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| A guide for the management and control of gastroenteritis outbreaks in camp facilities |
| Consultation draft |

Department of Health

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| A guide for the management and control of gastroenteritis outbreaks in camp facilities |
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# 1. Introduction

This guide has been produced to assist in the management and control of outbreaks of gastroenteritis (gastro) in recreational camps. Owners, managers and all camp staff should follow these guidelines to manage and control gastroenteritis outbreaks, and may also need to liaise with council environmental health officers (EHOs), and the Department of Health and Human Services (the department) if an outbreak investigation is conducted.

## 1.1 Gastroenteritis

Gastroenteritis may be caused by a variety of different bacteria, viruses or parasites. Symptoms of diarrhoea, nausea, vomiting and abdominal pains may be experienced over several hours, days or weeks, and may also be accompanied by fever, headache and lethargy. Gastrointestinal pathogens may be spread by direct person-to–person transmission, via aerosols of vomit, from contact with contaminated surfaces, animal-to-person transmission or by consuming contaminated food or water (bacteria, viruses or parasites). The time from becoming infected to the commencement of symptoms (the incubation period) can vary from a few hours to several days.

In recent years, the number of gastrointestinal outbreaks in residential facilities such as camps has increased. Where students/people are living in close, confined conditions (in shared rooms or dormitories) the risk of rapid spread of illness is increased.

When groups contact camp organisers to make arrangements to attend the camp, camp management should inform groups that anyone experiencing symptoms of diarrhoea and/or vomiting must not attend the camp. Also, all people experiencing gastrointestinal symptoms while on the way to the camp, or while staying at the camp, should be requested to return home as soon as possible after onset of symptoms. This may necessitate parents being contacted to collect ill children/students from the camp.

Gastroenteritis is generally self-limiting and no treatment is recommended, however, this is a decision for the treating doctor. Given the close living conditions and sharing of toilet facilities in camp settings, it is essential that outbreaks of gastroenteritis are contained (keeping the number infected people to a minimum) as quickly as possible by implementing the infection control procedures outlined in these guidelines.

## 1.2 Viral gastroenteritis

Recent increases in gastro outbreaks in residential facilities, including camps, are largely due to a highly infectious virus called norovirus. Norovirus is transmitted from person to person by faecal-oral spread, via aerosolised vomit and by consuming food contaminated by an infected person. It is a very hardy virus and can survive in the environment for weeks and withstand freezing, heating to 60°C and weak chlorine solutions. The incubation period is generally accepted to be 12–48 hours and symptoms, predominantly of vomiting, diarrhoea and abdominal pain, usually last for only 24–48 hours. As the virus passes from one person to the next, onset of illness in cases tends to occur over several days, rather than all at the same time.

Another virus, called rotavirus, also causes gastroenteritis and commonly infects young children. Again, it is highly infectious and may cause outbreaks where numbers of children gather together. The incubation period for rotavirus is 24–72 hours, and symptoms last for an average of 4–6 days. For further information on viral gastroenteritis, please refer to the department’s fact sheet [here](https://www2.health.vic.gov.au/about/publications/ResearchAndReports/Gastroenteritis%20-%20viral%20pamphlet)

< https://www2.health.vic.gov.au/about/publications/ResearchAndReports/Gastroenteritis%20-%20viral%20pamphlet>

## 1.3 Foodborne illness

Gastroenteritis can also be caused by eating contaminated food. Most foodborne illness is caused by bacteria which, given the right conditions, can grow in the food to numbers sufficient to infect the consumer – this is called the infective dose. If there is no further cooking, or the cooking process is inadequate, the bacteria may survive and infect those who eat the food.

Eggs can be high risk as they may sometimes be contaminated with *Salmonella* bacteria, so should not be eaten raw or undercooked. Eggs should always be kept in the fridge in the original carton and used before the best-before date. Cracked and/ or dirty eggs should be discarded. When storing, handling and preparing eggs, always take the same precautions as you would for raw chicken, meat, seafood and dairy products.

Bacteria called *Clostridium* perfringens can survive the cooking process in a spore state. The spores may then germinate to live bacteria that can grow to large numbers in the food and produce a toxin (poison) in the gut of the consumer. This bacteria may be found in meat based foods such as soups, gravies, casseroles and roasts, so if these foods are prepared ahead of serving time, they must be cooled quickly and stored in the fridge, and then re-heated quickly and served hot. It is not safe practice to repeatedly cool and reheat the same food over several meals or days – re-heat food only once.

