), make sure the cleaning staff are aware of the requirements in Table 3.5.

16 Grampians Region Infection Control Group 2010, *Environmental services: a little yellow infection control book*, Victorian Department of Health, Melbourne.

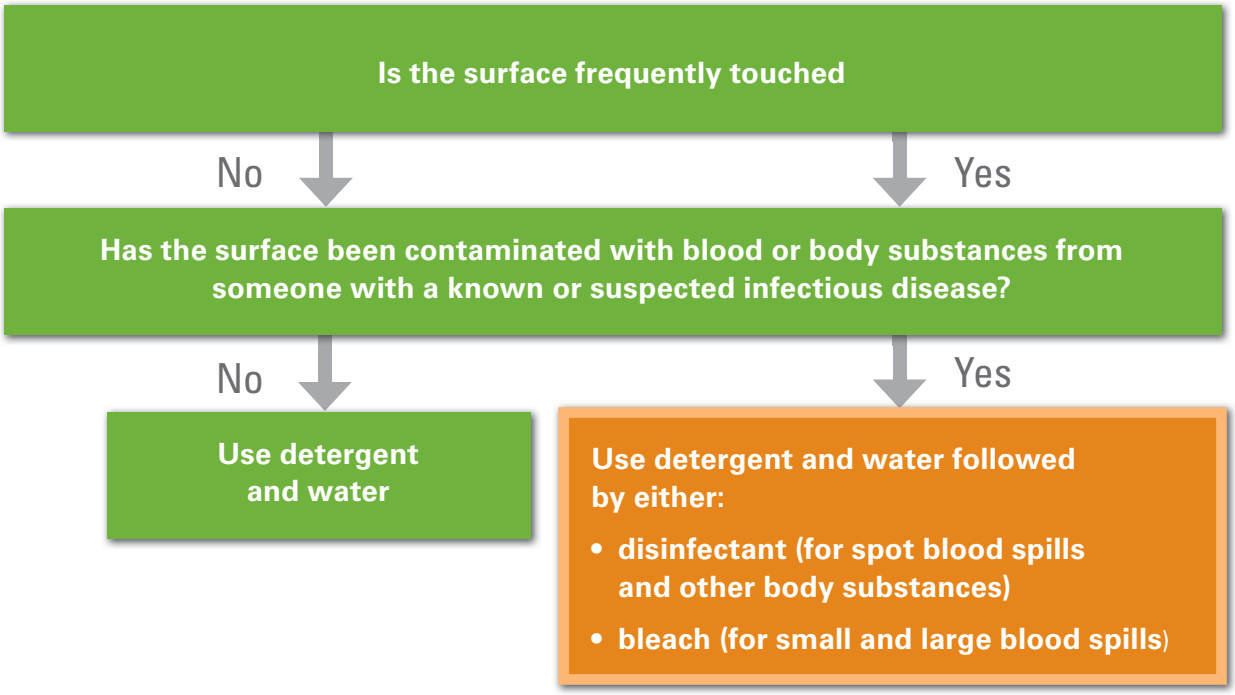
Table 3.5 When to clean different surfaces

Surface or area	Wash daily plus when visibly dirty	Wash weekly plus when visibly dirty
Bathrooms—wash tap handles, toilet seats, toilet handles and door knobs. Check the bathroom during the day and clean if visibly dirty	✓	
Toys and objects put in the mouth	✓	
Surfaces that children have frequent contact with (e.g. bench tops, taps, cots and tables)	✓	
Beds, stretchers, linen and mattress covers (if children do not use the same mattress cover every day)	✓	
Door knobs	✓	
Floors	✓	
Low shelves		✓
Other surfaces not often touched by children		✓

Disinfectants are only necessary if a surface is known to be contaminated with potentially infectious material. Remember, if the surface is not clean, the disinfectants cannot kill germs, so you should always clean first, then (if required) disinfect.

Figure 3.1 will help you decide whether or not you need to use disinfectant.

Figure 3.1 Decision tree: when to use disinfectant



Adapted from National Health and Medical Research Council 2010, *Australian guidelines for the prevention and control of infection in healthcare*, NHMRC, Canberra.

Contact your public health unit if there are two or more cases of gastroenteritis in the education and care service. They will advise you if a particular disinfectant should be used. If it is necessary to use a disinfectant, make sure it is in contact with the surface for enough time to kill the germs. This should be at least 10 minutes.

See Section 6.2 for contact details of public health units

3.4.3 Special considerations for cleaning

Bathrooms and toilets

Bathrooms and toilets should be cleaned at least once a day, and more often if they are visibly dirty. Ensure that the education and care service has bathrooms and toilets that are appropriate for staff and visitors as well as children; these should include appropriate disposal bins for sanitary products.

Nappy change area

After each nappy change, clean the nappy change area thoroughly with detergent and water, rinsing and drying with single-use paper towel. If faeces or urine spill onto the change table or mat, clean it with detergent and water, then rinse and dry with single-use paper towel.

If possible, it is useful to have at least two nappy change surfaces for each day. At the end of the morning and at the end of the day, remove the nappy change surface (waterproof sheet or change mat), wash it with warm water and detergent and dry it, preferably in the sun.

For more details on nappy changing procedures, see Section 3.2.1

Clothing

Staff clothing or over-clothing should be washed daily with detergent, preferably in hot water. It is recommended that children's dress-up clothes are washed once a week in hot water and detergent, plus when they are visibly dirty.

Linen

Wash linen in detergent and hot water. Do not carry used linen against your own clothing or coverall—take it to the laundry in a basket, plastic bag or alternative.

Treat soiled linen as you would a soiled nappy, and wear gloves. If washed at the education and care service, soiled linen should be:

- soaked to remove the bulk of the contamination
- washed separately in warm to hot water with detergent
- dried in the sun or on a hot cycle in the clothes dryer.

Cots

If a child soils a crib or cot:

- **wash your hands** and put on gloves
- clean the child
- remove your gloves
- dress the child and **wash the child's hands and your hands**
- put on gloves
- clean the cot
  - remove the bulk of the soiling or spill with absorbent paper towels
  - place the soiled linen in a plastic-lined, lidded laundry bin
  - remove any visible soiling of the cot or mattress by cleaning thoroughly with detergent and water
- remove your gloves and **wash your hands**
- provide clean linen for the cot.

Dummies

Never let children share dummies. When not in use, dummies should be stored in individual plastic containers labelled with the child's name. Store dummies out of children's reach, and do not let the dummies come in contact with another dummy or toy.

Toothbrushes

Never let children share toothbrushes. Each toothbrush should be labelled with the child's name. Because bacteria can grow on wet toothbrushes, the bristles should be exposed to the air and allowed to dry after each use—do not let toothbrushes drip on one another. Store them out of the reach of children, but do not store them in individual containers, because this stops them from drying.

Toys

Washing toys effectively is very important to reduce spread of disease. Toys need to be washed at the end of each day, especially those in rooms with younger children. Wash toys in warm water and detergent, and rinse them well—many toys can be cleaned in a dishwasher (but not at the same time as dishes). All toys, including cloth toys and books, can be dried by sunlight.

Only buy washable toys, and discard non-washable toys that are for general use. Individual non-washable toys may be assigned to a child and kept in the child's cot for the use of that child only.

Books should be inspected for visible dirt. They can be cleaned by wiping with a moist cloth with detergent on it, and allowing to dry. Keep damp or wet books out of use until they are dry.

Remove toys for washing during the day. Start a 'Toys to wash' box and place toys in it during the day if you see a child sneeze on a toy or put a toy in their mouth, or if the toy has been used by a child who is unwell. Toys can also be split into two lots and rotated between washing one day and in use the next.

In the nappy change area, have a box of clean toys and a box of toys to be washed. Give a child a clean toy if they need one while being changed. Immediately after the nappy change, place the toy in the 'Toys to wash' box.

Cushions

Make sure that all cushions, including large floor cushions, have removable cushion covers that can be changed and washed daily, as well as when they are visibly dirty.

Carpets, mats and curtains

Carpets and mats should be vacuumed daily and steam cleaned at least every 6 months. Curtains should be washed every 6 months and when they are visibly dirty. Spot clean carpets, mats and curtains if they are visibly dirty in a small area.

3.5 Food safety

Education and care services must prepare and provide food in a way that is safe for the children in their care, to reduce the risk of spreading infectious diseases through food. Standard 3.3.1 of the Australia New Zealand Food Standards Code states that education and care services must have a documented food safety program. Food safety is monitored by the health department in each state and territory; check your health department's website for the specific requirements for food safety.

Food is an excellent place for germs to grow—in the right conditions, the number of bacteria in food can double every 30 minutes. Germs that do not grow in food can still be passed from person to person in food. Germs that are common on our skin and in the environment can cause food poisoning if they grow to large numbers in food.

For these reasons, food safety is an important part of infection control in education and care services. The best ways to prevent diseases spreading through food are hand hygiene; not sharing food, plates or utensils; preparing and storing food properly; and keeping food preparation areas clean. Disinfectants are not routinely needed in food preparation areas if surfaces are thoroughly cleaned with detergent in hot water and allowed to dry.

This section highlights the basic principles of food preparation. For more detailed advice on food safety, see your education and care service's food safety plan.

See Part 1—Concepts in infection control for more details on how hand hygiene and effective environmental cleaning can help break the chain of infection

Education and care services in which staff both change nappies and prepare or serve food on the same day have more than three times as many cases of diarrhoea as settings in which educators and other staff do not do both these jobs on the same day. For this reason, the person who prepares and serves food should, wherever possible, not be the person who changes nappies or helps children go to the toilet on that day.

Always wash and dry your hands before handling food. There is no need to wear gloves when preparing food if your hands are clean and dry.,Gloves are not a substitute for clean hands.

3.5.1 Basics for meals and snacks

- Clean the surfaces that will come in contact with the food and with the utensils that are to be used for the meal.
- Wash and dry your hands thoroughly before preparing or serving food.
- Check that all children have washed and dried their hands before they eat or drink.

The same guidelines apply when you are preparing to give an infant a bottle as when you are preparing food for older children to eat.

During the meal:

- If children are sharing food from a common bowl or plate, make sure they understand that they need to use tongs, spoons or other appropriate utensils to take the food they want to eat. Remind them that they cannot touch food that is being shared because this can spread germs that might make them or other children ill. This is why it is important to use utensils, not your hands, when taking food from a common bowl or plate.
- Do not allow children to share individual eating or drinking utensils, or take food from other children's plates or bowls.
- Use a separate spoon for each infant you feed.
- Teach children to turn away from food when they cough or sneeze, and then to wash their hands.
- If you are interrupted to care for another child while preparing food or spoon-feeding an infant, be sure to wash your hands again before you continue.

3.5.2 Preparing food

Always wash and dry your hands before handling food. Education and care services must have a hand basin (separate from the kitchen sink), soap and disposable towels in the kitchen so that educators and other staff who are preparing food can easily wash their hands. Check your state or territory's food safety legislation for any other requirements.

All staff should wear clean overalls or an apron when working in the kitchen. The kitchen should be fly-proof and vermin-proof.

Heating and cooling food

Keep food hot (more than 60°C) or cold (5°C or less);[17] otherwise, do not keep it at all. Heating and cooling food properly will help prevent germs from growing in the food.

Australia's food safety standards state that reheated food should reach 60°C. Heating to this temperature will destroy germs that may have grown in the food since it was cooked. However, it is recommended that food is reheated until it reaches 70 °C, and should stay at this temperature for 2 minutes. This is because the education and care service may not know if the prepared food has been within the temperature 'danger zone' (5–60°C).

Heat food, or milk for bottles **once only**. Do not allow it to cool and then reheat it—this can allow germs to grow.

17 Food Standards Australia New Zealand 2007, 'Food safety standard 3.2.2: Food safety practices and general requirements', in *Food safety standards,* FSANZ, Canberra.

Use a food thermometer to ensure that cooked or reheated food reaches the correct temperature. Keep a non-mercury thermometer in your fridge so that you can check that the temperature is below 5°C.

Check that the food has cooled before giving it to the child. Remove a small piece of food with a spoon to another plate and test the temperature of the food with your hand. Throw this piece of food away and wash the spoon.

Throw out all leftovers. Tell parents what food their child left, but do not return the leftover food to the parents.

Separating raw and cooked foods

If foods have been properly reheated, any germs that were in the food will have been killed. It is important not to let raw food come in contact with cooked food, because the raw food may have germs in it.

To prevent cross-contamination between raw and cooked foods:

- keep raw and cooked foods separate, even in the fridge
- keep cooked food above uncooked food in the fridge
- use separate utensils (such as cutting boards and knives) for raw and cooked food.

3.5.3 Preparing, storing and heating bottles

Bottles of breast milk and formula need to be carefully prepared, stored and heated.

Breast milk contains the mother's antibodies, which help prevent illness in infants. Encourage and support mothers of infants up to 12 months old to provide expressed breast milk, or to visit the education and care service to feed their infants.

Preparing bottles

When preparing formula, always wash your hands first, and ensure that work surfaces, bottles and other equipment are clean. Follow the manufacturer's instructions carefully.

Storing bottles

Formula or breast milk needs to be kept refrigerated or frozen. Keep a non-mercury thermometer in your fridge so that you can check that the temperature is below 5°C. All bottles need to be labelled with the child's name and the date the bottle was prepared or brought in by the parent.

It is best to make up fresh formula for each feed and give it to the child as soon as it has cooled. If this is not possible, the freshly made formula should be cooled immediately and stored in the back of the refrigerator (where it is coldest) for no more than 24 hours. Throw away any formula that is left over. Do not freeze or reheat leftover made-up formula.[18]

Breast milk can be stored in several ways.[19] It can be:

- refrigerated for 3–5 days at 4°C or lower (4°C is the typical temperature of a standard fridge); always store breast milk at the back of the refrigerator, not in the door
- stored without refrigeration (if needed) for 6–8 hours if the room temperature is less than 26°C

18 National Health and Medical Research Council 2003, *Dietary guidelines for children and adolescents in Australia incorporating the infant feeding guidelines for health workers*, NHMRC, Canberra.

19 National Health and Medical Research Council 2003, *Dietary guidelines for children and adolescents in Australia incorporating the infant feeding guidelines for health workers*, NHMRC, Canberra; Queensland Health 2010, *Storing breastmilk,* Queensland Government, Brisbane, viewed 26 May 2011, www.health.qld.gov.au/breastfeeding/about_breastfeeding/storing.asp.

- frozen in a separate freezer section of a refrigerator for up to 3 months; if your freezer is a compartment inside the refrigerator, rather than a separate section with its own door, then only store the breast milk for 2 weeks
- frozen in a deep freeze (–18 °C or lower) for 6–12 months.

When thawing frozen breast milk, always use the oldest milk first. Frozen breast milk can be thawed:

- in the refrigerator and used within 24 hours
- by standing the bottle in a container of lukewarm water and used straight away.

Heating bottles

Heat bottles **once only**. Do not allow a bottle to cool and then reheat it—this can allow germs to grow.

Do not warm bottles in the microwave.[20] Microwave ovens distribute heat unevenly. Water in the milk can turn to steam that collects at the top of the bottle, and there is a danger that the infant could be scalded. Many parents use microwaves to warm bottles at home. In the home environment, usually only one or two people are preparing bottles, using the same type of bottle and the same microwave every time, so the risk of overheating the milk and scalding the infant is lower.

To heat bottles:

- Stand the bottle in a container of hot water for no more than 15 minutes.
- Before feeding the infant, check the temperature of the milk by letting a little drop onto the inside of your wrist—it should feel comfortably warm or even a little bit cool.
- Never microwave breast milk.
- Never refreeze thawed breast milk.
- Only warm the milk once, and discard any warmed milk that has not been used.

3.5.4 Children's cooking classes

Children love to cook. Cooking is a safe and enjoyable activity for children in education and care services, provided that you take a few simple precautions:

- Make sure children wash and dry their hands before and after the cooking class.
- Always be aware of the dangers of heat.
- Tie up any long hair.
- To reduce the chances of germs being spread through food, it is recommended that children only prepare food that will be cooked afterwards—any germs in the food will be destroyed when the food is cooked. However, if the food will not be cooked, this risk can be lowered if children only prepare food to eat themselves.
- If children have had vomiting or diarrhoea, they should not participate in cooking activities until they have been symptom-free for 48 hours. If the education and care service has recently had, or is currently experiencing, an outbreak of gastrointestinal disease, do not hold children's cooking activities, and check with your local public health unit before resuming cooking activities.

Foods suitable for cooking classes include cooked biscuits, fresh pasta, soups and pizza. These types of food will be cooked and exposed to high temperatures, killing any bacteria that may be in the food.

Foods not suitable for cooking classes include fruit salad, biscuits or slices that do not need cooking, and jellies. These types of food are not cooked and therefore not exposed to high temperatures. Refrigeration does not kill germs.

20 World Health Organization & Food and Agriculture Organization of the United Nations 2007, *Safe preparation, storage and handling of powdered infant formula: guidelines,* WHO, Geneva.

3.6 Other considerations to prevent the spread of infectious diseases

Some situations in education and care services need special consideration to prevent the spread of infectious diseases. These include using sandpits, blowing out candles on cakes, playing with play dough, and contact with animals.

3.6.1 Sandpits

Sandpits can be great fun, but they are also a potential source of infection. They need to be well maintained and kept clean.

Sandpits should be closely covered when the education and care service is unattended, to prevent contamination from animal faeces and protect them from sharp or dangerous objects that are discarded inappropriately, such as broken glass. If the sandpit cannot be covered easily, daily raking and exposure to the sun are advised.

The sand should be of a depth that can be easily raked over before each use, to help screen for foreign objects.

Sand that is contaminated by animal or human faeces, blood or other body fluids should be removed. Use a shovel and dispose of the sand in a plastic bag or alternative. The remaining sand should be raked over at intervals during the day and left exposed to the sun. Where extensive contamination has occurred, such as through a large spill of body fluids, replace all the sand.

Adults and children must wash their hands with soap and water or use an alcohol-based hand rub before and after playing in the sandpit.

3.6.2 Celebration cakes and blowing out candles

Many children like to bring a cake to share with their friends on their birthday. Children love to blow out their candles while their friends are singing 'Happy birthday'. Cakes and candles may also be brought into the education and care service for other special occasions. To prevent the spread of germs when the child blows out the candles, parents should either:

- provide a separate cupcake (with a candle if they wish) for the birthday child and enough cupcakes for all the other children
- provide a separate cupcake (with a candle if they wish) for the birthday child and a large cake that can be cut and shared.

3.6.3 Play dough

Play dough can be great fun. Play dough has a high salt content, which discourages germs from living and multiplying. The following simple steps will reduce the risk of spreading infections when using play dough:

- Children and adults using play dough should wash their hands with soap and water or use an alcohol-based hand rub before and after using play dough.
- Make a new batch of play dough each week and take out enough play dough for each day. Store the remaining play dough in an airtight container away from children.

3.6.4 Animals

Animals can be a great source of joy and stimulation for children. However, the mouths and claws of all animals carry germs that can cause infections if a person is bitten or scratched. Animal faeces also carry germs. Some simple measures will minimise the health risk from contact with animals:[21]

- Make sure that adults and children wash their hands with soap and water (or use an alcohol-based hand rub, but only if soap and water are not available) after touching animals, or cleaning an animal's bedding, cage or tank.
- Ensure that animals are flea-free, worm-free and immunised as appropriate. Animals that are ill should be treated promptly by a veterinarian and kept away from children until the animal is well—an animal that is irritable because of pain or illness is more likely to bite or scratch.
- Supervise children when they have contact with animals. Children should be discouraged from playing with animals while animals are eating. Do not let children put their faces close to animals.
- Do not allow animals in sandpits, and do not allow them to relieve themselves on soil, in pot plants or in vegetable gardens.
- Always wear gloves when handling animal faeces, emptying litter trays and cleaning cages.
- Dispose of animal faeces and litter daily. Place faeces and litter in a plastic bag or alternative, and put it out with the rubbish.
- Pregnant women, in particular, should avoid contact with cat faeces, to minimise their risk of toxoplasmosis (see Section 4.3 for more information).
- If you have a birdcage, wet the floor of the cage before cleaning it to avoid inhalation of powdered, dry bird faeces.
- Avoid bringing in or keeping ferrets, turtles, iguanas, lizards or other reptiles, psittacine birds (birds of the parrot family), or any wild or dangerous animals.

Bat bites and scratches

Australian bats may harbour a lyssavirus that is very similar to the rabies virus. Treatment of bat bites or scratches can require several vaccine injections and injection of protective antiserum into the wound area. Do not approach or handle bats, including ill or injured animals, because there is a high likelihood of being scratched or bitten. Bats that are not in direct contact with people (e.g. bats in trees) pose no risk of transmitting lyssavirus. Only professional animal handlers should attempt to move bats. If you are scratched or bitten by a bat, immediately clean the wound with soap and running water for 5 minutes, and contact your doctor or local hospital emergency department as a matter of urgency.

Fish and marine animals

Fish and fish tanks can harbour germs. If you need to reach into the fish tank, wear gloves or use a net. If you do use your bare hands and arms, wash your hands and arms thoroughly with soap and water after reaching into the tank. Never clean the aquarium in the kitchen sink or food preparation area—use the laundry sink for cleaning and disposal of aquarium water.

Scratches from fish and marine animals, including coral, can cause unusual infections. If an injury caused by a fish, or a wound contaminated by sea water, pond water or aquarium water, becomes infected, it is important to see your doctor and explain how the injury occurred.

Fleas

Fleas can infest animals and humans, and flea bites cause irritation and inflammation of the skin. Treat animals, their bedding (that is, where they usually rest) and their immediate environment with a flea treatment to destroy adult and immature fleas—ensure that you follow the manufacturer's instructions.

21 Queensland Health 2008, *Infection control guidelines for animal contact,* Queensland Health, Brisbane.

PART 4
Issues for employers, educators and other staff

Summary

Part 4 focuses on issues that affect the adults in an education and care service. These include:

- work health and safety
- immunisation for adults
- infectious diseases during pregnancy
- how public health units can help control the spread of infections.

Evidence base

The information in Part 4 is based on:

- Heymann, D (ed.) 2008, *Control of communicable diseases manual*, 19th edn, American Public Health Association, Washington, DC
- National Health and Medical Research Council 2005, *Staying healthy in child care: preventing infectious diseases in child care*, 4th edn, NHMRC, Canberra
- National Health and Medical Research Council 2008, *The Australian immunisation handbook*, 9th edn, NHMRC, Canberra
- other sources as specified in the text.

4.1 Work health and safety

Work health and safety Acts in Australian states and territories place a duty of care on people conducting a business or undertaking to ensure the health and safety of workers and others as far as is reasonably practicable, including where there is potential for the spread of infectious diseases. Employers should ensure that educators, other staff and students are not placed at risk in their workplace.

The Council of Australian Governments has developed the National Quality Framework for Early Childhood Education and Care to improve and standardise the quality of education and care in Australia. Quality Area 2: 'Children's Health and Safety' includes standards relating to hygiene and infection control in education and care services, and Quality Area 7: 'Leadership and Service Management' refers to the policies and procedures that services should have in place.[22] These include policies that protect the health of children, educators and staff.

Every education and care service needs to ensure that infection risks are prevented or minimised as far as is reasonably practicable. This includes having strategies to prevent or minimise exposure to infectious diseases and chemicals used to manage infection risks, and processes to ensure that infection control measures are implemented and maintained.

All educators and other staff should be aware of the education and care service's policy on health issues and their own duty of care to contribute to a safe work environment. This includes following appropriate infection control and vaccination policies as part of their employment, and reporting their infectious status. If educators or other staff are feeling unwell, they should not go to work.

Students on placements in education and care services should also be aware of policies and procedures, including the service's vaccination policy, before they start their placement.

Policies and procedures should be reviewed and updated to reflect changes in staff or the circumstances of the service.

22 The Guide to the National Quality Standard is available at <http://acecqa.gov.au/storage/3%20-%20Guide%20to%20the%20National%20Quality%20Standard%20FINAL.pdf> (viewed 28 March 2012).

4.2 Immunisation

It is vital that educators and other staff are up to date with their vaccinations

Immunisation protects not only staff, but also the young children they work with, who may be more vulnerable to vaccine-preventable diseases, and may have more serious outcomes if they do contract a vaccine-preventable disease.[22] Check the Immunise Australia Program website (immunise.health.gov.au) and your state or territory health department's website on a regular basis for any changes to the vaccinations available for adults.

People conducting a business or undertaking in education and care services have a duty of care to ensure, as far as is reasonably practicable, the work health and safety of educators and other staff who are at risk of exposure to diseases that are preventable by vaccination. Immunisation of educators and other staff is an effective way to manage the risk in education and care services, because many diseases are infectious before the onset of symptoms.

See Section 1.3.3 for more information on how immunisation can help break the chain of infection

Educators and other staff who are not immunised place children—especially younger age groups—at greater risk of acquiring a vaccine-preventable disease. All education and care service staff should be advised of the potential consequences if they refuse reasonable requests for immunisation. These include:

- being restricted to working with children over 12 months old
- potentially having to take antibiotics during outbreaks of bacterial diseases that are vaccine preventable, even if the educator is not ill
- being excluded from work during outbreaks of vaccine-preventable diseases.

Employers should:

- develop a staff immunisation policy that states the immunisation requirements for educators and other staff
- develop a staff immunisation record that documents each staff member's previous infection or immunisation for the diseases listed below
- require all new and current staff to complete the staff immunisation record
- regularly update staff immunisation records as staff become vaccinated
- provide staff with information about vaccine-preventable diseases—for example, through in-service training and written material, such as fact sheets
- take all reasonable steps to encourage non-immune staff to be vaccinated.

Advice given to educators and other staff, and any refusal to comply with vaccination requests, should be documented.

23 National Health and Medical Research Council 2008, *The Australian immunisation handbook*, 9th edn, NHMRC, Canberra.

4.2.1 Recommended vaccinations for educators and other staff

The National Health and Medical Research Council (NHMRC) recommends that all educators and other staff are immunised against:

- **pertussis**—this is especially important for educators and other staff caring for the youngest children who are not fully vaccinated. Even if the adult was vaccinated in childhood, booster vaccination may be necessary because immunity to pertussis decreases over time
- **measles–mumps–rubella** (MMR) for educators and other staff born during or since 1966 who do not have vaccination records of two doses of MMR, or do not have antibodies against rubella
- **varicella** for educators and other staff who have not previously had varicella (a blood test is required to prove previous infection)
- **hepatitis A**, because young children can be infectious even if they are not showing any symptoms.

All staff should also consider having yearly **influenza** vaccinations. Influenza is very infectious and can spread through the air by coughing and sneezing, as well as by hands, cups and other objects that have been in contact with an infected person's mouth or nose.

Additional vaccinations are recommended for special categories of educators and other staff:

- **Hepatitis B** for educators and other staff who care for children with intellectual disabilities. Although the risk is low, seek advice about hepatitis B immunisation if the children are not immunised. Immunisation of **the children should be encouraged.**
- **Japanese encephalitis** for educators and other staff who work in the outer Torres Strait islands for one month or more during the wet season.

Educators and other staff who are pregnant or immunocompromised (i.e. have a weakened immune system) should seek advice from their doctor about vaccinations. Some vaccinations are not recommended during pregnancy, or if a person has a disease or is undergoing treatment that affects their immune system.

See Section 4.3 for more information on infectious diseases during pregnancy

24 National Health and Medical Research Council 2008, *The Australian immunisation handbook*, 9th edn, NHMRC, Canberra.

Scenario

There was an outbreak of pertussis (whooping cough) in an education and care service. Parvati, an educator, became ill several days after the first case was diagnosed. She had to take time off work to see her doctor for some antibiotics, and to recover from the illness. After 2 days of taking antibiotics, Parvati felt much better, but she had to take more time off work because the exclusion period for pertussis is a minimum of 5 days after starting antibiotics.

What should Parvati have done?

- Pertussis is a vaccine-preventable disease—if Parvati had been vaccinated before she began working at the education and care service, her chances of getting ill from pertussis would have been very small. This would also have saved her time and money, because she would not have had to take time off to see her doctor, or to pay for antibiotics.

What should Parvati's employer have done?

All education and care service employers should have accurate records of their staff members' immunisations and when any boosters are due, and should review these records regularly to keep them up to date.

- Parvati's employer should have had a clear policy for the education and care service about immunisations for staff, and made sure that all staff were aware of this policy.

4.3 Infectious diseases during pregnancy

Educators and other staff who are pregnant need to be aware of how some infections can affect their unborn child. If a staff member is pregnant, it is even more important than usual for the education and care service to make sure that all staff are following good infection control practices.

For more information about the following diseases, see the relevant fact sheets in Part 5—Fact sheets.

4.3.1 Cytomegalovirus (CMV)

CMV infections can cause serious birth defects. The highest risk to the unborn child is during the first half of the pregnancy. CMV infection occurs in 1% or less of pregnancies and, of these cases, less than 10% of infants are likely to have severe illness.

CMV can spread through infected urine and saliva. Women of childbearing age working with young children should pay particular attention to good hand hygiene after contact with body secretions, especially after changing nappies or assisting in toilet care.

Risk management during pregnancy

Pregnant women could be relocated within the service to reduce their risk of exposure to diseases that can harm their unborn baby. For example, if an educator who usually works in the infants room becomes pregnant, she could be relocated to a preschool room, where she is less likely to be exposed to cytomegalovirus through nappy changing and feeding.

4.3.2 Hand, foot and mouth disease

Hand, foot and mouth disease is rare in adults. It is not a serious illness; infection with the virus that causes it often produces mild symptoms or no symptoms at all. The risk associated with this disease during pregnancy is low; however, in extremely rare cases, it can cause miscarriage. If the mother becomes infected shortly before giving birth, she can pass the infection on to the baby. Most infants born with hand, foot and mouth disease have mild symptoms, but complications in very rare cases can affect the infant's organs. Pregnant women should consider strategies to reduce their risk of infection, including regularly performing effective hand hygiene.

4.3.3 Human parvovirus B19 (erythema infectiosum, fifth disease)

Infection with human parvovirus B19 generally causes a mild illness. However, if a pregnant woman is infected, the virus may be transmitted to her unborn baby.

In less than 5% of these cases, the virus may cause severe anaemia (low red blood cell count) in the baby, resulting in miscarriage. The risk of miscarriage is highest if the mother is infected during the first half of pregnancy. Infants who survive if the mother is infected do not have birth defects.

Pregnant women should consider strategies to reduce their risk of infection, including regularly performing effective hand hygiene.

4.3.4 Listeriosis

Listeriosis is caused by bacteria (*Listeria monocytogenes*) and can be spread through foods such as soft cheeses and pre-cooked meat products (e.g. pâté and deli meats), along with many other types of food. It can cause a range of symptoms; if a pregnant woman is infected, it can cause miscarriage, stillbirth or premature birth. Infants born to infected mothers can also suffer a range of complications. Pregnant women can reduce their risk of exposure to *Listeria* by avoiding raw or partially cooked foods, and ensuring that raw fruit and vegetables have been washed in clean water.

4.3.5 Rubella (German measles)

Rubella is a vaccine-preventable disease that usually causes mild illness in children. However, if expectant mothers are infected during the first 20 weeks of pregnancy, their infants may have severe birth defects. This risk is highest in early pregnancy. If non-immune mothers catch rubella in the first 10 weeks of pregnancy, their baby will have up to a 90% chance of having rubella-associated problems. Defects are rare if the mother is infected with rubella after the first 20 weeks of pregnancy.[25]

Anyone who works with children should be immunised against rubella, or be certain that they are immune to rubella by having a blood test.

4.3.6 Toxoplasmosis

Toxoplasmosis is a disease caused by a parasite. The disease can result in birth defects. If the mother becomes infected during pregnancy, the parasite can pass through the placenta to the developing baby.

There is no risk to the baby if the mother has had the disease before pregnancy—a blood test will show if the mother is immune. If the mother is not immune, consider strategies to minimise the risk of infection, including regularly performing effective hand hygiene, washing and peeling fruit and vegetables before eating, and wearing gloves when gardening. Toxoplasmosis can be spread by mammals (especially cats) and birds; non-immune mothers should avoid contact with cats whose feeding history is unknown, and they should not clean cats' litter trays.

Educators and other staff have the same risk of contracting toxoplasmosis as other people.

4.3.7 Varicella (chickenpox)

Infection with varicella in the first 3 months of pregnancy may damage the unborn child. Pregnant women who are exposed to varicella at any stage of the pregnancy should seek medical advice within 48 hours. If the woman does not already have antibodies against the virus, the medical professional will give an injection of antibodies (known as varicella zoster immunoglobulin, or VZIG). Most people have had varicella as a child and will not get it again.

Anyone who works with children and has not previously been infected with varicella should be immunised, or be certain that they are immune to varicella by having a blood test

Varicella is a vaccine-preventable disease; however, varicella vaccination is not recommended during pregnancy, and pregnancy should be avoided for 1 month after having a varicella vaccination.

25 Heymann, D (ed.) 2008, *Control of communicable diseases manual,* American Public Health Association, Washington, DC.

4.4 The role of public health units

Public health staff play a critical role in protecting people from infectious diseases and preventing harm from hazards involving chemicals, poisons or radiation. Public health units carry out disease surveillance and control initiatives, including responding to disease outbreaks. They also make sure that public health laws are followed.

Public health staff provide advice and support to education and care services about infectious diseases, infection control practices and public health issues. They also work with and support a range of other organisations, including health services, government departments, local governments, nongovernment agencies, research institutions and local communities.

Each state and territory maintains a list of diseases that the public health unit must be told about if the diseases occur; these are known as notifiable diseases. These diseases are notifiable so that public health staff can investigate and prevent further cases of rare and severe diseases, identify outbreaks, and help implement control measures. Some of the important diseases that public health units can provide advice on and help to control are measles, meningococcal disease, hepatitis A, pertussis (whooping cough) and outbreaks of gastroenteritis.

Education and care services should keep a copy of the list of notifiable diseases for their state or territory—your local public health unit can provide the list, or you can check their website. The service benefits from talking to public health units about notifiable diseases because public health staff may be able to explain to educators and other staff:

- the consequences of an infection to children, parents and those working in education and care services
- how to control further spread of the infection
- appropriate infection control measures (e.g. vaccination, exclusion, education, environmental cleaning).

Public health staff can provide valuable advice, support and resources that can help manage outbreaks.

See Section 6.2 for contact details of public health units

Scenario

A mother rings the education and care service to let you know that her 13-month-old daughter, Su Yin, has been diagnosed with measles by a general practitioner (GP).

What do you do?

- Contact your local public health unit to advise that a child in your service has been diagnosed with measles.
- Review the vaccination records of the children, educators and other staff who have been in the same room as Su Yin in the past 2 weeks.
- If Su Yin is confirmed as having measles, the public health unit will work closely with you to identify the people at risk in the education and care service. There may be a small window of opportunity to help prevent these people from developing measles. The public health unit will also provide information about measles to be distributed to all people who attend the service.

PART 5
Fact sheets

Summary

This section contains fact sheets as a resource for educators and other staff, and parents. The fact sheets are designed as quick-reference guides to infectious diseases that may appear in education and care services. The fact sheets are listed in alphabetical order by disease name. Individual fact sheets can be pinned to notice boards or copied for parents to inform them of illnesses that may be present in the education and care service.

Public health units that become involved in an outbreak of an infectious disease might also provide fact sheets. These will be consistent with the fact sheets provided here, but may contain additional local information about who to notify about new cases of an infection or availability of treatment. In this case, avoid distributing several versions of the same information, as this may cause confusion.

Evidence base

The information in Part 5 is based on:

- Communicable Diseases Network Australia 2008–11, *Series of national guidelines*, CDNA, Canberra
- Heymann, D (ed.) 2008, *Control of communicable diseases manual*, 19th edn, American Public Health Association, Washington, DC
- National Health and Medical Research Council 2005, *Staying healthy in child care: preventing infectious diseases in child care*, 4th edn, NHMRC, Canberra
- National Health and Medical Research Council 2008, *The Australian immunisation handbook*, 9th edn, NHMRC, Canberra
- SA Health—Communicable Disease Control Branch 2009, *You've got what?*, 4th edn, SA Health, Adelaide
- other sources as specified in the text.

Fact sheets: contents

How to use these fact sheets

The fact sheets in this section are designed as quick-reference guides to infectious diseases that may appear in education and care services, and should be used as a resource for educators and parents.

The fact sheets are in alphabetical order by disease name. These can be pinned to notice boards or copied for parents to inform them of illnesses that may be present in the education and care service.

Each fact sheet contains the following sections:

- Description—what germs cause the illness, and what are the symptoms?
- How does it spread?—how does the disease spread from one person to another?
- Incubation period—how long does it take for the symptoms to begin after a person is exposed to the germ?
- Infectious period—how long is the person able to spread the germ to other people?
- Exclusion period—how long should the person be excluded from the education and care service?
- Responsibilities of educators and other staff—what should staff do to protect themselves and the children if someone in the service has the illness?
- Responsibilities of parents—what should parents do to protect their child and other children if their child has the illness?
- Controlling the spread of infection—what can staff and children do to stop the infection spreading?
- Treatment—what treatment options are available for the illness?

These fact sheets are **not intended to be a list of "dos' and don'ts" to avoid particular diseases, nor diagnostic aids**. Children or adults who are unwell should see a doctor to be diagnosed. If the cause of the illness is an infectious disease, the education and care service should be notified so that they can prepare and distribute the appropriate fact sheet.

Bronchiolitis

Description

Bronchiolitis is a potentially serious chest infection caused by a virus. The virus infects the small breathing tubes (bronchioles) of the lungs, causing inflammation, mucus production and breathing difficulties. Respiratory syncytial virus (RSV) is usually responsible for bronchiolitis, although other viruses may cause outbreaks. Infections often occur in infants less than 1 year old, usually in winter.

The symptoms of the infection begin like a common cold, with a runny nose, cough and fever. The coughing may become worse over the next day or two, and rapid breathing and wheezing can make feeding the child difficult. Wheezing when breathing out is characteristic of bronchiolitis—seek medical advice if the child develops these symptoms. The wheezing sound can last for 2–3 days, but the cough can last up to a month.

How does it spread?

The disease spreads by mouth-to-mouth contact and airborne droplets. It can also spread indirectly by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, tissues, toys, eating utensils).

Incubation period

The incubation period for RSV is usually 5 days, but can range from 2 to 8 days.[26]

Infectious period

People are infectious just before symptoms begin and during the active stage of the disease—this is usually 1 week in total.

Exclusion period

A child with bronchiolitis should stay at home until they are feeling well.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well.
- If an educator or other staff member is ill, they should stay home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Encourage cough and sneeze etiquette and effective hand hygiene at home.
- Avoid contact between your child and other children, or frail and elderly people, until the child is feeling well.

26 Hawker, J, Begg, N, Reintjes, R & Weinberg, J 2005. *Communicable disease control handbook,* 2nd edn, Blackwell Publishing Asia, Carlton, Australia.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Avoid contact between the person who is ill and children, or frail and elderly people, until the person is feeling well.

Treatment

Bronchiolitis is a viral infection, which means that antibiotics will not help the child get better.

A child with severe bronchiolitis will need to see a doctor. Some children with bronchiolitis may need to go to hospital for a short time to have specialised medical treatment.

People with mild bronchiolitis may be treated at home, and may benefit from a warm, humid atmosphere (a humidifier or steam). Fluid intake should be increased. Paracetamol and decongestant medication may help relieve a sore throat and other symptoms.

Bronchitis

Description

Bronchitis is a chest infection, usually caused by a virus. The virus makes the lining of the trachea and bronchi (the tubes leading from the throat to the lungs) inflamed and swollen, and more mucus is produced than normal. This causes a cough and sometimes a pain in the throat or upper chest when coughing. Bronchitis is usually a mild illness in children.

A person with bronchitis may have the usual signs of a cold, including a runny nose, sore throat and mild fever, and then develop a cough. The cough is often dry at first, then becomes moist after a couple of days. They may have a slight wheeze and shortness of breath.

People usually recover from an acute episode of bronchitis in 5–10 days. Some children keep having attacks of bronchitis, or can develop chronic bronchitis. This can be due to allergies, someone smoking around them, or other problems in their lungs.

How does it spread?

The disease spreads by mouth-to-mouth contact and airborne droplets. It can also spread indirectly by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, tissues, toys, eating utensils).

Incubation period

The incubation period for bronchitis is usually 1–3 days.

Infectious period

People are infectious just before symptoms begin and during the active stage of the disease.

Exclusion period

A child with bronchitis should stay at home until they are feeling well.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well.
- If an educator or other staff member is ill, they should stay home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Encourage cough and sneeze etiquette and effective hand hygiene at home.
- Avoid contact between your child and other children, or frail and elderly people, until the child is feeling well.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette.
  - cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Avoid contact between the person who is ill and children, or frail and elderly people, until the person is feeling well.

Treatment

Bronchitis in children is nearly always due to a virus, which means that antibiotics will not help the child get better. However, in more serious cases where bronchitis may be caused by bacteria, the doctor may prescribe antibiotics.

In mild cases, bed rest in a warm environment for a few days, with a light diet and nourishing drinks, may be all that is needed. Cough medicines may help relieve symptoms. Warming the chest with a rubber hot water bottle filled with warm (not hot) water or a medicinal chest rub may also relieve symptoms.

Campylobacter infection

Description

Campylobacter is a bacterium that causes gastroenteritis. Symptoms of *Campylobacter* infection may include diarrhoea (sometimes with blood in it), a low-grade fever, abdominal cramps, nausea and vomiting.

Campylobacter is found in animal faeces, including faeces of farm animals and household pets. People and animals can carry and spread the infection even if they do not have any symptoms.

How does it spread?

The disease is spread when bacteria enter the body by the mouth. This can happen by:

- eating undercooked meat, especially chicken
- drinking unpasteurised milk or contaminated drinking water
- eating cooked food that has been contaminated with bacteria from raw food
- handling infected animals and not washing your hands afterwards.

Infection can also be spread from person to person when:

- people with *Campylobacter* in their faeces do not wash their hands effectively after going to the toilet; contaminated hands can then contaminate food, which may be eaten by other people
- people's hands become contaminated when changing the nappy of an infected child and they do not wash them effectively.

Incubation period

The incubation period is usually 2–5 days after coming in contact with the bacteria, but may range from 1 to 10 days.

Infectious period

A person is infectious for as long as the bacteria are in their faeces. This may be for a few days or weeks after the symptoms have stopped. However, the risk of spreading the infection is much less after the diarrhoea has stopped.

Exclusion period

People with *Campylobacter* infection should be excluded until diarrhoea has stopped for at least 24 hours.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well and have not had any symptoms for at least 24 hours.
- If an educator or other staff member is ill, they should stay home until they are feeling well and have not had any symptoms for at least 24 hours.
- Educators and other staff who handle food must not return to work until they have been symptom free for 48 hours. Make sure staff and children always practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.
- Contact your local public health unit if two or more people are ill. Public health workers may be able to identify how the germ has spread through the education and care service, and help prevent further infection.