Bacteria called *Staphylococcus* aureus can also produce toxins in food if allowed to grow to high numbers. As food can be contaminated with *Staphylococcus* aureus from a food handler’s hands it is essential that ready-to-eat food is not handled with bare hands. It is also important to store food at less than 5°C or above 60°C and minimise the amount of time food is kept between these temperatures during preparation, to reduce the risk of any bacterial growth.

**Care should be taken to always follow all aspects of the Food Safety Program (FSP), especially with regard to personal hygiene of food handlers, temperature control, cross-contamination, and cleaning and disinfection procedures.** Food safety records should be constantly maintained to show that food is being stored, prepared and served safely and that food handling staff are well trained in all aspects of food hygiene.

Where camps have dairy cows or goats, raw unpasteurised milk from these animals should not be served to camp attendees. Where camps have their own chickens, eggs should be collected carefully and all cracked or excessively dirty eggs should be discarded. Eggs should be carefully wiped with a clean, dry cloth to remove debris and all eggs must be well cooked before serving. Eggs should not be washed with or submerged in water, as this can lead to harmful bacteria from the shell entering the egg. Ensure that everyone washes their hands thoroughly after handling eggs. It is advisable not to serve undercooked or raw eggs or dishes/foods containing undercooked or raw eggs (for example, mayonnaise, mousse, egg flips) to camp attendees.

## 1.4 Waterborne illness

All water used for drinking and food preparation must be potable (safe to drink). The water quality standards for potable water are described in the *Australian drinking water guidelines*, available at [https://www.nhmrc.gov.au](https://www.nhmrc.gov.au/guidelines/publications/eh52). Department of Health and Human Services guidelines for the use of non-potable water in food businesses are available at <http://www.health.vic.gov.au/foodsafety/>. Water used for showering, bathing and hand basins should also be potable as there is a likelihood of ingesting water when using these facilities. Water used for flushing toilets, washing clothes, sheets and towels and other activities where water is unlikely to be ingested can be non-potable.

Private water supplies, such as dams, rivers, bores and rainwater tanks, cannot be guaranteed to be free of pathogens. For this reason, private water supplies that need to be potable should be treated to prevent the risk of waterborne illness. As the level of treatment is dependent on the quality of the source water, proprietors should seek advice from a water quality specialist to ensure the treatment system is appropriate for their circumstances.

It is important to regularly check that the private water supply system is maintained and working safely. Periodic samples should be collected for microbiological analysis and to check that disinfection levels are adequate. Further chemical analysis may be prudent, for example when water is sourced from a bore. Water monitoring programs should be designed in consultation with a water quality specialist.

It is therefore essential that all camps provide safe water for their guests at all times. Where businesses use private water supplies they must:

* ensure that surface run off and leakage from sewer pipes or sullage drainage cannot contaminate water storage or reticulation;
* seal water storage tanks to prevent the entry of animals and birds;
* monitor water quality for organisms that indicate contamination; and
* operate suitable treatment facilities.

Water used for recreational purposes, such as dams, lakes and rivers, should comply with the *Guidelines for managing risk in recreation waters*, available at [https://www.nhmrc.gov.au](https://www.nhmrc.gov.au/guidelines-publications/eh38)

Care must be taken to ensure that potable and non-potable water supply pipes are not cross connected, and that non-potable water cannot mix with potable water at any stage along the supply.

Gastroenteritis can be caused by drinking contaminated water. Waterborne illness may be caused by parasites such as *Giardia* and *Cryptosporidium*, by bacteria or by viruses.

When investigating outbreaks in camp settings, the water supply must be identified and assessed. If water is other than mains supplied, such as from a bore, rainwater tank or dam, the proprietor must provide the council EHO with the most recent evidence of potability (e.g. a water supply management plan). If the cause of an outbreak in a camp setting is suspected to be waterborne (e.g. from contaminated rainwater tanks, bore water or other private water supplies), the EHO should collect samples of water for laboratory testing and conduct a risk assessment of the water supply.