Responsibilities of parents

- Keep the child at home until they are feeling well and have not had any symptoms for at least 24 hours.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Ensure that staff and children always practise appropriate hand hygiene.
- Exclude a person with diarrhoea from the education and care service until the diarrhoea has stopped for at least 24 hours, unless a non-infectious cause has been diagnosed.
- Regularly rake sandpits and remove any animal faeces. Cover the sandpit when it is not in use.

Treatment

Make sure the child has plenty to drink. People usually recover from *Campylobacter* infection within a few days of symptoms starting. Parents should consult a doctor if the symptoms continue; the doctor may prescribe antibiotics.

Candidiasis (thrush)

Description

Thrush is caused by a fungus called *Candida*. Most people have this fungus on their skin, in their mouth and in their gut, where it lives harmlessly. However, it can sometimes cause infections, especially in moist places such as in infants' mouths or on their chins. It also can also infect the vagina, or the nipples of breastfeeding mothers. It is often associated with nappy rash—if a nappy rash is not clearing after 3 days or not responding to the usual cream, it may be thrush. Thrush is very common in infants because their immune systems have not yet developed.

Thrush appears as white spots or flakes. It can cause irritation, but it is usually not dangerous.

How does it spread?

Thrush is spread by direct contact with fungi living in the mouth, vagina and faeces, or on the skin. It can also spread on items that have contact with infected mouths (e.g. dummies, toys, cups, eating utensils). A mother can infect her infant during birth.

Incubation period

The incubation period is variable, but is usually 2–5 days in infants.

Infectious period

The infectious period is unclear, but probably as long as the white spots or flakes are present.[27]

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Do not allow children to share dummies, cups or eating utensils.
- Regularly wash toys and other objects that children put in their mouths.
- Make sure staff and children practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Encourage hand hygiene at home.
- Clean and sterilise bottle teats and dummies or replace them to prevent reinfection.

27 Candidiasis', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC, p. 99.

Controlling the spread of infection

- Do not share eating utensils, food or drinking cups. Thoroughly wash toys that infants and toddlers put in their mouths.
- Ensure that staff practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

For moderate to severe infections of the mouth, vulva or vagina, a doctor may prescribe antifungal medications. Wash the affected area with water, apply the prescribed cream and expose the affected area to air as much as possible.

Cold sores (herpes simplex)

Description

Cold sores are caused by herpes simplex virus (HSV). This is a very common virus—about 20% of children will have been infected by the age of 5 years, and about 80% of people will have been infected by the time they are adults. Once a person is infected, the virus can reactivate and cause new cold sores throughout the person's life. Reactivation can be triggered by many things, including cold, sunburn, stress, fever or illness.

There are two main types of HSV. HSV type 1 viruses mostly cause sores in and around the mouth and on other parts of the skin. HSV type 2 viruses mostly cause genital herpes.

Cold sores usually appear on or next to the lips, but they can occur on any part of the body. Infants often get cold sores on their chins. Cold sores can appear on the eye if the person touches an active cold sore and then touches their eye. Although this is rare, any child with a painful red eye should be seen by a doctor.

There is often a tingling or burning feeling before the cold sore appears, followed by one or more blisters. The blisters break, form a scab and then heal, usually without leaving a scar. Cold sores usually last 3–7 days.

How does it spread?

Cold sores spread by direct contact with sores, especially when there is fluid in the blister. They can also spread by sharing anything that is put in the mouth, including dummies, food and drink containers, and eating utensils. Even if a person does not have a visible cold sore, they may still be able to infect others.

Incubation period

Cold sores can appear 2–12 days after people are infected with the virus.[28]

Infectious period

Spread of infection is most likely when there is fluid in the blister. However, people with a history of cold sores may shed the virus in their saliva even if they do not have a blister, and can infect others.

Exclusion period

Exclusion is not necessary if the person can maintain hygiene to minimise the risk of transmission (i.e. does not pick or scratch the sores and practises effective hand hygiene). If the person cannot do this, they should be excluded until the sores are dry. Sores should be covered by a waterproof dressing, where possible.

Responsibilities of educators and other staff

- Make sure staff and children practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.
- Staff members with cold sores may need to be given duties that do not involve direct contact with children.

28 'Herpes simplex', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC, p. 302.

Responsibilities of parents

- If the child cannot maintain good hygiene (e.g. not touch cold sores, not kiss other children, wash their hands thoroughly, dispose of tissues appropriately), they should be kept at home until the blisters have dried completely.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Anyone with a cold sore should avoid contact with infants, because infants may develop severe illness.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Follow good hand-washing and cleaning procedures.
- Do not allow kissing on or near the infected area.
- Every day, wash toys that children put in their mouths.
- Store dummies separately.
- Do not share food or drink containers.

Treatment

Using antiviral creams or lotions, such as idoxuridine or acyclovir, in the very early stages may help to keep the sore small and heal more quickly.

Do not pick or scratch cold sores, because this can introduce other germs. Wash your hands thoroughly after touching a cold sore.

Common cold

Description

Colds are the most common cause of illness in children and adults. There are more than 200 types of viruses that can cause the common cold. Symptoms include a runny or blocked nose, sneezing and coughing, watery eyes, headache, a mild sore throat and possibly a slight fever. Nasal discharge may start clear, but can become thicker and turn yellow or green over a day or so. Up to a quarter of young children with a cold may have an ear infection as well, but this happens less often as the child grows older. Watch for any new or more severe symptoms—these may indicate other, more serious infections.

Infants are protected from colds for about the first 6 months of life by antibodies from their mothers. After this, infants and young children are very susceptible to colds because they are not immune, they have close contact with adults and other children, they cannot practise good personal hygiene, and their smaller nose and ear passages are easily blocked.

It is not unusual for children to have five or more colds a year, and children in education and care services may have as many as 8–12 colds a year. As children get older, and as they are exposed to greater numbers of children, they get fewer colds each year because of increased immunity. By 3 years of age, children who have been in group care since infancy have the same number of colds, or fewer, as children who are cared for only at home.[29]

How does it spread?

Colds spread by airborne droplets. They can also spread indirectly by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, tissues, toys, eating utensils).

Incubation period

The incubation period is about 1–3 days.

Infectious period

People with colds are most infectious from about 1 day before symptoms begin, and while they have a runny nose with clear nasal discharge.

Exclusion period

There is no need to exclude a child with a common cold.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well.
- If an educator or other staff member has a cold, they should stay home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

29 Aronson, SS & Shope, TR (eds) 2005, *Managing infectious diseases in child care and schools: a quick reference guide,* American Academy of Pediatrics, Illinois.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Encourage cough and sneeze etiquette and hand hygiene at home.
- Avoid contact between your child and other children, or frail and elderly people, until they are feeling well.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene, as above.
- Avoid contact between the person who is ill and children, or frail and elderly people, until the person is feeling well.

Treatment

There is no specific treatment for the common cold. Because colds are caused by viruses, antibiotics will not help. Rest, extra drinks and comforting are important.

Decongestants and other cold remedies are widely promoted for relieving the symptoms of colds, but they are unlikely to help. In fact, they can cause side effects such as irritability, confusion and sleepiness. Oral decongestants are not recommended for children under the age of 2 years. Cough medicines do not reduce the frequency, severity or duration of a cough. The cough is there for a reason: it serves a useful function in clearing mucus from the child's airways and preventing secondary infection. If you are concerned, take the child to a doctor.

Do not give aspirin to any child under the age of 12 years unless specifically recommended by a doctor.

Conjunctivitis

Description

Conjunctivitis is an eye condition where the conjunctiva (the clear membrane that covers the white part of the eye and lines the inner surface of the eyelids) becomes inflamed. The inflammation can have many causes—the most common are infection, allergy and irritation:

- **Infectious conjunctivitis** can be caused by bacteria or viruses. Bacterial conjunctivitis may start in one eye, but almost always involves both eyes. There is likely to be a gritty feeling and pus. Viral conjunctivitis may involve one or both eyes, making them red, itchy and watery.
- **Allergic conjunctivitis** is more common in people with allergic conditions, such as hay fever. It usually affects both eyes, and there are often other symptoms of allergies, such as an itchy nose, sneezing, and itchy and runny eyes.
- **Irritant conjunctivitis** can be caused by chemicals such as chlorine or chemicals in soaps, or air pollutants such as smoke and fumes.

The different types of conjunctivitis can have different symptoms, and symptoms vary in different people. One of the most common symptoms is discomfort or pain in the eye, which may feel gritty. Many people have red eyes and swollen eyelids, and can be sensitive to bright lights.

There may also be a discharge from the eye. In bacterial conjunctivitis, the discharge will be thick and coloured white, yellow or green; this may cause the eyelids to stick together when the person wakes in the morning. In viral or allergic conjunctivitis, the discharge may be thinner and clear.

How does it spread?

Viral and bacterial conjunctivitis can be spread by direct contact with eye secretions, or by contact with towels, washcloths, tissues and so on that have been contaminated with eye secretions. It can sometimes be spread by insects such as flies, when they fly from an infected person's eye to another person's eye.

Incubation period

The incubation period is usually 1–3 days.

Infectious period

Viral and bacterial conjunctivitis are infectious while there is discharge from the eye. Conjunctivitis caused by chemicals or allergies is not infectious.

Exclusion period

Children with infectious conjunctivitis should be excluded until the discharge from the eyes has stopped.

Responsibilities of educators and other staff

- Isolate the person—adult or child—until the source of the irritation can be confirmed.
- Make sure staff and children practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Take the child to a doctor for proper diagnosis and treatment—viral and bacterial conjunctivitis can look the same.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Ensure that children and staff practise effective hand hygiene, especially before and after touching the eyes or face.
- Do not share towels, washcloths, or anything else that may touch the eyes or face.

Treatment

A doctor may prescribe antibiotic eye drops or ointment. Regularly cleaning the eyes may make the person feel better. Using warm (not hot) water, wipe the closed eye gently but firmly to remove the excess pus. Do not clean inside the eyelids—this may damage the conjunctiva or the cornea (the clear front of the eye). Use a separate cotton-wool ball or tissue for each eye to avoid cross-infection.

Croup

Description

Croup is a barking cough from any kind of inflammation of the larynx (voice box) that occurs in children. It is common. Several viruses may cause croup. These include parainfluenza, respiratory syncytial virus (RSV) and various influenza viruses.

A young child (usually under 5 years of age) becomes mildly unwell with what seems to be a normal 'cold'. The virus infection causes the lining of the airway in the child's neck to swell, causing the airway to get narrower and making it harder to breathe.

The characteristic features of croup are a harsh, barking cough and a noisy, harsh sound when breathing in. This noise is caused by air vibrating as it passes through the narrowed, inflamed larynx. This will usually happen during the night. During the day the child is usually well apart from the cold. Seek medical advice if the child develops these symptoms.

How is it spread?

Viral infections are spread by airborne droplets. They can also be spread by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, toys, eating utensils).

Incubation period

Difficult to define, but about 2–4 days.

Infectious period

Shortly before the onset of symptoms and during the active stage of the disease.

Exclusion period

The child should stay at home until they are feeling well. Croup usually gets better in 3–4 days.[30] It is likely that a child with severe croup will need to stay in hospital for a short time to receive specialised medical treatment.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well.
- Make sure staff and children practice cough and sneeze etiquette and effective hand hygiene.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Try and calm your child as breathing is often more difficult when your child is upset.[30]
- Encourage cough and sneeze etiquette and effective hand hygiene at home.
- Avoid contact between your child and other children, or frail and elderly people, until they are feeling well.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette
  - Cough or sneeze into your inner elbow rather than your hand
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away
  - Clean your hands.
- Ensure staff practise cough and sneeze etiquette and hand hygiene, as above.
- Avoid contact between the person who is ill and children, or frail and elderly people, until the person is feeling better.

Treatment

Steroids either taken by mouth or sometimes inhaled through a nebuliser may be used, and these help to reduce the swelling in the airway which makes the breathing easier. Antibiotics do not work on viruses and are not given for croup.[30]

30 The Royal Children's Hospital Melbourne – Kids Health Info: Croup 2010, viewed 25 March 2013 http://www.rch.org.au/kidsinfo/fact_sheets/Croup/

Cryptosporidiosis

Description

Cryptosporidiosis is a type of gastroenteritis caused by the parasite *Cryptosporidium*, which infects the intestine. This germ can infect humans and a variety of animals, including cattle, dogs and cats. The disease is usually not serious in people with normal immune systems, but people with weakened immune systems (e.g. some people receiving cancer treatments, people on steroid therapy, and people with human immunodeficiency virus—HIV) may develop severe and long-lasting illness.

The disease tends to be more common during the warmer months and is sometimes associated with swimming pools that have been contaminated by a person with the infection. Symptoms include vomiting; loss of appetite; stomach pain; and foul-smelling, watery diarrhoea, which may contain mucus. However, the infected person often has no symptoms at all. Cryptosporidiosis is identified by laboratory examination of a faecal specimen.

How does it spread?

The infection spreads when:

- infected people do not wash their hands effectively after going to the toilet; contaminated hands can then contaminate food (which may be eaten by other people), or touch surfaces that may be touched by other people
- people handle infected animals or change the nappy of an infected child and do not wash their hands effectively
- people drink contaminated water (including swallowing contaminated water from swimming pools) or unpasteurised milk
- people use swimming pools while they have diarrhoea from this infection, or for up to 14 days after the symptoms have stopped.

Incubation period

The incubation period is uncertain, but usually around 7 days, with a range of 1–12 days.

Infectious period

People with cryptosporidiosis are infectious as soon as they develop symptoms, and for up to several weeks after symptoms disappear (usually 2–4 weeks).

Exclusion period

Children should be excluded until diarrhoea has stopped for at least 24 hours.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until the child is feeling well and has not had any symptoms for at least 24 hours.
- Make sure staff and children always practise effective hand hygiene.
- Educators and other staff who handle food must not return to work until they have been symptom free for 48 hours.
- Ensure that appropriate cleaning practices are being followed in the education and care service.
- Contact your local health authority if two or more people are ill. Public health workers may be able to identify how the germ has spread through the education and care service, and help prevent further infection. They may also advise if any particular cleaning or disinfecting is required.

Responsibilities of parents

- Keep the child at home until they are feeling well and have had no symptoms for at least 24 hours.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Ensure that adults or children who are ill are excluded for the appropriate period.
- Ensure that staff and children always practise appropriate hand hygiene.
- Ensure that people with cryptosporidiosis do not go swimming while they have diarrhoea and for 2 weeks after diarrhoea stops—they can shed the germs into the water.
- Ensure that adults and children practise effective hand hygiene after touching pets and farm animals.

Treatment

No treatment is available for cryptosporidiosis, but all children with diarrhoea should see a doctor. Make sure that a child with diarrhoea has plenty to drink.

Cytomegalovirus (CMV)

Description

Cytomegalovirus (CMV) is a common type of herpesvirus. In Australia, about 50% of young adults have been infected. Once a person is infected, they can carry the virus for the rest of their lives, even if they do not have any symptoms. Sometimes the virus can be reactivated, usually when the person has another illness or is stressed, and may then cause symptoms.

Healthy children and adults do not usually develop symptoms when they are infected, but some may show symptoms that are similar to glandular fever (e.g. tiredness, sore throat, swollen glands and fever). In certain people, such as transplant patients and pregnant women, the effects can be much more serious.

Infection of a baby before birth can cause serious birth defects. This risk is higher during the first half of the pregnancy. CMV infection occurs in 1% or less of pregnancies and, of these cases, less than 10% of infants are likely to have severe illness.

How does it spread?

Humans are the only source of CMV. The virus is found in urine, saliva, breast milk, vaginal secretions and semen. People can shed the virus in body fluids for months to years after first being infected, without having any detectable symptoms.

Incubation period

The incubation period is uncertain, but most likely 3–12 weeks.

Infectious period

People with CMV can be infectious for months to years after their initial infection, because they can keep shedding the virus in their urine or saliva.

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Ensure that staff wear disposable gloves for activities involving contact with urine, such as changing nappies.
- Make sure staff and children practise effective hand hygiene, especially after handling articles contaminated with urine or saliva, and after changing nappies.
- Where practicable, relocate pregnant women to work with older children to reduce their contact with urine and saliva.
- Inform staff who are pregnant or considering pregnancy about CMV risks and how to protect against infection.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Ensure effective hand hygiene at home, especially after handling articles contaminated with urine or saliva, and after changing nappies.

Controlling the spread of infection

- Ensure that staff and children always practise appropriate hand hygiene.
- Pregnant women or women considering pregnancy who work with young children should pay particular attention to good hand hygiene after contact with body secretions, especially after changing nappies or assisting in toilet care.

Treatment

Usually no treatment is required.

Diarrhoea and vomiting (gastroenteritis)

Description

Gastroenteritis (or 'gastro') is a general term for an illness of the digestive system. Typical symptoms include abdominal cramps, diarrhoea and vomiting. In many cases, it does not need treatment, and symptoms disappear in a few days. Gastroenteritis can cause dehydration because of the large amount of fluid lost through vomiting and diarrhoea. A person suffering from severe gastroenteritis may need fluids intravenously.

Infectious causes of gastroenteritis include:

- viruses such as rotavirus, adenoviruses and norovirus
- bacteria such as *Campylobacter, Salmonella* and *Shigella*
- bacterial toxins such as staphylococcal toxins
- parasites such as *Giardia* and *Cryptosporidium*.

Non-infectious causes of gastroenteritis include:

- medication such as antibiotics
- chemical exposure such as zinc poisoning
- introducing solid foods to a young child
- anxiety or emotional stress.

The exact cause of infectious diarrhoea can only be diagnosed by laboratory tests of faecal specimens. In mild, uncomplicated cases of diarrhoea, doctors do not routinely conduct faecal testing.

Children with diarrhoea who also vomit or refuse extra fluids should see a doctor. In severe cases, hospitalisation may be needed. The parent and doctor will need to know the details of the child's illness while the child was at the education and care service.

How does it spread?

Gastrointestinal diseases spread when the germ enters the body by the mouth. This can happen when:

- people eat contaminated food or drink contaminated water
- infected people do not wash their hands effectively after using the toilet—contaminated hands can then contaminate food that may be eaten by others, or surfaces that other people may touch before touching their mouth
- a person changes the nappy of an infected infant and does not wash their hands effectively.

Incubation period

Viral and bacterial gastroenteritis usually take 1–3 days for symptoms to appear. Symptoms of parasitic gastroenteritis can take 5–15 days to appear.

Infectious period

People are infectious for as long as the germs are present in their faeces. The germs causing gastroenteritis can be in faeces even if the person does not have any symptoms, or after the symptoms have stopped.

Exclusion period

Children, educators and other staff with infectious diarrhoea should be excluded until the diarrhoea has stopped for at least 24 hours.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well and they have not had any symptoms for at least 24 hours.
- Make sure staff and children always practise effective hand hygiene.
- Educators and other staff who handle food must not return to work until they have been symptom free for 48 hours.
- Ensure that appropriate cleaning practices are being followed in the education and care service.
- Contact your local public health unit if two or more people are ill. Public health workers may be able to identify how the germ has spread through the education and care service, and help prevent further infection. They may also advise if any particular cleaning or disinfecting is required.

Responsibilities of parents

- Ensure that babies are vaccinated against rotavirus.
- Keep the child at home until they are feeling well and have not had any symptoms for at least 24 hours.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Ensure that adults or children who are ill are excluded for the appropriate period.
- Ensure that staff and children always practise appropriate hand hygiene.
- Ensure that appropriate cleaning practices are followed.
- Ensure that staff who have diarrhoea do not prepare food for others.
- Keep cold food cold (below 5 °C) and hot food hot (above 60°C) to discourage the growth of bacteria.

Treatment

The main risk of gastroenteritis is dehydration, especially in children—a child with gastroenteritis may become very ill, and may need to go to hospital. People with diarrhoea need extra fluid to replace what they lose through vomiting and diarrhoea. However, many fluids have too much sugar and the wrong amount of salt—giving an ill child the wrong kind of fluid can cause more diarrhoea and dehydration.

Safe drinks

The best fluids to give contain a mixture of special salts (electrolytes) and sugars. You can buy oral rehydration solution from the chemist. Mix the sachet of powder with water (not any other kind of fluid) according to the manufacturer's instructions.

If oral rehydration solution is not available, or your child will not take it, you can dilute other fluids with plenty of water, as shown in Table 5.1.

Table 5.1 Quick-check dilution table

Kind of drink	How much drink	How much water
Cordial (undiluted)	10 mL	160 mL
Fruit juice (undiluted)	20 mL	80 mL
Flat soft drink	20 mL	80 mL
Glucose (e.g. Glucodin)	2 level teaspoons	240 mL
Sugar	2 level teaspoons	240 mL

Source: Women's and Children's Health Network 2001, *Parenting and child health—gastroenteritis*, Government of South Australia, Adelaide, viewed 17 May 2011, www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=303&id=1845#33.

Do not give undiluted fruit juice, fizzy drinks, low-calorie soft drinks, sports drinks, energy drinks or full-strength cordial to children with diarrhoea—this can increase diarrhoea and dehydration.

Breastfed children

Breastfeeding mothers should continue to breastfeed and offer the breast more often. Offer water (boiled if the infant is less than 6 months old) or oral rehydration solution between feeds.