For further information can be obtained from the department’s website: <https://www2.health.vic.gov.au/public-health/water>

## 1.5 Animal-to-person infection

Many animals carry bacteria even if they have no signs of illness, and these bacteria can contaminate the animal environment. After touching animals and their surroundings bacteria present on hands can easily be taken into the mouth when eating or drinking, or when children put their fingers into their mouths. For this reason, it is essential that camps implement simple procedures to prevent infection from animals if they are kept at the camp (such as horses, sheep, goats, chickens, rabbits and guinea pigs), or from animals visiting the camp (such as petting zoos, or native fauna). All camp attendees and staff must wash their hands thoroughly (section 4 handwashing) after touching any animals, and after leaving any animal enclosure. Children must be carefully supervised at all times when amongst animals.

A brochure on Reducing the risk of gastroenteritis at open farm, petting zoos and animal exhibits can be found on the department’s website [here](https://www2.health.vic.gov.au/about/publications/researchandreports/Reducing-the-risk-of-gastroenteritis-at-open-farms-petting-zoos-and-animal-exhibitspamphlet)

< https://www2.health.vic.gov.au/about/publications/researchandreports/Reducing-the-risk-of-gastroenteritis-at-open-farms-petting-zoos-and-animal-exhibitspamphlet>

# 2. What should happen in the event of a gastro outbreak?

This section describes the various steps that need to be undertaken in the event of a gastroenteritis outbreak, including notification, control measures and other steps required to assist in the investigation of the outbreak (for example, faecal specimen collection). These steps are summarised in a figure 1 Gastro outbreak management summary flowchart. An outbreak management checklist (Appendix 3) has also been designed to assist camp facilities in managing their gastroenteritis outbreak(s). This checklist defines the tasks that need to be undertaken in the event of an outbreak and allows individual tasks to be signed off by staff members.

## 2.1 Notify the outbreak

Medical practitioners are legally required to notify the department if they become aware of cases who may have “Food or water borne illness (two or more associated cases)”. Currently there is no legal requirement for camp facilities to notify the Department of Health and Human Services of an outbreak of gastroenteritis.

However, notification of an outbreak of gastroenteritis by a camp facility is **strongly recommended** as the department can provide advice and support in managing outbreaks to minimise the severity and duration of illness.

### 2.1.1 Is a gastro outbreak occurring?

An outbreak may be defined as two or more cases of vomiting and/or diarrhoea occurring among camp attendees/students/staff within 48 hours of each other. If this occurs and the symptoms cannot be explained by medication or other medical conditions, you may have an outbreak.

### 2.1.2 How do you notify a gastro outbreak?

If you suspect you have a gastro outbreak, the first step is to notify the Department of Health and Human Services, Communicable Disease Prevention and Control on 1300 651 160 within 24 hours. The department officer will collect information on the number of cases, symptoms, duration of illness and other details, and can discuss any issues you may have and provide advice if necessary. Based on the information you provide, the officer will assess the probable cause of the outbreak and the way in which it is likely to spread. Gastro outbreaks are often notified to the department by camp attendees, parents of students and schools/organisations who have attended the camp.

**Notify outbreaks by telephone on 1300 651 160, and speak directly to a departmental officer as soon as possible. Please do not email and fax notifications of outbreaks, or leave messages regarding outbreaks on answering machines.**

### 2.1.3 What can be done to control the spread of illness?

Once an outbreak of gastroenteritis has been identified, it is essential that cleaning and infection control measures are implemented immediately to reduce the risk of the infection spreading and the number of cases increasing. Clean-up and control measures must be implemented for **all** gastrointestinal outbreaks as soon as possible after an outbreak is suspected, and should continue until the outbreak has been confirmed as being over (48 hours after symptoms have ceased in the last case - no further cases of illness occurring).

You will be contacted by your council EHO, who will visit the facility to conduct an inspection, check that infection control measures have been implemented and collect further information.

The control measures outlined in this guide have been suggested to reduce the risk of:

* people contracting the illness from contaminated food or drink;
* infected people passing the infection to others; and
* the pathogen remaining in the environment and being able to infect others.

Specific control measures may depend upon:

* the pathogen (bacteria or virus) known or suspected to be responsible for the illness;
* the way in which the pathogen spreads to others (known or unknown); and
* the setting where the outbreak has occurred.

### Figure 1. Gastro outbreak management summary flowchart

Gastro outbreak suspected or identified

Notify the outbreak to CDPC at the department

Inform ALL staff of the outbreak – keep staff informed as the outbreak progresses

Start a case list as a record of those who are ill – forward updated list to CDPC and Council at least twice per week.

Conduct outbreak cleaning and repeat regularly throughout outbreak

Implement outbreak infection control procedures - note additional infection control for suspected foodborne outbreaks

Arrange to provide faecal specimen collection kits to parents of children who are ill and have been sent home from the camp or to ill staff.

Implement hand washing procedures immediately

Advise parents/families of the outbreak by telephone or email.

Isolate ill children from others until they can be transported home.

Provide CDPC and/or council with additional information as requested

Continue until outbreak is over (48 hours after symptoms stop in last case)

# 3. Infection prevention and control measures

This section describes the various cleaning, infection prevention and control measures that should be implemented for all outbreaks of gastroenteritis, as well as additional control or investigational measures that should be implemented for food or water borne outbreaks.

## 3.1 Environmental cleaning and disinfection

Gastroenteritis may be caused by a number of pathogens, but the most common cause of gastroenteritis outbreaks in camps is norovirus. Norovirus is a very hardy organism that may survive on surfaces for up to 28 days, and as norovirus is highly infectious (approximately 10-100 viruses is all that is needed to cause infection), cleaning and disinfection of the environment is one of the most important measures for limiting the spread of disease.

The frequency of environmental cleaning and disinfection during an outbreak should be at **least twice daily**, particularly of frequently touched surfaces such as, toilets, toilet seats, flush handles, taps, light switches cupboard handles, door handles tables and chairs. All other areas of the premises, including games room, staff rooms, halls, rehearsal rooms, dining rooms, sick bays, first aid rooms, music rooms, outdoor play equipment and all communal and accommodation facilities should also be cleaned and disinfected frequently during an outbreak.

The choice of disinfectants that are effective against norovirus is limited. Generally, quaternary ammonia compounds (QATs), chloroxylenol (e.g. Dettol™) and alcohols have **not** been shown to be effective against norovirus, but chlorine-based disinfectants at a minimum dilution of 1000ppm are.

Always follow the manufacturer’s instructions for use (and dilution) of detergents and disinfectants. See also section 8 which is a guide for the dilution of chlorine-based solutions required for disinfection.

A final clean and disinfection should be conducted when there have been no further ill cases in staff or children for more than 48 hours and when the outbreak has been declared over.

**If a commercial cleaning company has been engaged by the camp facility to undertake the environmental cleaning it is the responsibility of the camp facility to ensure that the cleaning contractor is undertaking the cleaning and disinfection in accordance with this guide.**

The facility may need to **close** so that environmental cleaning can be completed prior to a new group arriving at the camp facility. If the cleaning cannot be completed prior to the new group’s arrival, consideration will need to be given as to whether the arrival of the new group can either be delayed, postponed or cancelled.

### 3.1.1 Kitchen cleaning

All kitchen areas should be cleaned and disinfected at the **beginning** of every outbreak and then **twice daily** until the outbreak has been declared over. All work surfaces, benches, shelving, doors, sinks, floors etc., or any other areas that are possibly contaminated should be cleaned and sanitised with 1000ppm of available chlorine. See section 8 for chlorine dilutions or check your supplier/manufacturer’s instructions.

### 3.1.2 Eating utensils

Crockery and cutlery should be washed and sanitised in a dishwasher if the rinse cycle is able to achieve a minimum of 82°C for two minutes, or if a dishwasher is not available, items should be washed by hand using hot water and detergent, then immersed in 100ppm of available chlorine for at least three minutes at 50°C, rinsed in hot water and dried. The use of disposable cutlery or separation of cutlery and crockery during an outbreak is not required. See section 8 for chlorine dilutions.

### 3.1.3 Carpets

All carpets contaminated by vomit and/or faeces should be cleaned with detergent and hot water and then steam cleaned, as high temperature and moisture are required to kill viruses. Clean all surface soiling thoroughly then use a vapour steam cleaner that boils the water until it turns to steam. True steam cleaners release steam under pressure, which ensures that the temperature is above 100°C and the carpet dries quickly. Vacuum cleaning carpets and polishing floors has the potential to recirculate norovirus and are not recommended during an outbreak[[1]](#footnote-1).

### 3.1.4 Cleaning up of vomit or faeces

Vomit can produce aerosols, (a fine mist of virus particles) suspended in the air and fall onto food or surfaces. If a child/adult vomits in a public area, all children/adults and staff should be **removed from the area for at least one hour** and the area cleaned immediately. Any uncovered food in the immediate area **must** be discarded.

Persons cleaning vomit or faeces should wear gloves, apron and a mask. Paper towels should be used to soak up excess vomit and faeces and disposed of into a sealed waste bag. The area can then be cleaned and disinfected.