Bottle-fed or formula-fed infants

It is not necessary or recommended to stop feeding your child formula if they have diarrhoea or vomiting. Continue normal-strength formula or milk if the child is hungry, and offer oral rehydration solution or safe drinks as recommended above. If you do decide to withhold formula, you must give the child other safe drinks.

Reintroducing food

Reintroduce food within 24 hours of the onset of symptoms, even if the diarrhoea has not settled. Suitable foods to start off with include bread, plain biscuits, potatoes, rice, noodles, vegetables, plain meats, fish and eggs. Gradually reintroduce other foods, such as dairy foods, and sweet foods, such as jelly, honey and jam.

Ear infections

Description

Ear infections (otitis) are common health problems for young children. They cause pain and distress to children, may affect their hearing and can wake them up at night. Ear infections can be caused by bacteria or viruses, and often appear after a cold. This is because the tubes between the ear and the throat are much smaller in young children, which makes it easier for germs to travel from the throat or nose to the ear. The most common age for middle ear infections is between 6 months and 2 years.

Most ear infections in children involve the middle ear or the outer ear. Middle ear infections (also known as otitis media) occur on the inside of the eardrum. Because this is a small space, infection puts pressure on the eardrum, causing pain. Outer ear infections occur on the outside of the eardrum or ear canal and are often associated with swimming.

A young child may not be able to tell you they have a sore ear. However, they may be pulling or rubbing their ear, have a fever or vomit. The child may be distressed; crying that stops suddenly may mean that the eardrum has burst.

Most children will have occasional ear infections that will get better quickly and are not usually serious. Children who have recurrent ear infections may develop 'glue ear'—when the middle ear is filled with a sticky fluid that looks similar to honey. This may last for many weeks or months. It often follows one or more ear infections, but sometimes happens when there does not seem to have been any infection. The fluid in the middle ear makes it harder for the child to hear. Glue ear becomes less likely as the child gets older.

Rarely, a middle ear infection may spread, and the child may develop mastoiditis (an infection in the skull). The area behind the ear will be red, and the ear lobe will stick out and down. A child with these symptoms should see a doctor as soon as possible.

How does it spread?

Ear infections rarely spread from person to person. However, the causes of some ear infections (e.g. the common cold) are very infectious.

Incubation period

The incubation period is usually a few days.

Infectious period

Ear infections are not infectious, but the cold or other infection that caused them is infectious. Germs from ear infections can only be passed from one child to another if there is infectious fluid draining out of the ear.

Exclusion period

A child should not attend the education and care service if there is any fluid coming out of the ear.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- The child should stay at home until they are feeling well.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Any discharge from an ear should be treated as infectious—wash hands thoroughly if they come in contact with ear discharge.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.

Treatment

Antibiotics are usually prescribed for children with middle ear or outer ear infections. Antibiotics probably help the infection to get better more quickly, and they prevent some of the severe infections that can develop from a middle ear infection. Most children will have healthy ears by about 2 weeks from when the infection started, even if they do not have antibiotics. Consider giving paracetamol to relieve pain.

Fungal infections of the skin or nails (ringworm, tinea, athlete's foot)

Description

Tinea is a fungal infection of the skin, including the scalp. It causes a rash that is usually called 'ringworm' if it is on the head or body, 'athlete's foot' if it is between the toes or on the feet, or 'jock itch' if it is in the groin.

Fungi can infect the scalp, skin and nails. The condition looks different depending on where it is located.

Skin

Fungal infections on most areas of skin appear as a flat, spreading, ring-shaped area. The outer edge is usually reddish. The area often contains fluid, including pus, but may be dry and scaly, or moist and crusted. The centre of the patch may appear to be healing.

Scalp and beard

On the scalp and beard, fungal infections may begin as a small pimple that spreads outward, leaving scaly patches of temporary baldness. Infected hairs become brittle and break off easily.

Feet

The characteristics of fungal infections on the feet are scaling or cracking of the skin, especially between the toes, or blisters containing a thin, watery fluid.

Toenails and fingernails

Fungal diseases of the nails are difficult to treat and tend to be a long-term problem. Nails on the hands or feet gradually thicken, discolour and become brittle. Cheesy-looking material forms beneath the nail, or the nail becomes chalky and disintegrates.

How does it spread?

The germ spreads by direct skin contact or by touching contaminated clothing or other articles, infected animals or contaminated soil.

Incubation period

The incubation period varies with the site of infection.

Infectious period

As long as the condition persists, it can be passed from person to person.

Exclusion period

Children with fungal infections of the skin, scalp or nails should be excluded until the day after appropriate treatment has been begun.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until the day after appropriate treatment has begun.
- If an educator or other staff member is infected, they should stay home until the day after appropriate treatment has begun.
- Make sure staff and children practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child home until the day after appropriate treatment has begun.
- Inspect other people in the family for signs of infection.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Seek appropriate treatment early.
- Practise effective hand hygiene.
- Avoid sharing clothes or other personal items that have been in contact with an infected person.
- If pets have ringworm or mange, have them treated by a veterinarian.

Treatment

The condition must be diagnosed correctly—seek medical advice. Fungal infections are very difficult to treat and may take a long time (months or years) to disappear. They are treated by applying antifungal ointment to the affected area, or taking antifungal medications.

Giardiasis

Description

Giardiasis is a form of gastroenteritis caused by a parasite called *Giardia lamblia,* which lives in the bowel of animals, including people, wild animals, pets and farm animals. Untreated water that comes directly from lakes and rivers may also contain *Giardia*.

Symptoms include diarrhoea, foul-smelling faeces, cramping, excessive gas or bloating, fatigue, nausea, and sometimes vomiting or weight loss. Fever and bloody faeces are not usually symptoms of *Giardia* infections. Many infected people and animals have no symptoms.

In education and care services, children and adults who have had *Giardia* may no longer have any symptoms but may still be infected with the parasite. This makes their faeces potentially infectious to others. A person with active diarrhoea is more likely to spread the disease than one who does not have diarrhoea but still has infectious organisms in their faeces.

How does it spread?

Giardia infections spread when:

- infected people do not wash their hands effectively after going to the toilet; contaminated hands can then contaminate food (which may be eaten by other people), or touch surfaces that may be touched by other people
- people's hands become contaminated while handling infected animals or changing the nappy of an infected child
- people drink contaminated water.

Incubation period

The incubation period is commonly 6–9 days, but may range from 5 to 15 days.

Infectious period

People are infectious for as long as the organism is in their faeces, whether or not they have any symptoms.

Exclusion period

Children with *Giardia* infection should be excluded until diarrhoea has stopped for at least 24 hours.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until the child is feeling well and has not had any symptoms for at least 24 hours.
- If an educator or other staff member is ill, they should stay home until they are feeling well and have not had any symptoms for at least 24 hours.
- Educators and other staff who handle food must not return to work until they have been symptom free for 48 hours.
- Make sure staff and children always practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.
- Contact your local health authority if two or more people are ill. Public health workers may be able to identify how the germ has spread through the education and care service, and help prevent further infection. They may also advise if any particular cleaning or disinfecting is required.

Responsibilities of parents

- Keep your child home until they are feeling well and have not had any symptoms for at least 24 hours.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Ensure that staff and children always practise appropriate hand hygiene.
- Ensure that adults or children who are ill are excluded for the appropriate period.

Treatment

Make sure the child has plenty to drink. See a doctor about treatment; the person will not usually be infectious after being treated for several days. It is not usually necessary to test or treat children who have no symptoms.

Glandular fever (Epstein–Barr virus, infectious mononucleosis)

Description

Glandular fever is caused by Epstein–Barr virus. Once a person catches Epstein–Barr virus, the virus remains in their body for life, although it usually does not cause further illness. By adulthood, 90–95% of people have Epstein–Barr virus.

Symptoms of acute glandular fever include fever, tiredness, sore throat and swollen glands. Stomach pain and jaundice (yellowing of skin and eyes) are less common, and some people may develop a red, itchy rash. However, most people will not have any symptoms, including children less than 3 years of age. Symptoms are more common in older children and young adults.

How does it spread?

Epstein–Barr virus spreads from person to person through contact with saliva. Young children may be infected by saliva on the hands of caregivers, or by sucking and sharing toys; however, the virus does not survive very well in the environment.

Incubation period

The incubation period is 4–6 weeks.

Infectious period

The infectious period is not accurately known. The virus is present in the saliva for up to 1 year after illness, and from time to time after that.

Exclusion period

Exclusion is not necessary for glandular fever.

Responsibilities of educators and other staff

- If the child is unwell, advise the parent that the child should stay at home until they are feeling better. (This is out of concern and consideration for the child—it is not an infection control issue.)
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.
- Do not share cups, drink bottles, or other eating or drinking utensils.

Treatment

No effective antiviral medication is available for glandular fever. Most people with glandular fever recover without any treatment.

Haemophilus influenzae type b (Hib)

Description

Despite its name, the bacterium *Haemophilus influenzae* type b (Hib) is not related in any way to influenza ('the flu'). Hib was once the most common cause of life-threatening infections in children younger than 5 years in Australia, until a vaccine was introduced in 1993. The bacterium may cause swelling in the throat (epiglottitis), which can block breathing, and pneumonia. It can infect the membranes covering the brain (meningitis); the joints; or the tissue under the skin, usually on the face. Symptoms of Hib meningitis are very similar to other types of meningitis, including severe headache, stiff neck, fits, severe drowsiness, difficulty waking up, difficulty breathing and loss of consciousness. Hib epiglottitis causes noisy breathing and may block breathing altogether.

How does it spread?

The disease is spread by contact with airborne droplets from the nose or throat, or by contact with surfaces contaminated with infected droplets.

Incubation period

The incubation period is 2–4 days.

Infectious period

Hib is infectious as long as there are germs present in the nose and throat. Hib cannot spread after the infected person has been on appropriate antibiotics for 48 hours.

Exclusion period

Children with Hib should be excluded until they have completed a course of appropriate antibiotics.

Responsibilities of educators and other staff

- Call a doctor immediately if any child has symptoms of Hib.
- Advise the parent that the child must stay home until they are feeling well, have completed a course of appropriate antibiotics and have been issued a medical clearance certificate from a health professional.
- Check the immunisation records of all children who come in contact with a child with Hib. Non-immunised children who have had close contact with the child with Hib will need special antibiotics.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Ensure that babies are vaccinated against Hib.
- Keep your child at home until they are feeling well, have completed a course of appropriate antibiotics and have been issued a medical clearance certificate from a health professional.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Hib is a vaccine-preventable disease. Communities in which everyone is immunised offer the best protection against Hib.
- If needed, your local public health unit may help arrange for other children, educators and other staff to be given courses of an appropriate antibiotic. Adults are not at risk of disease, but they may be carrying the germ in their throats.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.

Treatment

A child with Hib will be treated in hospital with antibiotics.

Hand, foot and mouth disease

Description

Hand, foot and mouth disease is a common viral infection. It is not related to the disease in cattle with a similar name (foot-and-mouth disease).

Symptoms of hand, foot and mouth disease include tiny blisters on various parts of the body, including in the mouth, and on the fingers, palms of hands, buttocks, nappy area, soles of the feet, upper arms or upper legs. The blisters last a little longer than a week. Some children may also have a fever, sore throat, runny nose or cough. Vomiting or diarrhoea are uncommon. The most troublesome symptom is often the blisters in the mouth, which make it difficult for the child to eat or drink.

How does it spread?

The virus is in the fluid of the blisters and can be spread by becoming airborne during coughing, singing, talking, etc. The virus is also found in the child's faeces, and can be present in faeces for several weeks after the child has recovered.

Incubation period

The incubation period is usually 3–5 days.

Infectious period

People are infectious as long as the blisters contain fluid. Faeces can remain infectious for several weeks.

Exclusion period

Children with hand, foot and mouth disease should be excluded until all blisters have dried.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well and all blisters have dried.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until all the blisters have dried and the child is feeling well.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Allow blisters to dry out naturally. The blisters should not be deliberately burst because the fluid within them is infectious.

Treatment

Usually no treatment is required.

Head lice

Description

Head lice are insects that live in hair and suck blood from the scalp. They are a nuisance because they can cause itching of the scalp, but they do not cause disease or illness.

Female head lice lay their eggs and glue them to the base of hair shafts. The eggs are pale cream to yellowish brown in colour and hatch after 7–10 days. The immature lice grow into adults over 6–10 days and start biting the scalp to feed on blood. Adult lice mate, the females lay more eggs, and the cycle begins again.

How does it spread?

Head lice can only be spread from one person to another by direct head-to-head contact—the lice cannot jump or fly.

Head lice do not live or breed on animals, bedding, furniture, carpets, clothes or soft toys. They cannot spread by sharing hats.

Incubation period

Head lice eggs take 7–10 days to hatch, and adult lice can lay new eggs after another 6–10 days. The lice in a person's hair can be at various stages of their life cycle, so new eggs can be laid and new lice can hatch continuously.

Infectious period

As long as the eggs or lice are alive, they can spread to other people by direct head-to-head contact.

Exclusion period

Children do not have to be sent home immediately from an education and care service if head lice are detected. The child may return to the education and care service as soon as 'effective treatment' has started. An effective treatment is when a treatment is used and all the lice are dead.

Responsibilities of educators and other staff

- If one child in a class has head lice, it is likely that several others also have them. Do not isolate a child who is known to have lice—it does not make sense and can be humiliating for the child.
- Reduce head-to-head contact between children when the education and care service is aware that someone has head lice.
- Keep families informed if there is someone in the education and care service with head lice.
- Support parents and children who have head lice by providing factual information, reducing parental anxiety and not singling out individual children with head lice.

Responsibilities of parents

- Check your child's head once a week for head lice. If you find any lice or eggs, begin treatment immediately. Check for effectiveness of the treatment every 2 days until no lice are found for 10 consecutive days.
- You may send your child back to the education and care service as soon as effective treatment has started.
- Check for head lice in other family members as well.

Controlling the spread of infection

- Educate staff, children and parents about head lice.
- Recommend that staff and children tie back long hair to reduce the chance of spread.

Treatment

Adult lice are difficult to see; look for eggs by shining a strong light on the hair near the scalp, or using the conditioner and combing technique:

1. Untangle dry hair with an ordinary comb.
2. Apply hair conditioner to dry hair (white conditioner makes it easier to see the eggs). Use enough conditioner to cover the whole scalp and all the hair from roots to tips.
3. Use an ordinary comb to evenly distribute the conditioner, and divide the hair into four or more sections using hair clips.
4. Starting with a section at the back of the head, place the teeth of a head lice comb flat against the scalp. Comb the hair from the roots through to the tips.
5. Wipe the comb clean on a tissue after each stroke and check for head lice or eggs on the tissue.
6. Comb each section twice until you have combed the whole head. If the comb becomes clogged, use an old toothbrush, dental floss or a safety pin to remove the head lice or eggs.

The conditioner and combing technique is also an effective head lice treatment. Keep combing the whole head until all the conditioner is gone. Repeat the process daily until no lice or eggs have been found for 10 days.

Chemical treatments are also available for head lice—your pharmacist can help you choose a product.

For more information about head lice, see:

Queensland Health
www.health.qld.gov.au/headlice/documents/13443.pdf

James Cook University
www.jcu.edu.au/school/phtm/PHTM/hlice/hlinfo1.htm

Women's and Children's Health Network, South Australian Government
www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=304&id=1664

Hepatitis A

Description

Hepatitis A is caused by a virus and is highly infectious. The virus grows in the liver and passes into the intestines. It can cause abdominal pain, loss of appetite, nausea, low-grade fever and tiredness, sometimes followed by yellow skin and eyes (jaundice), dark urine and pale faeces. Symptoms can last from 1 week to several months; children under 3 years of age rarely have any symptoms.

How does it spread?

Hepatitis A spreads when the virus enters the body by the mouth. This can happen when:

- people drink contaminated water or eat contaminated food
- infected people do not wash their hands effectively after going to the toilet; contaminated hands can then contaminate food (which may be eaten by other people), or touch surfaces that may be touched by other people
- people are changing the nappy of an infected child, if their hands become contaminated and they do not wash them effectively.

The virus can survive on unwashed hands for several hours, and in food kept at room temperature for even longer. Heating or freezing food may not always kill the virus if the food is contaminated.

Incubation period

The incubation period can be 15–50 days, but is usually 28–30 days.[31]

Infectious period

People are most infectious in the 2 weeks before jaundice occurs, and then less infectious during the first week of jaundice. Most people are probably no longer infectious after the first week of jaundice, although some infants and children may have the virus in their faeces for up to 6 months.[30]

Exclusion period

People with hepatitis A should be excluded until they receive a medical certificate of recovery from their doctor, and for 7 days after the onset of jaundice or illness.

Responsibilities of educators and other staff

- Make sure staff and children always practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well, and for 7 days after the onset of jaundice or illness. You must get a medical certificate of recovery from a doctor when the child is better.
- Encourage effective hand hygiene at home.

31 'Hepatitis A', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC, p. 208.

Controlling the spread of infection

- It is important for the infected person to see their doctor. The doctor may offer antibodies or vaccination to all people living in the same house as the infected person. If given within 14 days of exposure, antibodies may prevent hepatitis A or lessen the severity of the symptoms.
- Your local public health unit can advise on any necessary treatment for children, educators and other staff.
- Ensure that educators, other staff and children always practise appropriate hand hygiene.
- Ensure that appropriate cleaning practices are followed.

Treatment

There is no treatment for hepatitis A, but it is a vaccine-preventable disease. Aboriginal and Torres Strait Islander children in high-risk areas receive a hepatitis A vaccine on the National Immunisation Program. Vaccination is recommended for educators and other staff.

Hepatitis B

Description

Hepatitis B infection is caused by the hepatitis B virus. The virus is mainly found in the blood of an infected person, but also in some other body fluids such as semen, saliva, breast milk and vaginal fluids.

About 50% of adults and 90% of children do not develop any symptoms at the time of infection. If they do occur, symptoms may include abdominal discomfort, loss of appetite, nausea, fever, tiredness, joint pain, dark urine, and yellow skin or eyes (jaundice).

Women who have this disease during pregnancy may transmit it to their infants, who may remain infected for many years.

How does it spread?

Hepatitis B spreads when infectious blood or body fluids come in contact with mucous membranes (e.g. eyes, nose, mouth or genitals) or body tissues under the skin (e.g. through needle puncture or broken skin). The virus does not spread through food or water, or through ordinary social contact.

Incubation period

The incubation period is usually 45–180 days, with an average of 60–90 days.[32]

Infectious period

An infected person's blood is infectious many weeks before symptoms begin, and remains infectious during the symptoms. If a person develops chronic hepatitis B, they can be infectious for life.

Hepatitis B virus can remain infectious on surfaces for up to 7 days.[31]

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Routinely check the vaccination status of all children.
- Practise standard precautions for handling blood and other body fluids at all times, because you may not know if people have the virus.
- If inappropriately discarded sharps (needles and syringes) are an identified hazard at the education and care service, ensure procedures for the safe handling and disposal of sharps, and provide training to educators and other staff.
- Ensure that the education and care service has a protocol for managing accidental exposures to blood and body fluids, and needlestick injuries, if relevant.
- Ensure that open wounds are covered with a waterproof dressing.

Responsibilities of parents

- Keep the child at home until they feel better.
- Ensure that open wounds are covered with a waterproof dressing.

32 'Hepatitis B', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC, p. 287.

Controlling the spread of infection

- Effective vaccines are given at birth, and at 2, 4 and 6 months of age under the National Immunisation Program. A course of three injections over 6 months can be given at other ages for people who have not previously been vaccinated. In some states of Australia, there is a two-dose school-based vaccination program for high-school children. Completion of a full course of vaccine will give protection against hepatitis B infection in more than 90% of people.
- Take precautions when handling blood-contaminated items.
- Ensure that appropriate cleaning practices are followed.
- Cover any open sores, cuts or abrasions that are weeping or moist.

Treatment

There is no specific treatment for acute hepatitis B. Hepatitis B antibodies may be offered to non-immune people who have had contact with an infected person's blood or body fluids during childbirth, through needle sharing or a needlestick injury, or through sexual contact.

People with problems due to chronic hepatitis B can seek help at specialist liver treatment centres and their state or territory hepatitis organisation.

Hepatitis C

Description

Hepatitis C is caused by the hepatitis C virus. The disease is slow acting and often has no symptoms. In Australia, it is thought that around 250 000 people are infected, and at least half of these people do not know they are infected. If symptoms do occur, they can include abdominal discomfort, loss of appetite, nausea, fever, tiredness, joint pain, dark urine, and yellow skin or eyes (jaundice).

How does it spread?

Hepatitis C is spread by direct contact with infected blood or body fluids, usually through needle puncture, broken skin or a break in the mucous membranes. Around 90% of new cases of hepatitis C infections in Australia are associated with using non-sterile drug-injecting equipment. Hepatitis C is not classed as a sexually transmitted infection. The rate of mother-to-baby transmission is around 5%, and household transmission is uncommon.

Hepatitis C is not transmitted though air or water. It is not transmitted by sharing plates, cups or cutlery; in swimming pools or toilets; or by kissing, coughing, sneezing or spitting.

Incubation period

The incubation period ranges from 2 weeks to 6 months (most commonly 6–9 weeks).[33] Most people who are infected do not develop symptoms of acute illness.

Infectious period

People are infectious for one or more weeks before symptoms start and, if chronic hepatitis C develops, they remain infectious for the rest of their lives.

Exclusion period

Exclusion is not necessary. A child who is unwell may need to stay at home until they are feeling better.

Responsibilities of educators and other staff

- Practise standard precautions for handling blood and other body fluids at all times, because you may not know if people are carrying the virus.
- Ensure that open wounds are covered with a waterproof dressing.

Responsibilities of parents

- Consider having your child immunised against hepatitis A and hepatitis B to prevent further liver infections (if they are not already vaccinated).
- Ensure that open wounds are covered with a waterproof dressing.

33 'Hepatitis C', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC, p. 295.

Controlling the spread of infection

- There is no vaccine for protection against hepatitis C.
- Take precautions when handling blood-contaminated items.
- Make sure staff and children always practise effective hand hygiene.
- Ensure that appropriate cleaning practices are followed.
- Cover any open sores, cuts or abrasions that are weeping or moist.

Treatment

Treatments for hepatitis C are effective, and most people who are treated clear the virus from their body and reduce damage to their liver.

HIV (human immunodeficiency virus), AIDS (acquired immunodeficiency syndrome)

Description

HIV (human immunodeficiency virus) is a virus that is carried in blood and body fluids and damages the immune system. Infection with HIV can lead to AIDS (acquired immunodeficiency syndrome), where the immune system is no longer able to protect the body from other diseases, such as infections and cancers. HIV is a lifelong infection.

How does it spread?

HIV spreads through direct contact with infected blood and body fluids, usually through needle puncture, broken skin or a break in the mucous membranes. In Australia, most HIV infections are caused by:

- unprotected sex
- sharing drug-injecting equipment
- spread of the virus from mother to infant during either pregnancy, birth or breastfeeding
- receiving blood or blood products before screening was introduced in 1985.

HIV does not spread through social contact in schools, at home or in the workplace. It does not spread through air or water; swimming pools or toilets; sharing of plates, cups or cutlery; or kissing, coughing, sneezing or spitting. HIV is not spread by mosquitoes or other biting insects.

Incubation period

The incubation period is variable. The time from infection to development of detectable antibodies is generally less than 1 month.[34] Symptoms of the disease may not be evident for months or even years after HIV infection. If there are symptoms a few weeks after infection, these may include a mild illness resembling a cold or flu, including a low-grade fever, muscle aches and headache; sometimes a rash may appear.

Infectious period

People can spread the virus to other people about 2–4 weeks after becoming infected. A blood test for antibodies to the virus will show whether a person is infected. People with HIV remain infectious for their whole lives.

Exclusion period

Exclusion is not necessary. Children with impaired immunity, including children with HIV, should stay at home during outbreaks of serious contagious diseases such as measles or chickenpox.

Responsibilities of educators and other staff

- Maintain confidentiality if a child has HIV.
- Practise standard precautions for handling blood and other body fluids at all times, because you may not know if people are carrying the virus.
- Ensure that open wounds are covered with a waterproof dressing.

34 'Acquired immunodeficiency syndrome', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC, p. 4.

Responsibilities of parents

- Some parents may tell educators or other staff if their child has HIV, but you do not have to.
- Children with HIV are more likely to have severe infections than others, and more consideration and care must be given to their immunisation with common vaccines.
- Keep children with HIV at home during outbreaks of infectious diseases in the education and care service.
- Ensure that open wounds are covered with a waterproof dressing.

Controlling the spread of infection

- Practise standard precautions for handling blood and other body fluids at all times for all people.
- Ensure that open wounds are covered with a waterproof dressing.

Treatment

Treatment dramatically improves the lives of people living with HIV. Sometimes treatments have side effects, and the virus may become resistant to the medication. Regular assessment is important in monitoring the effects of HIV infection, medication and development of complications.

Human parvovirus B19 (erythema infectiosum, slapped cheek syndrome, fifth disease)

Description

Human parvovirus B19 is a common viral infection that usually causes a mild illness in children. About 20% of infected children will have no symptoms; in others, symptoms include mild fever and muscle aches, followed 2–5 days later by a red rash on the face (hence the name 'slapped cheek syndrome') and a lacy red rash on the trunk and limbs. The rash can sometimes be itchy. It will usually disappear after 7–10 days, but can come and go for several weeks, often reappearing in response to heat. Infection provides lifelong immunity.

Human parvovirus can be transmitted to unborn babies if the mother is infected. In less than 5% of these cases, the virus may cause severe anaemia (low red blood cell count) in the baby, resulting in miscarriage. The risk of miscarriage is highest if the mother is infected during the first half of pregnancy. Infants that survive if the mother is infected do not have birth defects.

Animals such as cats and dogs can have other types of parvovirus infections, but they cannot catch human parvovirus from people, and they cannot pass their parvovirus infections to people.

How does it spread?

Human parvovirus spreads by airborne droplets, secretions from the nose and throat, or exposure during pregnancy.

Incubation period

The incubation period is variable, but is usually 4–20 days.

Infectious period

People are infectious until the rash appears.

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Advise the parent to keep the child at home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.
- Pregnant women who are at risk of exposure can have a blood test to show if they are immune to the virus. More than 50% of women will already have had the infection and developed immunity—these women and their unborn babies are protected from infection and illness. Pregnant women who are not immune should consider strategies to reduce their risk of infection, including regularly performing effective hand hygiene. It is not necessary for these women to be excluded if there is a known case of human parvovirus in the education and care service.

Treatment

There is no treatment for human parvovirus.

Impetigo (school sores)

Description

Impetigo is a skin infection caused by *Staphylococcus* and/or *Streptococcus* bacteria, which commonly occurs in school-aged children. Impetigo appears as flat, yellow, crusty or moist patches or blisters on the skin, usually in exposed areas such as the face, arms and legs. The sores can be more than 1 cm in diameter. The disease is very infectious, but it is not dangerous.

Staphylococcus and *Streptococcus* bacteria often live harmlessly on and in the body, such as on the skin and in the nose. Cuts, abrasions, or dry and cracked skin may allow the bacteria to cause infections in deeper skin layers. Healthy, intact skin can sometimes develop impetigo as well.

How does it spread?

The sores are filled with bacteria, which spread by contact with the sores or infected fluid. Because the sores are usually itchy, people can scratch them and spread the infection, via their hands, to other parts of the body or to other people. The infection can also be spread by touching contaminated clothing or other items.

Incubation period

The incubation period depends on the bacteria causing the sores. It is usually 1–3 days for streptococcal infections, and 4–10 days for staphylococcal infections.

Infectious period

People are infectious for as long as there is fluid weeping from the sores. They are no longer infectious 24 hours after starting antibiotic treatment, or when the sores have healed.

Exclusion period

Children with impetigo should be excluded until appropriate antibiotic treatment has commenced. Any sores on exposed skin should be covered with a watertight dressing.

Responsibilities of educators and other staff

- Advise the parent to keep the child at home until they have had antibiotic treatment for at least 24 hours, or until the sores are dry.
- Cover sores with a waterproof dressing, and put all dressings in a lidded bin as soon as they are removed.
- Make sure staff and children practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they have had antibiotic treatment for at least 24 hours. If antibiotics are not used, keep the child at home until the sores are dry.
- Cover any sores on exposed skin with a waterproof dressing.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Ensure that staff and children practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed.
- Cover sores with a waterproof dressing, and put all dressings in a lidded bin as soon as they are removed.

Treatment

A doctor may recommend the use of antibiotic ointment, or antibiotics taken by mouth. The child should go back to their doctor if the condition does not improve.

Influenza

Description

Influenza ('the flu') is a viral disease of the respiratory tract, characterised by fever, chills, headache, muscle aches and pains, a head cold and a mild sore throat. It can often cause a severe cough. The infected person usually recovers within 2–7 days.

How does it spread?

Influenza is very infectious. It can spread through the air by coughing and sneezing, as well as by hands, cups and other objects that have been in contact with an infected person's mouth or nose.

Incubation period

The incubation period is usually 1–3 days.

Infectious period

In adults, the infectious period is probably from 1 day before the onset of symptoms to 3–5 days from the onset of symptoms. For young children, the infectious period is 7–10 days.[35]

Exclusion period

People with influenza should stay at home until they are feeling well.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well.
- If an educator or other staff member is ill, they should stay at home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Encourage cough and sneeze etiquette and effective hand hygiene at home.

Controlling the spread of infection

- Annual vaccination is available against influenza. People need to be vaccinated every year because immunity decreases, and new influenza strains circulate each year.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

35 'Influenza', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC, p. 318; Communicable Diseases Network Australia 2011, *Influenza infection: CDNA guidelines for public health units,* CDNA, Canberra.

Treatment

There is no specific treatment for influenza. Because it is caused by a virus, antibiotics will not help treat influenza. However, antibiotics may be prescribed if the person has a secondary infection or complication that is caused by bacteria.

Decongestants and other cold remedies are widely promoted for relieving the symptoms of colds, but they are unlikely to help. In fact, they can cause side effects such as irritability, confusion and sleepiness. Oral decongestants are not recommended for children under the age of 2 years. Cough medicines do not reduce the frequency, severity or duration of a cough. The cough is there for a reason: it serves a useful function in clearing mucus from the child's airways and preventing secondary infection. If you are concerned, take the child to a doctor.

Do not give aspirin to any child under the age of 12 years unless specifically recommended by a doctor.

Listeriosis

Description

Listeriosis is caused by bacterium (*Listeria monocytogenes*) that is commonly found in soil, water and animal feed. It can cause a range of symptoms, including fever, aches, nausea, vomiting and gradual onset of confusion. Most people only have a mild illness, but, if a pregnant woman is infected, it can cause miscarriage, stillbirth or premature birth. Infants born to infected mothers can also suffer a range of serious illnesses and complications.

How does it spread?

The bacteria that cause listeriosis are usually spread through food. Unlike most other foodborne bacteria, *Listeria* tends to multiply in refrigerated foods that have been contaminated. Foods associated with listeriosis include:

- soft cheeses (e.g. brie, camembert, ricotta, feta, blue) and soft-serve ice cream
- dairy products that are raw or unpasteurised (e.g. milk)
- pre-cooked meat products (e.g. pâté, deli meats)
- pre-prepared or pre-packaged salads or fruits (e.g. from salad bars)
- raw or pre-cooked seafood (e.g. oysters, sashimi, prawns).

Contact with infected farm animals can also spread the infection.

Incubation period

The incubation period varies from 3 days to 70 days; the average is 3 weeks.[36]

Infectious period

Listeria does not usually spread from person to person, except between pregnant women and their unborn children, or during delivery of the infant.

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well.
- If an educator or other staff member is ill, they should stay at home until they are feeling well.
- Make sure staff and children practise effective hand hygiene, especially after handling food.
- Inform staff who are pregnant or considering pregnancy about listeriosis risks and how to protect against infection.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

36 'Listeriosis', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC, p. 360.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Ensure effective hand hygiene at home, especially after handling food.

Controlling the spread of infection

- Ensure that staff and children always practise appropriate hand hygiene.
- Pregnant women or women considering pregnancy can reduce their risk of exposure to *Listeria* by:
  - avoiding high-risk foods (see above)
  - ensuring that raw fruit and vegetables have been washed in clean water
  - washing hands, knives and cutting boards after handling uncooked food
  - avoiding contact with sick farm animals
  - avoiding using untreated manure in vegetable gardens.
- Pregnant women or women considering pregnancy should pay particular attention to good hand hygiene after handling food.

Treatment

Listeriosis can be treated with antibiotics.

Measles

Description

Measles is a highly infectious and serious viral disease. Symptoms include a fever, cough, and sore, red eyes (conjunctivitis). This is followed by a rash of large, flat, reddish blotches that often join up and completely cover the skin. The rash spreads over the entire body, and usually disappears within 6 days.

The reason that measles is so concerning is that it often causes very serious complications, including pneumonia and inflammation of the brain. Because of this, measles should **not** be considered a simple disease. Children with measles are usually very ill; adults with measles are usually hospitalised.

The number of cases of measles in Australia has fallen dramatically over the past 15 years as a result of immunisation programs and other public health measures. However, measles is regularly brought into Australia by overseas travellers, so people in Australia can still be exposed to the virus.

How does it spread?

Measles spreads by mouth-to-mouth contact and airborne droplets. The virus is very infectious can stay in the air for up to 2 hours after an infected person has left the room. It can also spread indirectly by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, tissues, toys, eating utensils).

Incubation period

The incubation period is 7–18 days—usually 10 days.

Infectious period

The infectious period is from about 4–5 days before the rash begins until the fourth day after the rash appears.

Exclusion period

Children with measles should be excluded for at least 4 days after the appearance of the rash.

Responsibilities of educators and other staff

- Contact your local public health unit for advice.
- Review vaccination records.
  - Ensure that children have received one or two doses of measles–mumps–rubella (MMR) vaccine, depending on their age. The public health unit can advise if any children who have not been vaccinated will need to be excluded.
  - Ensure that all staff have received two doses of MMR if they were born during or after 1966.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Ensure that children are fully vaccinated against measles.
- Observe the exclusion period. Keep the child at home until they are feeling better.
- Advise any friends, family or social contacts that your child has measles. These contacts may need to seek medical advice if they are pregnant, considering starting a family or not immunised; have a medical condition that compromises their immune system (such as cancer or human immunodeficiency virus—HIV); or are taking certain medications.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Measles is best prevented through immunisation with the MMR vaccine. Children should be vaccinated at 12 months of age and again at 4 years of age. The vaccine gives lasting immunity.
- If the education and care service has a suspected or definite case of measles, contact your local public health unit. The staff from the public health unit will help you and local doctors to control the disease.
  - Write down the dates that the person with measles was in the education and care service over the past 10 days.
  - Discuss with the public health staff who in the education and care service might need preventive treatment and who should be excluded from care.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

There is no specific treatment for measles.

Meningitis (viral)

Description

Meningitis is an infection of the membranes that cover the spinal cord and brain. A variety of viruses can cause meningitis, including those that cause gastroenteritis, measles, mumps, chickenpox and herpes. Viral meningitis is rarely serious, although symptoms may be severe. People usually recover completely.

Symptoms may include headache, fever, vomiting, neck stiffness, joint pain, drowsiness or confusion, and photophobia (discomfort when looking at bright lights).

How does it spread?

The spread depends on the virus. Some viruses can spread by contact with airborne droplets; others can spread by contact with infected faeces or contaminated surfaces.

Incubation period

The incubation period varies, depending on the specific virus that has caused the meningitis.

Infectious period

The infectious period also varies, depending on the specific virus that has caused the meningitis.

Exclusion period

People with viral meningitis should be excluded until they are feeling well.

Responsibilities of educators and other staff

- Inform parents immediately if their child has symptoms of meningitis, and advise them to seek medical help.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Seek medical advice, and keep the child at home until they are feeling well.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

There is no specific treatment for viral meningitis.

Meningococcal infection

Description

Meningococcal infection is caused by the Neisseria *meningitidis bacterium*, also known as the 'the meningococcus'. There are at least 13 different groups of meningococcus, but most infections in Australia are caused by group B and group C. Infections with group C have become much less common since the widespread use of meningococcal C vaccines.

Meningococcal infection is severe, and may cause meningitis (infection of the outer lining of the brain and spinal cord), septicaemia (infection of the blood), joint infection, eye infection, pneumonia and rash. Symptoms in infants and young children include fever, refusing feeds, fretfulness, vomiting, rash of reddish-purple spots or bruises, high-pitched or moaning cry, or pale or blotchy skin. The child may be difficult to wake.

Meningococcal bloodstream infections can cause shock and death within hours of symptoms starting. In Australia, 5–10% of people with meningococcal disease die, despite rapid treatment.[37] Most cases occur in children under 5 years of age.

How does it spread?

Meningococcal bacteria can be found in the nose and throat of up to 10% of people, where they are almost always harmless. These people are the 'carriers' of the bacteria. In a very small number of people, for reasons that are not clear, the bacteria spread into the bloodstream and can cause very serious illness.

The bacteria are passed from person to person through prolonged close contact, or through coughing and sneezing. They do not spread by contact with saliva from the front of the mouth (e.g. from sharing drinks, eating utensils), although people may carry the bacteria in the back of their throat.

Incubation period

The incubation period is usually 3–4 days, but can range from 1 to 10 days.[38]

Infectious period

The person is infectious for as long as meningococcal bacteria are present in their nose and throat. If the person takes effective antibiotics, the bacteria will usually be cleared from the nose and throat within 24 hours.

Exclusion period

People with meningococcal disease should be excluded until they have completed a course of an appropriate antibiotic.

Responsibilities of educators and other staff

- Seek urgent medical attention for any person with any of the signs of meningococcal infection, such as rapid onset of illness, or a rash of reddish-purple spots or bruises.
- Seek advice from your local public health unit.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

37 SA Health—Communicable Disease Control Branch 2010, *You've got what? Meningococcal infection,* SA Health, Adelaide, viewed 9 June 2010, www.dh.sa.gov.au/pehs/ygw/meningococol-pehs-sahealth-2009.pdf.

38 National Health and Medical Research Council 2008, *The Australian immunisation handbook,* 9th edn, NHMRC, Canberra.

Responsibilities of parents

- Make sure that children receive meningococcal vaccination.
- Observe the exclusion period, and keep the child at home until they are feeling well.
- Public health staff can advise on the need for antibiotics for very close contacts (such as family members) of someone with meningococcal disease, to kill any of the bacteria they may carry. Usually, all very close contacts are treated because there is no easy and quick way of finding out who is the carrier.

Controlling the spread of infection

- Meningococcal C infection can be prevented by immunisation. Fully immunised communities offer the best protection against meningococcal C infection. There is no vaccine to protect against meningococcal B infection in Australia.
- If appropriate, public health staff can arrange for children and staff of the education and care service to be given a course of appropriate antibiotics.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

People with meningococcal disease are treated with antibiotics in hospital.

Molluscum contagiosum

Description

Molluscum contagiosum is a common skin infection caused by the molluscipox virus. The virus causes a rash of pearly, skin-coloured lumps that can appear anywhere, but usually occur under the arms, at the backs of the knees, on the insides of the elbows and at the tops of the thighs. The lumps are usually small, with a white centre and an indented surface.

The disease is not serious and usually disappears without treatment, but this may take several months, or even longer in people with compromised immune systems. There are no long-term effects of the disease.

How does it spread?

The virus spreads by direct skin-to-skin contact, especially where there are minor breaks in the skin, and is most common in children.

Incubation period

The incubation period is usually 2–7 weeks, but sometimes longer.

Infectious period

The infectious period lasts as long as the lumps are present. This may be several months.

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Make sure staff and children practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Avoid direct contact with the lumps, but it is not necessary to cover them.
- Ensure that children and staff practise appropriate hand hygiene.
- Ensure that appropriate cleaning practices are followed.

Treatment

Lumps will disappear without treatment, although this may take several months. Various treatments, such as laser therapy, freezing and surgery, are occasionally used for cosmetic reasons.

Mosquito-borne diseases

Description

Mosquito-borne diseases spread through mosquito bites. Mosquitoes may pick up diseases from infected animals or infected humans, but not every mosquito carries a disease.

Common mosquito-borne diseases in Australia include Ross River virus, Barmah Forest virus and dengue fever. Other mosquito-borne diseases, such as malaria, Murray Valley encephalitis and Japanese encephalitis, are very rare.

Ross River virus occurs throughout Australia and is spread by a variety of mosquito species. Symptoms include fever, headache, and joint pain and swelling, followed by a rash. The joint pain can be severe and usually lasts 2–6 weeks. However, 70–90% of people have only slight symptoms, and some people, especially children, have no symptoms at all.

Barmah Forest virus has similar symptoms to Ross River virus, but the illness is usually shorter. Australia is the only country where Barmah Forest virus has been identified.

Dengue fever can cause no symptoms, mild symptoms with fever, or severe symptoms causing death. Symptoms can include sudden onset of fever, intense headache, muscle and joint pain, vomiting, diarrhoea, skin rash as fever subsides, severe itching, minor bleeding and extreme tiredness.

Dengue haemorrhagic fever is a rare complication of dengue fever that causes rapid deterioration, heart and lung complications, shock and sometimes death.

How does it spread?

Mosquito-borne diseases are not spread directly from person to person. The mosquito picks up the virus from an infected person or animal, and spreads it when it feeds on another person or animal.

Incubation period

The incubation period varies according to the virus:

- Ross River virus: usually 3–11 days
- Barmah Forest virus: usually 3–11 days
- dengue fever: usually 4–7 days; can range from 3 to 14 days.

Infectious period

Mosquito-borne diseases do not spread directly from person to person, so there is no infectious period. A mosquito that bites an infected person may transmit the infection if they bite another person.

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

See 'Controlling the spread of infection'.

Responsibilities of parents

See 'Controlling the spread of infection'.

Controlling the spread of infection

- Avoid being outdoors when mosquito bites are most likely to happen. Some mosquitoes will bite during the day, but many are most active for 2–3 hours around sunset and sunrise.
- Use personal 'tropical strength' insect repellents containing DEET or picaridin—always read the label and follow the manufacturer's instructions, particularly for infants and young children.
- Make sure insect screens are in good condition, with no holes.
- Wear long-sleeved, loose, light-coloured clothing that covers as much of the body as possible. Mosquitoes can bite through tight clothing.
- Remove any objects in the area that can hold water, such as old tyres or troughs—mosquitoes breed in still water.
- Empty pot-plant trays at least once a week, or put sand in them to take up the water.
- Keep fish, such as small native fish, in fish ponds or unused swimming pools to eat the baby mosquitoes as they breed.
- Empty paddling pools each day, as soon as children have finished playing in them.
- Empty birdbaths and pets' drinking water bowls at least once a week.
- Put a screen with holes less than 1 millimetre diameter over inlets to rainwater tanks.

Treatment

There is no specific treatment for Ross River virus, Barmah Forest virus or dengue fever.

Mumps

Description

Mumps is an infection caused by a virus that is now uncommon in Australia due to immunisation. About one-third of people with mumps will have only mild symptoms or no symptoms at all.[39] When symptoms do occur, they include swelling of the salivary glands, high fever and headache; males may have tender testicles, and females may have pain in the lower abdomen.

Serious complications can occur, including inflammation of the spinal cord and brain, hearing loss, sterility (very rare) or death (extremely rare).

How does it spread?

The mumps virus spreads by direct contact with droplets from the sneeze or cough of an infected person.

Incubation period

The incubation period can be 12 to 25 days; it is usually 16–18 days.

Infectious period

The infectious period begins up to 6 days before the glands begin to swell, and for up to 9 days after swelling begins.

Exclusion period

People with mumps should be excluded for 9 days after the onset of swelling, or until the swelling goes down, whichever is soonest.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until they are feeling well—this must be at least until the swelling goes down or 9 days after the onset of swelling.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Make sure children are vaccinated against mumps.
- Keep the child at home until they are feeling well—this must be at least until the swelling goes down or 9 days after the onset of swelling.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Mumps can be prevented by immunisation. Fully immunised communities offer the best protection against mumps. Children should be immunised against mumps at 12 months of age and again at 4 years with the measles–mumps–rubella (MMR) vaccine. The vaccine provides long-term immunity; having the illness itself provides lifelong immunity.

39 National Health and Medical Research Council 2008, *The Australian immunisation handbook*, 9th edn, NHMRC, Canberra.

- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

There is no treatment for mumps, but it is a vaccine-preventable disease. Children are vaccinated against mumps under the National Immunisation Program.

Norovirus

Description

Norovirus is a form of gastroenteritis caused by a group of viruses. Vomiting is usually the main symptom and can be violent and profuse. Other symptoms may include diarrhoea, nausea, stomach cramps, fever, headache and muscle aches. Norovirus is highly infectious, spreads very easily and often results in outbreaks. The vomit of infected people contains many millions of virus particles; violent vomiting can produce aerosols (tiny droplets suspended in the air), which can contaminate surfaces. Norovirus disease is more common in Australia from late winter to early summer.

Norovirus is highly infectious because it only takes a small number of virus particles to make someone unwell. The virus is relatively resistant to disinfectant cleaning so, as well as cleaning, it is important to exclude people who are unwell from the education and care service to reduce the risk of large outbreaks. People who have had norovirus in the past can be reinfected.

How does it spread?

The disease spreads when viruses enter the body by the mouth. This can happen by:

- swallowing aerosols from violent vomiting
- touching contaminated surfaces and not washing your hands effectively
- swallowing food or drink that has been contaminated by aerosols from vomiting, or from the infected person's contaminated hands.

Incubation period

The incubation period can range from 10 to 50 hours, but is usually about 15–48 hours.

Infectious period

People are infectious while they have symptoms, and usually for 48 hours after symptoms have stopped. Some people are still infectious up to 10 days after symptoms have stopped.

Exclusion period

People with norovirus should be excluded for at least 48 hours after symptoms have stopped. This is especially important for educators and other staff who are involved with food preparation, food handling or assisting with feeding—large outbreaks of norovirus have occurred when food handlers have returned to preparing food while they are still infectious.

Responsibilities of educators and other staff

- Contact your local public health unit if two or more people are ill. Public health workers may be able to identify how the germ has spread through the education and care service, and help prevent further infection and a large-scale outbreak.
- Make sure staff and children always practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.
- Observe the exclusion period and stay at home until you are feeling well.

Responsibilities of parents

- Observe the exclusion period and keep your child at home until they are feeling well.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Observe the exclusion period.
- Ensure that staff and children always practise appropriate hand hygiene.
- Ensure that appropriate cleaning practices are being followed.
- Public health staff can advise about cleaning, particularly about the use of specific types of disinfectant and the strengths required.

Treatment

Drink plenty of fluids (e.g. water, dilute fruit juice or special oral rehydration solutions) to prevent dehydration. Because norovirus is caused by a virus, antibiotics will not help.

Pertussis (whooping cough)

Description

Pertussis (whooping cough) is a highly infectious disease caused by infection of the throat with the bacterium *Bordetella pertussis.* It affects infants, children and adults.

The disease usually starts like a cold, with a runny nose, tiredness and sometimes a mild fever. A cough then develops, usually in short bouts followed by a deep gasp (or 'whoop'). Not every person makes the whooping sound—this is more common in non-immunised children. The cough can last up to 3 months.

Young infants may stop breathing and sometimes turn blue. Adolescents and adults may just have a persistent cough. One in four children will also develop pneumonia; some have fits (convulsions); and some may develop inflammation of the brain (encephalitis). Pertussis is particularly serious in children under 12 months of age, and hospitalisation is often necessary.

How does it spread?

Pertussis spreads by airborne droplets. It can also spread indirectly by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, tissues, toys, eating utensils).

Incubation period

The incubation period is usually 9–10 days, but may range from 6 to 20 days.

Infectious period

A person is infectious from the beginning of the cold-like symptoms. They may remain infectious for up to 3 weeks if untreated, or until they have been treated with an appropriate antibiotic for 5 full days.

Exclusion period

Children with pertussis should be excluded for 21 days from the onset of symptoms, or until they have taken an appropriate antibiotic for at least 5 days.

Responsibilities of educators and other staff

- Contact your local public health unit for advice.
- Advise the parent to keep the child at home until they are feeling well and have taken an appropriate antibiotic for at least 5 days; or keep the child at home for 21 days from the onset of symptoms.
- Review vaccination records of all staff and children.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Make sure children are fully vaccinated against pertussis.
- Keep the child at home until they are feeling well and have taken an appropriate antibiotic for at least 5 days; or keep them at home for 21 days from the onset of symptoms. Avoid contact with other children during this time.
- Notify friends and contacts that the child has been diagnosed with pertussis, and advise them to contact their doctor.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Pertussis is a vaccine-preventable disease, and fully immunised communities offer the best protection against pertussis.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

Pertussis can be treated with antibiotics.

Pneumococcal disease

Description

Pneumococcal disease is caused by the bacterium *Streptococcus pneumoniae* ('the pneumococcus'). The bacterium can cause a range of illnesses, from mild ear or throat infections to severe pneumonia and meningitis. In Australia, disease tends to be more common during winter and spring. It is a leading cause of death in children under 5 years of age, especially Indigenous children, but seniors are also at risk of pneumococcal pneumonia. Pneumococcal disease is vaccine preventable.

How does it spread?

Pneumococcal disease spreads by airborne droplets (coughing and sneezing). It can also spread indirectly by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, tissues, toys, eating utensils).

Incubation period

The incubation period is not well determined; it may be as short as 1–3 days.

Infectious period

The person is infectious for as long as nose and mouth secretions contain pneumococcal bacteria. People are no longer infectious 48 hours after starting an appropriate antibiotic.

Exclusion period

People with pneumococcal disease should stay at home until they are feeling well.

Responsibilities of educators and other staff

- Advise the parent to keep the child at home until they are feeling well, and until at least 48 hours after they have started an appropriate antibiotic.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Make sure children are vaccinated against pneumococcus.
- Keep the child at home until they are feeling well, and until at least 48 hours after they have started an appropriate antibiotic.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Routine pneumococcal immunisation is given at 2, 4 and 6 months of age under the National Immunisation Program. Some children may receive additional doses, depending on where in Australia they live, and if they are in a high-risk group.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

Pneumococcal disease can be treated with antibiotics.

Rashes

Description

Rashes are common among children. Many rashes do not need urgent attention, especially if the child is happy and the rash does not appear to bother them.

Urgent medical attention is needed if a child has a rash of flat spots that do not whiten if you press on them. The spots can be very small or quite large, and red or purple in colour. These rashes are caused by burst blood vessels under the skin, and may indicate a serious infection, such as meningococcal disease.

Some rashes can be a sign of a severe allergic reaction (anaphylaxis). The parents of children who are known to have severe, life-threatening allergies should provide the education and care service with an anaphylaxis action plan for their child—educators and other staff should follow this plan in the event of an anaphylactic reaction.

Rashes can be caused by the following:

- Allergic reactions to a variety of things (e.g. food, medication, soap, clothing material, grass or any number of irritants). Examples of allergic reactions include hives or eczema. Watch the child for signs of more serious reactions, including swelling around the face, tightness in the throat, difficulty breathing or vomiting.
- Sensitivity to something—examples include nappy rash or dribble rash.
- Viruses—examples include varicella, human parvovirus and roseola.
- Bacteria—examples include impetigo (school sores).
- Fungi—examples include ringworm.
- Insect bites—can often appear as several red bumps.

How do they spread?

Spread depends on the cause of the rash. Most rashes are not infectious.

Incubation period

The incubation period depends on the cause of the rash.

Infectious period

The infectious period depends on the cause of the rash.

Exclusion period

The exclusion period depends on the cause of the rash. Even if the rash is not infectious, the child should stay at home if they are not feeling well.

Responsibilities of educators and other staff

- Advise the parent to keep the child at home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- If the child is unwell, take them to the doctor to establish the cause of the rash.
- The child should stay at home until they are feeling well, especially if the rash is infectious.
- Encourage hand hygiene and cough and sneeze etiquette at home.

Controlling the spread of infection

- Most rashes are not infectious and will not spread to other children. If several children in one room have similar rashes, try to establish if any triggering factors, such as chemicals used for cleaning, detergents or lotions, are the cause of the rash.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

Treatment depends on the cause of the rash; seek medical advice for treatment options, if necessary.

Roseola (exanthum subitum, sixth disease)

Description

Roseola is caused by a type of herpesvirus. It is a mild disease and is common in children aged 6 months to 3 years. It usually begins with the sudden onset of a high fever, which lasts 3–5 days and then falls, at which time a rash appears. The rash is usually fine, raised and red and can last from several hours to several days. The rash first appears on the trunk of the body.

How does it spread?

Roseola is spread by airborne droplets from the nose and throat, and direct contact with infected saliva. It also spreads indirectly by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, tissues, toys, eating utensils).

Incubation period

The incubation period is around 10 days.

Infectious period

Saliva, nasal discharge and other respiratory secretions are most infectious from a few days before the rash appears until several days after the rash appears.

Exclusion period

Exclusion is not necessary; however, the child should stay at home until they are feeling well.

Responsibilities of educators and other staff

- Advise the parent to keep the child at home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

There is no specific treatment for roseola.

Rotavirus

Description

Rotavirus is the most common cause of infectious diarrhoea in children around the world. Before the rotavirus vaccine was introduced in Australia in 2007, around 10 000 children were hospitalised each year with the disease. Symptoms include vomiting, fever and watery diarrhoea. The onset is usually sudden, and the illness mainly affects infants and young children up to 3 years of age.

It is possible to be infected with rotavirus several times. The first infection is usually the most severe, and repeated infections build up the person's natural immunity. For example, after the first infection, about 4 out of 10 children never become ill with rotavirus again. The rest are likely to experience less severe symptoms in later infections.

How does it spread?

Rotavirus infections spread when:

- infected people do not wash their hands effectively after going to the toilet; contaminated hands can contaminate food (which may be eaten by other people), or touch surfaces that may be touched by other people.
- people's hands become contaminated when changing the nappy of an infected infant and they do not wash them effectively.

Incubation period

The incubation period is usually about 48 hours, but may range from 24 hours to 72 hours.

Infectious period

The virus may be excreted in the faeces for 1–2 days before the illness, and for up to 8 days after the illness.

Exclusion period

People with rotavirus should be excluded until diarrhoea has stopped for at least 24 hours.

Responsibilities of educators and other staff

- People with rotavirus should stay home until they are feeling well and have not had any symptoms for at least 24 hours.
- Make sure staff and children always practise effective hand hygiene.
- Educators and other staff who handle food must not return to work until they have been symptom free for 48 hours.
- Ensure that appropriate cleaning practices are being followed in the education and care service.
- Contact your local public health unit if two or more people have rotavirus. Public health staff may be able to identify how the germ has spread through the education and care service, and help prevent further infection.

Responsibilities of parents

- Make sure children are vaccinated against rotavirus.
- Keep the child at home until they are feeling well and have not had any symptoms for at least 24 hours.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Children are immunised against rotavirus under the National Immunisation Program.
- Exclude people with infectious diarrhoea until the diarrhoea has stopped for at least 24 hours.
- Ensure that staff and children always practise appropriate hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

There is no specific treatment for rotavirus.

Rubella (German measles)

Description

Rubella is usually a mild viral illness. Symptoms begin like a cold, with a slight fever, sore throat and enlarged lymph glands in the neck. The characteristic rash appears 2–3 days later, beginning on the face and spreading to the trunk. The spots are pale pink at first and merge to form patches. The rash disappears after a few days.

Rubella can cause serious harm to unborn babies if pregnant women become infected. Infants born to mothers who had rubella during the first 20 weeks of pregnancy may have severe birth defects; the risk is highest in early pregnancy.

Rubella is now rare in Australia due to immunisation.

How does it spread?

Rubella spreads through airborne droplets, or direct contact with the nose or throat secretions of infected people.

Incubation period

The incubation period can be 14–21 days, but is usually 16–18 days.

Infectious period

The infectious period begins up to 7 days before the rash appears, and lasts until at least 4 days after the rash appears.

Exclusion period

People with rubella should be excluded for at least 4 days after the appearance of the rash and until the person feels well.

Responsibilities of educators and other staff

- Refer anyone with suspected rubella to a doctor.
- All staff members should be aware of their immune status; if they are not immune, they should be immunised.
- If pregnant staff members are concerned, refer them to their doctor. Immunisation during pregnancy is not recommended.
- Advise the parent to keep the child home for at least 4 days after the appearance of the rash and until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Make sure children are vaccinated against rubella.
- Keep the child at home for at least 4 days after the appearance of the rash and until they are feeling well.
- Advise any pregnant friends or family who may have been exposed to consult their doctor.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Children should be immunised twice against rubella: at 12 months of age and again at 4 years of age. The rubella vaccine is part of the MMR (measles–mumps–rubella) immunisation.
- Anyone who works with children should be immunised, or should be certain that they have had a blood test that demonstrates that they are immune to rubella.
- Observe the exclusion period.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

There is no specific treatment for rubella.

Salmonellosis

Description

Salmonellosis is a form of gastroenteritis caused by ***Salmonella*** bacteria. Symptoms include diarrhoea (sometimes with blood or mucus in the faeces), fever, abdominal pain, nausea and vomiting. The severity of symptoms depends on the number of bacteria swallowed, the person's age and their general health.

How does it spread?

Salmonellosis spreads when bacteria enter the body by the mouth. This can happen by:

- eating undercooked meat, especially chicken
- eating cooked food that has been contaminated with bacteria from raw food
- handling infected animals and not washing your hands afterwards.

Infection can also be spread from person to person when:

- people with *Salmonella* in their faeces do not wash their hands effectively after going to the toilet; contaminated hands can then contaminate food, which may be eaten by other people
- people's hands become contaminated when changing the nappy of an infected child and they do not wash them effectively.

Incubation period

The incubation period can be 6 hours to 3 days, but is usually about 12–36 hours.

Infectious period

Although the symptoms usually only last for a few days, the bacteria may be present in faeces for several weeks. People are infectious for as long as they have ***Salmonella*** in their faeces.

Exclusion period

People with salmonellosis who do not prepare or handle food at the education and care service should be excluded until diarrhoea has stopped for at least 24 hours. Educators and other staff who handle food must not return to work until they have been symptom-free for 48 hours.[40]

Responsibilities of educators and other staff

- Advise the parent to keep the child at home until they are feeling well and diarrhoea has stopped for at least 24 hours.
- Ensure that people with salmonellosis do not prepare or handle food until diarrhoea has stopped for at least 48 hours.
- Contact your local public health unit if two or more people have salmonellosis. Public health staff may be able to identify how the germ has spread through the education and care service, and help prevent further infection.
- Make sure staff and children always practise effective hand hygiene, especially after handling any animals.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

40 Queensland Health 2008, *Tool for the development of a food safety program for childcare facilities,* Queensland Government, Brisbane.

Responsibilities of parents

- Keep the child at home until they are feeling well and diarrhoea has stopped for at least 24 hours.
- Encourage effective hand hygiene at home.
- Make sure all family members practise effective hand hygiene after handling any animals.

Controlling the spread of infection

- Exclude a person with salmonellosis until the diarrhoea has stopped for at least 24 hours.
- Do not allow people with salmonellosis to prepare or handle food at the education and care service until diarrhoea has stopped for at least 48 hours.
- Keep cold food cold (below 5 °C) and hot food hot (above 60 °C) to discourage the growth of bacteria. Reheat food and hold at 70 °C for 2 minutes.
- Ensure that people practise effective hand hygiene, especially after handling any animals.
- Ensure that appropriate cleaning practices are being followed.

Treatment

Make sure a child with diarrhoea has plenty to drink. People usually recover from salmonellosis within a few days. Parents should consult a doctor about treatment. Antibiotics are not usually recommended for *Salmonella* infections, because they can cause the person to become a carrier of the bacteria and remain infectious.

Scabies and other mites causing skin disease

Description

Scabies is an infestation of the skin by small insects called mites. It is found worldwide but is endemic in remote northern and central Australian Indigenous communities.[41] Scabies affects people of all ages, sexes, races and standards of personal hygiene. Having scabies does not mean that people are unclean.

The tiny mites burrow under the skin, and itchy red bumps or blisters appear on skin folds around the fingers, toes, wrists, elbows, armpits, waistline, thighs, genitals, abdomen and lower buttocks. Thread-like 'tunnels' (about 1 cm long) may be present in the skin, but these often are very difficult to see due to scratches. Children younger than 2 years are likely to be infected on the head, neck, palms and soles of the feet, but they can have mites all over their body.[41] Scabies is a human infection. Mites that infest animals (e.g. those that cause mange in dogs or horses) may look similar, but they do not burrow into human skin, lay eggs on humans or cause itching in humans.

Scabies is diagnosed by examining the characteristic burrows or rash. The diagnosis is confirmed by scraping the skin and identifying the mites or eggs under a microscope.

People with an infestation of scabies usually have itchy skin and scratching may lead to secondary bacterial skin infection, in particular infection with Group A streptococci. The bacteria can enter the body (through the damaged skin) and cause Acute Rheumatic Fever (ARF) which can damage the heart resulting in Rheumatic Heart Disease (RHD). Australian Aboriginal and Torres Strait Islander communities have the highest rate of ARF and RHD in the world.[42]

How does it spread?

Scabies usually spreads by skin-to-skin contact with an infested person. Contact must be prolonged—a quick handshake or hug will usually not spread the disease. Mites can sometimes spread on underclothing or bedclothes that have been freshly contaminated by an infested person, but the mites can only live away from the human body for 2–3 days.

Incubation period

Itching begins 2–6 weeks after infestation in people who have not had scabies before, and within 1–4 days in people who have had scabies before.

Infectious period

People with scabies can pass on the mites until the day after they have started effective treatment. The mites can live for 2–3 days on the clothes, bed linen and other personal items of people who have scabies.

Exclusion period

People with scabies should be excluded until the day after they have started treatment.

41 Aronson, SS & Shope, TR (eds) 2005, *Managing infectious diseases in child care and schools: a quick reference guide*, American Academy of Pediatrics, Illinois.

42 Fischer, K & Kemp, DJ. 2009, Scabies and bacterial skin infections at a molecular level, Microbiology Australia.

Responsibilities of educators and other staff

- Advise the parent to keep the child at home until the day after they have started treatment.
- Make sure staff and children practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until the day after they have started treatment.
- Treat all close contacts of the child (i.e. people who have skin-to-skin contact with the child) and other people in the household at the same time.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

All close (skin-to-skin) contacts and other people in the same household should be treated at the same time, even if they have no itching or other symptoms. By the time scabies is diagnosed in one person, many other people may have been infested. If everyone is not treated at the same time, treatment is unlikely to be successful.

Contaminated underwear, bed linen and other clothing worn by infested people in the 48 hours before treatment starts should be washed in hot water and detergent. All items such as toys, cushions and pillows that cannot be washed or dry-cleaned should be placed out in the sun for 2 or 3 hours.

Treatment

Skin disease caused by mites can easily be confused with other skin diseases. Treatment should not begin until a doctor has confirmed the diagnosis after examining a skin scraping for mites. This is particularly important for infants, pregnant women or people who have other forms of skin disease.

Several treatments are available from chemists, and your doctor will tell you which one is best for the child and your family. All family members and other close contacts should be treated at the same time, even if they are not itching. Treatment can fail if not all contacts are treated at the same time.

Follow the manufacturer's instructions carefully before, during and after the treatments. Treatment should be repeated after 5–7 days.

Shigellosis

Description

Shigellosis is a severe intestinal infection caused by ***Shigella*** bacteria. Symptoms include diarrhoea (sometimes containing blood or mucus), fever, vomiting and cramps. Some infected people have no symptoms. *Shigella* spreads when hands, objects or food become contaminated with the faeces of infected people, and the bacteria are then taken in by mouth. Very small numbers of the bacteria are sufficient to cause an infection. Stringent control measures are needed.

How does it spread?

Shigellosis spreads when bacteria enter the body by the mouth. This can happen when:

- people with *Shigella* in their faeces do not wash their hands effectively after going to the toilet; contaminated hands can then contaminate food (which may be eaten by other people), or touch surfaces that may be touched by other people
- people do not wash their hands effectively after they change the nappy of an infected child.

Incubation period

The incubation period is usually 1–3 days, but can be up to 7 days.

Infectious period

People are infectious while they have symptoms and for a few days afterwards.

Exclusion period

People with shigellosis who do not prepare or handle food in the education and care service should be excluded until diarrhoea has stopped for at least 24 hours. Educators and other staff who prepare or handle food must not return to work until they have been symptom-free for 48 hours. Additional restrictions may be included in the education and care service's food safety plan, or state or territory requirements.

Responsibilities of educators and other staff

- Advise the parent to keep the child home until the child is feeling well and has not had diarrhoea for at least 24 hours.
- Ensure that educators and other staff who prepare or handle food in the education and care service do not return to work until they have been symptom-free for 48 hours.
- Contact your local public health unit if two or more people are ill. Public health staff may be able to identify how the germ has spread through the education and care service, and help prevent further infection.
- Make sure staff and children always practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well and have not had diarrhoea for at least 24 hours.
- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Exclude a person with shigellosis from the education and care service until the diarrhoea has stopped for at least 24 hours.
- Do not allow people with shigellosis to prepare or handle food at the education and care service until diarrhoea has stopped for at least 48 hours.
- Ensure that staff and children always practise appropriate hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

Children with shigellosis may become seriously ill and may need to go to hospital. Seek medical advice on treatment and fluid replacement. The doctor may prescribe antibiotics. Make sure the child has plenty to drink.

Sore throat (including scarlet fever)

Description

Sore throats can be caused by either viruses or bacteria. Viral sore throats are not usually serious and disappear in a few days.

Most bacterial sore throats are caused by *Streptococcus;* this illness is also known as 'strep throat'. The effects of strep throat can range from mild to severe, and can have serious complications, including the following:

- Scarlet fever—a rare complication of strep throat. The disease starts with a fever, sore throat, swollen tonsils and neck glands, and loss of appetite. In 12–48 hours, a fine red rash appears on the trunk and limbs that looks like sunburn and feels like sandpaper. The tongue also becomes very red (known as 'strawberry tongue'). The rash lasts for 2–5 days. During recovery, the skin may peel off the fingers and toes.
- Quinsy—an abscess (collection of pus) next to a tonsil.
- Rheumatic fever—a rare complication in which fever, joint pain and a skin rash develop soon after a sore throat. Later, inflammation of the heart (rheumatic carditis), or shaking and unsteadiness (Sydenham's chorea or St Vitus' dance) may occur.
- Inflammation and reduced function of the kidney—a rare complication.

How does it spread?

Viral and bacterial throat infections are spread by airborne droplets (coughing and sneezing). They can also spread indirectly by contact with surfaces that have been contaminated by infectious airborne droplets (e.g. hands, tissues, toys, eating utensils).

Incubation period

The incubation period is usually 1–3 days.

Infectious period

People with a sore throat caused by a virus are infectious for as long as they are coughing or sneezing. This may last several days.

People with a bacterial sore throat can be infectious for 2–3 weeks after becoming ill if they are not treated. If they take antibiotics, they are infectious until 24 hours after starting treatment.

Exclusion period

Children with sore throats should stay at home until they are feeling well. Children with sore throats caused by bacteria should stay at home until they are feeling well and have had antibiotic treatment for at least 24 hours.

Responsibilities of educators and other staff

- For viral sore throats: advise the parent to keep the child home until they are feeling well.
- For bacterial sore throats: advise the parent to keep the child home until they are feeling well or have received antibiotic treatment for at least 24 hours.
- Ensure that educators and other staff with sore throats stay at home until they are feeling well.
- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until they are feeling well or, if the sore throat is caused by bacteria, until they have been on antibiotic treatment for at least 24 hours.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- Observe the exclusion periods.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

A bacterial sore throat can be treated with antibiotics prescribed by a doctor. Antibiotics are not appropriate for viral sore throats.

Staphylococcus aureus (staph) infections

Description

Staphylococcus aureus (commonly known as 'staph') is a bacterium that is commonly carried on the skin and in the nose and throat of healthy people. It generally causes no problems or illness, but, in certain circumstances, it can cause a variety of infections. If the bacteria enter the body through broken skin, they can cause skin infections such as impetigo (school sores), boils, abscesses and sometimes bloodstream infections. ***Staphylococcus aureus*** can also cause food poisoning and pneumonia.

Staphylococcus aureus is sometimes mentioned in the media when it causes infections in hospitals or in the community. These situations are caused by a type of staph known as methicillin-resistant *Staphylococcus aureus* (MRSA, also known as 'golden staph'). MRSA is not more dangerous or more infectious than other types of staph, but it is more difficult to treat, because it is resistant to commonly used antibiotics. MRSA causes the same kinds of infections as other types of staph.

How does it spread?

Staph skin infections are spread by direct contact with infected areas of the skin, by the hands of people who have been touching their sores, and by contaminated clothing and other items. Staph food poisoning usually spreads when people who have not washed their hands effectively contaminate food that other people eat.

Incubation period

Some people have staph on their skin, or in their nose and throat, without ever developing an illness. For those who develop disease, this can happen days to years after exposure.

Infectious period

A person can be infectious for as long as they have the bacteria on their skin or in their nose or throat. A person does not have to have symptoms of disease to be able to pass the bacteria on.

Exclusion period

Exclusion is not necessary for any type of staphylococcal infection if the person can maintain hygiene practices to minimise the risk of transmission.

If the person is unable to comply with these practices, they should be excluded until the sores are dry. Sores should be covered by a waterproof dressing where possible.

If the sores are weeping, exclude the child until they have received antibiotic treatment for at least 24 hours. If antibiotics are not used, the child needs to be excluded until the sores are dry and no longer weeping.

Responsibilities of educators and other staff

- Ensure that sores are covered with a waterproof dressing.
- Put all dressings in a lidded bin as soon as they are removed.
- Make sure that effective hand washing and cleaning procedures are being followed in the education and care service.

Responsibilities of parents

- Cover sores with a waterproof dressing, where possible.
- If the child is unable to comply with good hygiene practices (i.e. not touch sores, wash hands thoroughly), they should be kept at home until the sores have dried completely.
- Encourage effective hand hygiene.

Controlling the spread of infection

- Ensure that children and staff practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed.
- Cover sores on exposed surfaces with a waterproof dressing.
- Put all dressings in a lidded bin as soon as they are removed.

Treatment

Staph infections can be treated with antibiotics. The type of antibiotic depends on the type of staph (i.e. whether or not it is MRSA) and the severity of the infection. Mild infections may be treated with an antibiotic cream; more severe infections may require oral antibiotics.

Toxoplasmosis

Description

Toxoplasmosis is an infection caused by a protozoan parasite called *Toxoplasma gondii*. The parasite is found in all parts of the world, and infection is very common. In Australia, the main host of the parasite is the domestic cat. Cats only pass on toxoplasmosis if they have recently had the infection.

Toxoplasmosis is rarely a serious illness in healthy children or adults, but it can damage an unborn baby if a pregnant woman becomes infected. It can cause serious illness when a person's immune system is compromised, such as in people with human immunodeficiency virus (HIV) or cancer.

How does it spread?

Toxoplasmosis can spread by contact with the faeces of infected cats, or handling or eating raw or undercooked meat. If a mother becomes infected during pregnancy, and she has not had the infection before becoming pregnant, the parasite can pass through the placenta to the developing baby.

Toxoplasmosis does not spread from person to person, other than during pregnancy.

Incubation period

The length of the incubation period is unclear, but probably ranges from 5 to 23 days.

Infectious period

Toxoplasmosis does not spread from person to person. The parasites in cat faeces become infectious 1–5 days after being passed in the cat's faeces. Meat that is infected with *Toxoplasma* is not safe until it is cooked properly—freezing meat does not necessarily make it safe.

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Make sure staff and children always practise effective hand hygiene.
- Ensure that appropriate cleaning practices are followed in the education and care service.

Responsibilities of parents

- Encourage effective hand hygiene at home.

Controlling the spread of infection

- Ensure that adults and children perform effective hand hygiene before meals and after handling raw meat.
- Wash knives and other kitchen utensils thoroughly after they have been in contact with raw meat.
- Cook meat adequately.
- Wash all raw fruit and vegetables carefully before eating.
- Dispose of cat faeces and litter daily, because it can become infectious after 24 hours. Wear gloves when handling cat faeces or litter trays. Disinfect litter trays daily by scalding with boiling water. Feed cats dry, canned or boiled food. Discourage them from hunting and scavenging.
- Pregnant women without antibodies to *Toxoplasma* should avoid cleaning litter trays and avoid contact with cats of unknown feeding history. Pregnant women should not eat raw or undercooked meat.
- Cover children's sandpits when not in use to exclude animal faeces.

Treatment

There is no specific treatment for toxoplasmosis, unless the person is pregnant. Pregnant women require specialist medical treatment.

Tuberculosis (TB)

Description

Tuberculosis (TB) is a bacterial infection that can affect almost any part of the body, but is most common in the lungs. It is rare in Australia, but very common in other areas of the world with crowded cities, poor living conditions and many people with human immunodeficiency virus (HIV).

The symptoms of TB are not always easy to identify and may persist for weeks, or even months, before TB is suspected. Symptoms may include fever, tiredness, sweating (especially at night), weight loss and a cough that lasts longer than 3 weeks and does not go away with normal treatment. The cough may produce phlegm and sometimes blood. A chest X-ray can help diagnosis.

TB infection and TB disease are different. People with TB disease are ill because of the bacteria that are active in their body. They usually have one or more symptoms of TB. These people are infectious and can pass TB to others.

People with TB infection (but not TB disease) have the bacteria that cause TB in their body, but they are not ill because the bacteria are dormant in the body. People who are infected with TB but do not have TB disease cannot spread the infection to others. Most people with TB infection do not become ill with the disease. However, the TB bacteria can lie dormant within their body for years.

How does it spread?

TB spreads by droplets in the air. People who are infected with TB but do not have TB disease are not infectious. People with TB disease have one or more symptoms—these people can spread the disease.

Incubation period

The incubation period is 2–10 weeks.

Infectious period

Young children with TB infection rarely spread the disease. Adults who develop active TB are most infectious when they are coughing and have not received treatment, or are in the first few weeks of treatment.

Exclusion period

People with TB should be excluded until they have a written clearance from their treating medical practitioner.

Responsibilities of educators and other staff

- Make sure staff and children practise cough and sneeze etiquette and hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Keep the child at home until you have written clearance from their treating medical practitioner.
- Encourage cough and sneeze etiquette and hand hygiene at home.

Controlling the spread of infection

- TB can be prevented with a vaccine called Bacille Calmette-Guérin (BCG). This vaccine is recommended for:[43]
  - Aboriginal and Torres Strait Islander infants living in regions of high incidence of TB
  - children under 5 years of age who will be travelling to countries that have a high incidence of TB, if the child will be in that country for more than 3 months.
- People with suspected TB should be diagnosed and treated. Reducing the number of people in the community with active TB will reduce the chance of exposure for everyone.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise cough and sneeze etiquette and effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

People with TB require specialist medical treatment.

43 National Health and Medical Research Council 2008, *The Australian immunisation handbook,* 9th edn, NHMRC, Canberra.

Varicella (chickenpox)

Description

Varicella is a highly infectious disease caused by the virus known as varicella or varicella zoster. The varicella zoster virus causes two distinct diseases: varicella (the initial infection) and herpes zoster (shingles, caused by the virus reactivating in the body).

The disease starts with cold-like symptoms, such as a runny nose, mild fever, cough and fatigue, and these are followed by a characteristic spotty rash. The rash usually starts on the trunk of the body and quickly spreads all over the body. It can develop inside the ears, nose and mouth; on the eyelids; and within the vagina. It continues to spread for 3 or 4 days and is usually very itchy.

The rash begins as small red spots that quickly turn into fluid-filled blisters. After a day or so, the fluid turns from clear and yellow to cloudy—these spots can easily burst and form a scab. Some blisters heal faster than others, so a person may have several stages of the rash at once.

People have different experiences with varicella. Some people have only a few spots; others are covered in spots. Varicella is usually a mild disease in children, but complications can occur in around 1% of cases.[44] The disease is more severe in adults and in people of any age who have impaired immunity.

How does it spread?

Varicella is spread by airborne droplets or contact with the fluid from the blisters. One infection gives long-lasting immunity—people rarely get varicella twice. People who have had varicella can get shingles (herpes zoster) later in life. Shingles is a reactivation of the varicella virus—direct contact with the shingles rash can cause varicella in people who have not already had it.

Incubation period

The average incubation period for varicella is 14–16 days, but may range from 10 to 21 days.

Infectious period

People are infectious from 2 days before the rash appears (i.e. during the coughing, runny nose stage) until all blisters have formed scales or crusts and dried.

Exclusion period

Children with varicella should be excluded until all blisters have dried. This is usually at least 5 days after the rash first appeared in non-immunised children, and less in immunised children.[45]

Responsibilities of educators and other staff

- Advise the parent to keep the child home until all blisters have dried.
- If an educator or other staff member has varicella, they should stay home until all blisters have dried. Make sure staff and children always practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.
- Advise pregnant women to avoid contact with people who have varicella. Vaccination for varicella during pregnancy is not recommended, and pregnancy should be avoided for 1 month following varicella vaccination. If pregnant staff members are concerned, refer them to their doctor.

44 National Health and Medical Research Council 2008, *The Australian immunisation handbook,* 9th edn, NHMRC, Canberra.

45 'Chickenpox', in DL Heymann (ed.) 2008, *Control of communicable diseases manual,* 19th edn, American Public Health Association, Washington, DC.

Responsibilities of parents

- Ensure that children have been vaccinated against chickenpox.
- Keep the child at home until all blisters have dried.
- Encourage effective hand hygiene at home.
- Avoid contact between your child and other children or frail and elderly people until the child is feeling well.

Controlling the spread of infection

- Varicella is a vaccine-preventable disease. Immunisation is recommended for all educators and other staff[46] and is part of the National Immunisation Program Schedule for all children at 18 months of age.
- Vaccination after exposure can usually prevent a person getting symptoms of varicella if the vaccine is given within 3 days of exposure, and may prevent symptoms when given up to 5 days after exposure.
- Teach children about cough and sneeze etiquette.
  - Cough or sneeze into your inner elbow rather than your hand.
  - If you used a tissue to cover your nose or mouth when sneezing or coughing, put the tissue in the bin straight away.
  - Clean your hands.
- Ensure that staff practise appropriate cough and sneeze etiquette and hand hygiene.
- Avoid contact between the person who is ill and children, frail and elderly people, and pregnant women until the person is feeling well.

Treatment

There is no specific treatment for varicella, but calamine lotion or antihistamines (e.g. phenergan) may soothe the itch. A medicine that contains paracetamol may help lower the person's temperature or relieve discomfort. Do not give aspirin to any child less than 12 years old.

46 National Health and Medical Research Council 2008, *The Australian immunisation handbook,* 9th edn, NHMRC, Canberra.

Warts

Description

Warts are generally harmless skin growths. They are very common, affecting around one in 10 children.[47]

Warts are thickenings of the skin and are usually round or oval shaped. They are clearly different from the surrounding skin. Warts are caused by a virus infection of the skin (Human papillomavirus). The virus enters the skin through scratches or other damage to the skin. Occasionally warts come out in a crop. There are many types of warts and warts can appear in many places on the body.

How are they spread?

Warts are usually spread by direct contact with someone who has warts. Picking or scratching may lead to spread of warts on the same person. Plantar warts can come from walking with bare feet on wet floors such as in swimming pool change rooms.

Incubation period

2–3 months but ranges from 1–20 months. Once infected with the virus it may take up to a year or more for the wart to become visible.[47]

Infectious period

Unknown, but if untreated probably as long as warts can be seen.

Exclusion period

Nil

Responsibilities of educators and other staff

Make sure staff and children practice effective hand hygiene.

Responsibilities of parents

Advise children not to pick or scratch at warts. Practice effective hand hygiene at home.

Controlling the spread of infection

Avoid direct contact with warts.

Make sure that effective hand washing and cleaning procedures are being practised.

Treatment

It is not essential to treat warts, especially if they are not causing any problems.[47] Warts will usually go away naturally, but this may take a long time. If treatment is necessary the following may be used:

- Liquid nitrogen
- Chemical paste applications.

47 The Royal Children's Hospital Melbourne – Kids Health Info: Warts 2010, viewed 20 March 2013 http://www.rch.org.au/kidsinfo/fact_sheets/Warts/

Worms: hydatid disease

Description

Hydatid disease is caused by a tapeworm called ***Echinococcus granulosus.*** In Australia, most infections are passed to humans from infected dogs and sheep, although other animals, such as goats, dingoes, horses, kangaroos and foxes, can also spread the infection.

In humans, tapeworm cysts grow in various parts of the body, and any organ can be affected. Sometimes these cysts cause no symptoms at all and are found during routine chest X-rays. However, if the cysts grow in vital organs (such as the liver, lungs or brain), they may cause disease. Hydatid disease is more common in rural communities.

How does it spread?

The disease spreads when tapeworm eggs in animal faeces enter the body by the mouth. This may happen when a person handles dogs or objects soiled with dog faeces, then touches their mouth, or if they swallow contaminated food or water. Hydatid disease does not spread directly from person to person.

Incubation period

The incubation period can vary from months to years, depending on the number and location of cysts and how rapidly they grow.

Infectious period

Dogs begin to pass eggs of the tapeworm in their faeces around 7 weeks after becoming infected. Most infections in dogs resolve within 6 months, but some adult tapeworms may survive as long as 2–3 years. Dogs can become infected repeatedly.

Hydatid disease is not transmitted directly from person to person.

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Ensure routine de-worming of dogs that frequent the education and care service.
- Make sure staff and children always practise effective hand hygiene, including after touching animals and before preparing or eating food.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Encourage effective hand hygiene at home, including after touching animals and before preparing or eating food.
- Ensure routine de-worming of pet dogs, and do not let dogs lick people on the face. Dispose of dog faeces regularly, wearing gloves. Do not feed dogs raw offal.

Controlling the spread of infection

- Make sure staff and children always practise effective hand hygiene, including after touching animals and before preparing or eating food.
- Ensure routine de-worming of pet dogs, and do not let dogs lick people on the face. Dispose of dog faeces regularly, wearing gloves. Do not feed dogs raw offal.

Treatment

Treatment may include surgery to remove the cysts, often in combination with antiparasitic drug therapy.

Worms: threadworm

Description

Many worms worldwide can infect humans. In Australia, threadworm (***Enterobius vermicularis***, also called pinworm) is the most common worm in children; other worms include roundworms, hookworms and tapeworms. Threadworms are white, thread-like worms that are 2–13 mm long. They can infect people of any age. Domestic pets are not a source of infection.

People get worms by swallowing worm eggs. The eggs hatch, and the worms live in the intestines. When a female worm is ready to lay her eggs, she comes out of the infected person's anus and lays her eggs on the skin around the opening, causing itching.

How do they spread?

Worm eggs are picked up and transferred to the mouth when infected people scratch their anus and then touch their mouth, or do not wash their hands after going to the toilet. The eggs can also spread to bedding, clothes and other surfaces, where other people can pick them up. Eggs can survive on surfaces for up to 2 weeks.

Incubation period

The incubation period is around 4–5 weeks.

Infectious period

People are infectious for as long as they are infested with worms. The infestation will continue until the person is treated. People do not become immune to threadworms.

Exclusion period

Exclusion is not necessary.

Responsibilities of educators and other staff

- Make sure staff and children practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed in the education and care service.

Responsibilities of parents

- Encourage effective hand hygiene at home.
- Keep children's fingernails short.
- Change bed linen and underwear daily for several days after treatment. Washing clothes and bed linen in hot water will kill threadworm eggs.

Controlling the spread of infection

- Ensure that staff practise effective hand hygiene.
- Ensure that appropriate cleaning practices are being followed.

Treatment

Worm treatments are available over the counter from your chemist. Treatment usually involves a single dose for the infected person and each family member.

PART 6
Glossary and resources

Summary

This section contains useful resources for education and care services, including:

- a glossary of terms used in this document
- contact information for various organisations, including public health units
- a list of useful websites
- sample forms that education and care services may wish to adapt and use.

6.1 Glossary

airborne droplets	Small droplets, often invisible to the naked eye, that are propelled from a person's mouth or nose when they cough, sneeze, talk or spit. These droplets can contain germs from the person's nose and throat; if another person breathes in the droplets, they can become infected. The droplets can also contaminate surfaces. Many diseases are spread in this way.
alcohol-based hand rub	A type of hand hygiene product that contains alcohol and can kill germs without using soap and water. Also known as antiseptic hand rubs, gels, waterless hand cleaners or hand sanitisers.
antibiotic	A substance that kills bacteria or slows their growth. Antibiotics may be prescribed to treat a bacterial infection; they are not effective against viruses.
antibodies	Proteins that protect the body against invading germs by helping the immune system to kill them. The body makes antibodies in response to an infection or a vaccine. Some antibodies can be injected to give immediate protection against diseases such as hepatitis A and B, measles and tetanus, but this protection is temporary.
bacterium	A type of germ that is not visible to the naked eye and consists of a single cell. Some bacteria can be beneficial to humans, some can cause disease and some can do both, depending on the circumstance.
chain of infection	The steps involved in the spread of germs: 1. The germ has a source. 2. The germ spreads from the source. 3. The germ infects another person. All three steps need to occur for germs to spread from one person to another.
chemically compatible	Refers to hand hygiene and hand care products that work effectively when used together and reduce the risk of skin irritation and dermatitis. Ordering products from a single manufacturer can help to ensure chemical compatibility.
complication	Another disease or condition that develops, either directly or indirectly, as a result of an infection. For example, pneumonia is a common complication of measles; damage to an unborn baby is a complication of cytomegalovirus infection during pregnancy.
contact	A person who has had the opportunity to catch a disease from someone while that person was infectious. The exact definition of a contact varies depending on how the disease spreads (e.g. airborne droplets, faecal–oral route, blood).
contagious	Able to be passed from one person to another.
cough and sneeze etiquette	Covering your mouth and nose when you sneeze or cough to reduce the spread of germs in airborne droplets. *See* airborne droplets
dermatitis	Any condition of the skin that involves inflammation (redness and swelling). Eczema is an example of dermatitis.

dermatitis, allergic contact	A type of dermatitis that occurs when a person has an allergic reaction to something they have touched. This is rare, but can happen when, for example, a person is allergic to one or more ingredients in a hand hygiene product.
dermatitis, irritant contact	A type of dermatitis that occurs when a person's skin is irritated by something they have touched. This often occurs due to frequent and repeated use of hand hygiene products.
diarrhoea	An increase in the frequency, runniness or volume of faeces.
disease	Any condition that affects the body's normal functions. Diseases can be infectious or non-infectious. *See* infectious disease
disinfectant	A chemical agent that kills germs outside the body (e.g. on surfaces).
eczema	A type of allergy that causes dry, itchy and sensitive skin.
education and care service	Any service that provides, or is intended to provide, education and care on a regular basis for children under 13 years of age. This includes day care, long day care, family day care, preschool and outside-school-hours care. It does not include full-time schools, special classes or services (e.g. sport classes, dance classes, disability services, medical services), or personal arrangements.
educator	A person at the education and care service who works directly with children. *See* staff
emollient	A substance that soothes or softens the skin.
environmental cleaning	Removing dirt and germs from surfaces. The best way to do this is by rubbing or scrubbing the surface with warm water and detergent, followed by rinsing and drying.
fungus	A group of germs that includes yeasts, moulds and mushrooms. Some fungi can cause disease.
germ	A microorganism (e.g. bacteria, viruses, fungi, protozoa). Not all germs cause disease.
hand hygiene	Keeping your hands clean. This can be done using soap and water, or an alcohol-based hand rub, and is one of the most effective ways to reduce the spread of germs.
hand rub, alcohol-based	*See* alcohol-based hand rub
herd immunity	The way that immunised people can protect non-immunised people in a community, because the more people who are immunised, the less chance a germ has to spread. *See* immune and immunisation
immune	A person becomes immune as a result of immunisation against, or previous infection with, a particular germ. Immunity means that the next time the person is exposed to the germ, their body can quickly recognise and destroy the germ before the person has any symptoms. A person is immune to a disease if they have antibodies to the germ in their blood; this can be determined by a laboratory test.
immunisation	The process of making a person immune to a disease by giving them a vaccine. *See* immune and vaccine
incubation period	The time between a germ entering a person's body and the onset of the disease. Incubation periods can range from a few hours to several years, depending on the disease.

infection	The entry and multiplication of a germ in a human or animal. Infections may or may not cause disease—a person can be infected with a germ without its causing any damage to their body or any symptoms. *See* disease
infectious	Able to spread from one living thing to another.
infectious disease	Disease caused by a germ that can spread from one living thing to another. *See* disease
infectious period	The length of time a person who is infectious can spread the infection to others.
medically vaccinated	When a person has received a vaccine that has been scientifically proven to be effective in preventing disease. S*ee* non-medically vaccinated and vaccine
meningitis	A serious illness that involves inflammation of the membrane that surrounds the brain and spinal cord.
mucous membrane	The thin lining of body passages and cavities such as the mouth, respiratory tract, genitourinary tract and eye. The glands in these linings produce mucus.
non-medically vaccinated	When a person has received a treatment that is said to act as a vaccine but has not been scientifically proven to be effective (e.g. homeopathic or naturopathic vaccination). *See* medically vaccinated and vaccine
notifiable disease	A disease that must be reported to government authorities. By collecting information about diseases, the government can monitor where a disease occurs and how many people have it—this can help with planning prevention strategies and provide early warning of outbreaks.
outbreak	A sudden increase in the number of people who have a particular disease.
parent	The person who has responsibility for the child—this could be a biological parent or legal guardian.
protozoan	A type of microscopic living thing that consists of one cell. They are often larger than bacteria and reproduce differently. Some protozoa, such as Giardia and Toxoplasma, are parasites that can cause disease.
public health unit	Part of a state or territory health department that investigates and provides advice on infectious diseases, including outbreak management, immunisation and other public health matters. Your local public health unit may be in your local area or in your capital city.
soiled	Dirty or unclean.
staff	Any person employed, appointed or engaged to work in, or as part of, an education and care service, whether as a family day care coordinator, an educator or otherwise. The term 'staff' includes the cook, administrator, gardener, housekeeper or cleaner. *See* educator
vaccine	A substance that contains live or dead germs, or parts or products of germs, that is given to a person to make their immune system respond. Once a person has received a vaccine, they are considered to be immunised. *See* immune, immunisation, medically vaccinated and non-medically vaccinated
virus	A type of germ, much smaller than bacteria, which can only multiply inside living cells. Some viruses can cause disease.

6.2 Useful contacts

6.2.1 Public health units

State or territory	Authority	Phone	Web
Australian Capital Territory	ACT Health Directorate—Health Protection Service—Communicable Disease Control	02 6205 2155	www.health.act.gov.au/health-services/population-health/health-protection-service/communicable-diseases/
New South Wales	NSW Health—Public Health Units	1300 066 055 (general switchboard)	www.health.nsw.gov.au/publichealth/Infectious/phus.asp
Northern Territory	Northern Territory Department of Health—Centre for Disease Control	08 8922 8044 (Darwin)	www.health.nt.gov.au/Centre_for_Disease_Control/index.aspx
Queensland	Queensland Health—Public Health	07 3234 0111 (general switchboard)	www.health.qld.gov.au/cdcg/contacts.asp
South Australia	SA Health—Communicable Disease Control Branch	1300 232 272	www.dh.sa.gov.au/pehs/CDCB-contact.htm
Tasmania	Tasmanian Department of Health and Human Services—Public and Environmental Health Service	1800 671 738	http://www.dhhs.tas.gov.au/service_information/services_files/infectious_diseases_communicable_diseases
Victoria	Victorian Department of Health—Infectious Diseases Epidemiology and Surveillance (IDEAS)	1300 651 160	www.health.vic.gov.au/ideas
Western Australia	Western Australian Department of Health—Communicable Disease Control Directorate	08 9388 4999	http://www.health.wa.gov.au/services/detail.cfm?Unit_ID=450

6.2.2 Work health and safety authorities

State or territory	Authority	Phone	Web
Australian Capital Territory	WorkSafe ACT	02 6207 3000	www.worksafety.act.gov.au
New South Wales	Workcover Authority of NSW	13 10 50	www.workcover.nsw.gov.au
Northern Territory	NT WorkSafe	1800 019 115	www.worksafe.nt.gov.au
Queensland	Workplace Health and Safety Queensland	1300 369 915	www.deir.qld.gov.au/workplace
South Australia	WorkCover SA	13 18 55	www.workcover.com
	SafeWork SA	1300 365 255	www.safework.sa.gov.au
Tasmania	WorkCover Tasmania	1300 776 572	www.workcover.tas.gov.au
Victoria	WorkSafe Victoria	1800 136 089	www.worksafe.vic.gov.au
Western Australia	WorkSafe Western Australia	1300 307 877	www.safetyline.wa.gov.au

6.2.3 Food safety authorities

State or territory	Authority	Phone	Web
Australian Capital Territory	ACT Health Protection Service	02 6205 1700	www.health.act.gov.au/health-services/population-health/health-protection-service/
New South Wales	NSW Food Authority	1300 552 406	www.foodauthority.nsw.gov.au
Northern Territory	Northern Territory Department of Health	1800 095 646	www.health.nt.gov.au/Environmental_Health/Food_Safety/index.aspx
Queensland	Queensland Health—Environmental Health Branch (Food Safety Policy and Regulation Unit)	07 3234 0111	www.health.qld.gov.au/foodsafety
South Australia	South Australian Department of Health—Food Policy and Programs Branch	08 8226 7100	www.dh.sa.gov.au/pehs/food-index.htm
Tasmania	Tasmanian Department of Health and Human Services—Food Unit	1800 671 738	www.dhhs.tas.gov.au/service_information/services_files/food_safety
Victoria	Victorian Department of Health—Food Safety	1300 364 352	www.health.vic.gov.au/foodsafety
Western Australia	Western Australian Department of Health—Food Unit	08 9388 4999	www.public.health.wa.gov.au/1/50/2/food.pm

6.3 Useful websites

Education and care

www.acecqa.gov.au

Australian Children's Education and Care Quality Authority—includes a wide range of resources for education and care services.

Food safety

www.foodstandards.gov.au

Food Standards Australia New Zealand—resources on food safety, labelling and nutrition, including free online videos.

Immunisation

www.immunise.health.gov.au

Australian Government website for immunisation—check this site for the most up-to-date information on vaccinations and immunisation schedules.

Infection control

www.nhmrc.gov.au/guidelines/publications/cd33

Australian guidelines for the prevention and control of infection in healthcare—these guidelines provide the evidence-based foundation for *Staying healthy*. For a full list of references, please see Appendix 2.

6.4 Forms

This section contains example forms that education and care services may wish to adapt and use. Services may wish to add a privacy statement or other information to these forms.

Record of illness at the education and care service

Date	Name	Age	Symptoms	Room or group	Time of onset	Comments

Report form for parent or doctor

Education and care service: .....

Address: .....

Contact person: .....

Phone: .....

Dear Parent/Doctor,

Re: *(child's name)*.....Date of birth: ...../...../.....

Child has: (include information such as time observed, number of times, severity)

- vomiting
- diarrhoea
- rash (description of rash and where rash started)
- other.

There has/has not been recent similar illness in other children in the service.

The diagnosis in the other children was:

The public health unit is involved/is not involved.

The child appears to have a fever/does not have a fever.

The child has eaten .....

The child has drunk .....

The child last passed urine at..... (time).

Parent contacted by: ..... at: ..... (time).

Signed: .....

Date: ...../...../..... Time: .....

Medication permission form

In the interest of children's safety and wellbeing, the education and care service will only administer medication if it is in its original container with the dispensing label attached. The label should list the child as the prescribed person, the strength of drug and the frequency it is to be given. This applies to all medications, regardless of whether they are non-prescription medications (such as teething gels, nappy creams, cough medicines) or prescription medications (such as antibiotics).

Child's full name: .....

Medical practitioner/pharmacist: .....

Name of medication: .....

Date prescribed: .....

Expiry date of medication: .....

Reason for medication: .....

Storage requirements: .....

Time and date of last dose given: .....

I request that the above medication be given in accordance with the instructions below. *Please enter the date, dosage and time to be given in the table, and list any detailed instructions in the space below, including route (e.g. oral, inhaler), dose (e.g. thin layer, number of drops/mL/tablets), before or after food.*

Instructions:

Parent's full name: .....

Date:...../...../.....

Signature: .....

Date	Dosage	Time to be given	Time actually given	Signature of staff administering medication	Signature of staff cross-checking medication	Comments

Staff immunisation record

Name:.....

Date of birth: ...../...../.....

Address:.....

.....

.....

The National Health and Medical Research Council (NHMRC) recommends that all educators and other staff are immunised against:

pertussis—this is especially important for educators and other staff caring for the youngest children who are not fully vaccinated

measles–mumps–rubella (MMR) for educators and other staff born during or since 1966 who do not have vaccination records of two doses of MMR, or do not have antibodies against rubella

varicella for educators and other staff who have not previously had varicella

hepatitis A, because young children may not show any symptoms, but can still be infectious.

All staff should also consider having yearly **influenza** vaccinations. Influenza is very infectious and can spread through the air by coughing and sneezing, as well as by hands, cups and other objects that have been in contact with an infected person's mouth or nose.

Additional vaccinations are recommended for special categories of educators and other staff:

- Hepatitis B is recommended for educators and other staff who care for children with intellectual disabilities. Although the risk is low, seek advice about hepatitis B immunisation if the children are not immunised. Immunisation of the children should be encouraged.
- Japanese encephalitis is recommended for educators and other staff who work in the outer Torres Strait Islands for 1 month or more during the wet season.

Complete the following table with your immunisation status for these diseases, indicating whether you had the disease or whether you were vaccinated, and the date of disease or vaccination.

Disease/vaccine	Confirmed infection	Had vaccine	Date
Pertussis (whooping cough)			
Measles–mumps–rubella (MMR)			
Varicella (chickenpox)			
Hepatitis A			
Hepatitis B			
Japanese encephalitis			
Influenza			

Appendix 1 – Process report

1. Background

Staying healthy – Preventing infectious diseases in early childhood education and care services, 5th edition, reflects the revision of *Staying healthy in child care- Preventing infectious diseases in child care*, 4th edition (2006).

Following the release of the *Australian guidelines for the prevention and control of infection in healthcare* (2010), the 4th edition of *Staying healthy* was revised to align its content with the evidence base and advice on infection prevention and control in the guidelines. The 5th edition of *Staying healthy* has been restructured to improve usability and aid decision making by educators and other staff in all education and care services.

2. Appointment of technical writers

Biotext Pty Ltd was selected through a Request for Quote process from the NHMRC Technical Writers Panel. Dr Julie Irish of Biotext undertook the work on the revision of *Staying healthy*, with editorial assistance from other Biotext staff. Dr Irish also participated in an early consultation with stakeholders to gain an understanding of the scope and issues to be addressed in the 5th edition.

3. Scope of *Staying healthy,* 5th edition

The scope of *Staying healthy* has been refocused to provide advice on infection prevention and control principles. The evidence base for this advice is provided by the *Australian guidelines for the prevention and control of infection in healthcare* (2010). The NHMRC acknowledges the importance of providing holistic advice for child health and wellbeing; however, advice about nutrition, physical activity and chronic illness is outside the scope of *Staying healthy.* Where more advice is required by educators and other staff, such as regulations on food preparation and storage, a link has been provided to the relevant Australian regulatory agency.

3.1 Preliminary scoping

3.1.1 Queensland Health

Dr Andrew Langley, Public Health Physician, and Ms Debbie Neucom, Public Health Nurse (both from the Sunshine Coast Public Health Unit, Central Regional Services, Queensland Health), were members of the committee that developed the 4th edition of *Staying healthy.* Dr Andrew Langley and Ms Neucom reviewed the 4th edition for currency and prepared extensive material as part of the initial scoping covering areas for updating and identifying new sections that could be included in the 5th edition such as:

- greater consideration of the family day care environment
- inclusion of the use of alcohol-based hand rub
- management of body substance spills to align with the infection control guidelines
- strengthening the importance of cough etiquette and respiratory hygiene
- inclusion of fact sheets on mosquito-borne diseases and *Staphylococcus aureus* infections.

3.1.2 Discussion paper

A discussion paper titled *Improving 'Staying healthy in childcare'* proposed an approach to the revision of *Staying healthy* and guided discussion at the stakeholder forum.

3.1.3 Stakeholder forum

A stakeholder forum was held in April 2011. Stakeholders who attended the forum represented:

- Communicable Diseases Network Australia
- Australian Government Department of Education, Employment and Workplace Relations (DEEWR)
- DEEWR National Quality Framework Reference Group (ACT and Victorian representatives)
- Early Childhood Australia
- Family Day Care Australia
- National Childcare Accreditation Council
- Office of Early Childhood Education and Care
- South Australia Communicable Disease Control
- Sunshine Coast Public Health Unit.

The following key areas were identified for the 5th edition:

1. Provide more pictorial advice for educators and other staff to improve the uptake of guidance on key infection prevention and control principles.
2. Include strategies for educators and other staff, and education and care service directors, in managing sick children who become unwell or who present as unwell, in line with the exclusion periods.
3. Include strategies to encourage educators and other staff to be immunised and adhere to exclusion periods when they are unwell.
4. Modify terminology to be consistent with new DEEWR National Quality Standards that focus on improving quality of early childhood education and care.

4. Evidence base

The *Australian guidelines for the prevention and control of infection in healthcare* (2010) is the key document and evidence base for *Staying healthy*, 5th edition. Other references in *Staying healthy* have been revised and updated, where necessary. A full list of references is provided in Appendix 2.

5. Priority setting and policy content

5.1 Synthesis of *Australian guidelines for the prevention and control of infection in healthcare* (2010)

Advice on the principles of infection prevention and control are based on the *Australian guidelines for the prevention and control of infection in healthcare* (2010). The principles include effective hand hygiene, exclusion of ill children and adults, and immunisation. Additional to this is use of gloves, cough and sneeze etiquette, and effective environmental cleaning.

These principles are applicable to every education and care setting. However, not every education and care setting will be able to implement the principles in the same way because of different education and care environments and different philosophies on aspects such as environmental sustainability. Therefore, the advice provided in *Staying healthy* follows a risk management model that allows educators and staff in all education and care service settings to make decisions about how to apply the advice in their setting. The evidence base for this risk management model follows that of the *Australian guidelines for the prevention and control of infection in healthcare* (2010).

5.2 Alignment with National Quality Standard

The advice in *Staying healthy* aligns with the guiding quality areas, standards and elements of the National Quality Standard. Acknowledgment of the National Quality Standard has been included in the introduction of *Staying healthy.*

5.3 Australian Children's Education and Care Quality Authority (ACECQA)

ACECQA is the new national body that represents education and care services in Australia. ACECQA replaces the National Childcare Accreditation Council as the national body that monitors the standard and quality of education and care services.

The NHMRC consulted with ACECQA in drafting *Staying healthy* to ensure linkages of the advice to the National Quality Standards.

ACECQA provided advice on text to be placed in the introduction that supports the role of *Staying healthy* in education and care services as best practice and not regulatory advice.

6. Drafting *Staying healthy,* 5th edition

6.1 Targeted consultation

Targeted consultation was undertaken from August to September 2011. Stakeholders who attended the forum were invited to take part in the targeted consultation. All comments were considered, and changes were made to the draft where appropriate.

6.2 Public consultation

Public consultation took place from November 2011 to January 2012. Thirty-two submissions were received. All comments were considered, and changes were made to the draft where appropriate. All submissions that were not provided in-confidence have been placed on the NHMRC website (www.nhmrc.gov.au).

6.3 Expert review

Following public consultation and redrafting, the revised version was sent to eight experts to review. The experts comprised paediatricians, communicable diseases experts, a representative from Early Childhood Australia, and public health and population health experts.

7. Recommendations

The 5th edition of *Staying healthy* provides recommendations and information on the following areas:

- concepts in infection control (breaking the chain of infection)
  - effective hand hygiene
  - exclusion of ill children, educators and other staff
  - immunisation
  - additional strategies such as use of gloves, cough and sneeze etiquette, and effective environmental cleaning
- monitoring illness in children
- hygienic nappy changing and toileting
- safe handling of spills (of body substances)
- cleaning the education and care service
- food safety
- work health and safety (including immunisation and advice for pregnant women working in education and care services)
- role of public health units.

It also provides a series of fact sheets on infectious diseases common to education and care services.

8. NHMRC staff

Ms Cathy Connor, Director, Public Health, Research Translation Group, Canberra

Ms Tanja Farmer, Assistant Director, Public Health, Research Translation Group, Canberra

Mrs Marion Carey, Project Officer, Public Health, Research Translation Group, Canberra

Appendix 2 – Key documents and references

Key publication

National Health and Medical Research Council 2010, *Australian guidelines for the prevention and control of infection in healthcare*, NHMRC, Canberra.

References for advice provided further to the *Australian guidelines for the prevention and control of infection in healthcare* (2010)

Parts 1–4

Australian Children's Education and Care Quality Authority 2011, *Guide to the National Quality Standard*, ACECQA, Canberra, viewed 28 March 2012, <http://acecqa.gov.au/storage/3%20-%20Guide%20to%20the%20National%20Quality%20Standard%20FINAL.pdf>.

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Royal Children's Hospital Melbourne 2011, *Fever in children*, viewed 11 October 2011, <www.rch.org.au/kidsinfo/factsheets.cfm?doc_id=5200>.

Stigall, R 2010, *Reye's syndrome*, viewed 20 March 2012, <www.kidspot.com.au/familyhealth/Conditions-&-Disorders-Brain-&-nervous-system-Reyes-syndrome+2389+208+article.htm%20>.

Van, R, Wun, C-C, Morrow, AL and Pickering, LK 1991, 'The effect of diaper type and overclothing on fecal contamination in day-care centers', *Journal of the American Medical Association*, vol. 265, no. 14, pp. 1840–4.

Women's and Children's Health Network 2010, *Parenting and child health: fever,* viewed 20 March 2012, <www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=304&id=1798>.

Part 5 – Fact sheets

Bronchiolitis

Hawker, J, Begg, N, Reintjes, R and Weinberg, J 2005, *Communicable disease control handbook*, 2nd edn, Blackwell Publishing Asia, Carlton, Australia.

Candidiasis (thrush)

'Candidiasis', in DL Heymann (ed.) 2008, *Control of communicable diseases manual*, 19th edn, American Public Health Association, Washington, DC, p. 99.

Cold sores (herpes simplex)

'Herpes simplex', in DL Heymann (ed.) 2008, *Control of communicable diseases manual*, 19th edn, American Public Health Association, Washington, DC, p. 302.

Common cold

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Notes

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