### 3.1.5 Cleaning equipment

Where possible, cleaning equipment such as cloths, mops and brushes should be disposable and discarded immediately after use.

A summary of cleaning and disinfection recommendations for camp facilities has been included in table 1.

### Table 1. Cleaning and disinfection recommendations

|  |  |
| --- | --- |
| Item | Cleaning Recommendations |
| Buses / Transport vehicles if contaminated by faeces or vomit (seats, floors, handles, seat belts etc) | Wash all soiled areas thoroughly with detergent and hot water, then disinfect for 10 minutes with 1000ppm available chlorine. Rinse with cold water then dry. |
| Carpets contaminated by faeces or vomit | Clean with warm water and detergent then **steam clean** (True steam cleaners release steam under pressure, above 100°C)DO NOT vacuum carpets during an outbreak |
| Communal Areas (games rooms, staff rooms, halls, rehearsal rooms, dining areas, sick bays, first aid rooms, music rooms, accommodation facilities etc) | Wash with detergent and hot water, then disinfect for 10 minutes with 1000ppm available chlorine. Rinse with cold water then dry. |

| Item | Cleaning Recommendations |
| --- | --- |
| Kitchen – food contact surfaces (utensils, equipment, crockery, cutlery etc) | Immerse in hot water at a minimum of 82°C for 2 minutes. This can be done in a dishwasher as long as the rinse cycle reaches this temperature ORWash by hand then immerse in 100ppm of available chlorine for at least 3 minutes at 50°C. For equipment that cannot be completely immersed, 200ppm of available chlorine should be used on all surfaces for 10 minutes |
| Kitchen – work surfaces, benches, shelving, doors, door and cupboard handles, storage areas, sinks, floors etc. | Wash with detergent and hot water, then disinfect for 10 minutes with 1000ppm available chlorine. Rinse with cold water then dry. |
| Mattresses and soft furnishings (pillows, curtains, couches, cushions, doonas, etc) | Clean with warm water and detergent then **steam clean** (True steam cleaners release steam under pressure, above 100°C)OR Discard if not able to be effectively cleaned |
| Outdoor play equipment and playgrounds | Wash with detergent and hot water, then disinfect for 10 minutes with 1000ppm available chlorine. Rinse with cold water then leave to air dry. |
| Soiled clothing and linen (sheets, towels, blankets etc) | Wash in washing machine on the hottest cycle then dry in a dryer on the hot cycle. The Australian Standard AS/NZS 4146(2000) – guidelines for correct laundry practice. |
| Toilet/Bathroom Areas (toilet bowls/seats, hand wash basins, tap handles, doors and door handles, flush buttons, floors etc) | Wash with detergent and hot water, then disinfect for 10 minutes with 1000ppm available chlorine. Rinse with cold water then dry. |

### 3.1.6 Transport vehicles

Bus companies or other transport vehicles used by the camp or by the affected group(s) attending the camp, **must** be contacted to advise of the need for cleaning and disinfection (as above) of any vehicle that may have been contaminated by cases, particularly where vomiting has occurred in a vehicle. It is essential that the vehicle is cleaned and disinfected thoroughly prior to transporting any further groups.

### 3.1.6 Linen and laundry items

All soiled clothing and linen, including sheets, towels and blankets should be laundered separately with detergent and hot water in the washing machine. The Australian Standard *AS/NZS 4146:2000**Laundry Practice* provides guidance for correct laundry practice, including water temperatures and times for correct disinfection.

To prevent transmission of infection to staff, soiled linen/clothing should have minimal handling prior to laundering. All soiled children’s clothing should be placed into a sealed plastic bag for laundering by parents.

Parents should be advised to handle soiled clothing with disposable gloves and to launder clothing from ill children separately and in the hottest washing machine cycle the clothing can withstand. For temperatures less than 60°C the addition of a laundry sanitiser (for example, Napisan™) is recommended. Clothing should also be dried on the hottest dryer setting following washing.

### 3.1.7 Personal protective equipment (PPE)

Staff, cleaners and laundry workers should take extra precautions and use appropriate PPE (disposable gloves and/or disposable aprons) when cleaning environments, or handling laundry contaminated with faeces or vomit.

Hands should be washed thoroughly, before putting on PPE and immediately after removing PPE. PPE once used and removed should be placed into a sealed plastic bag and disposed of into the waste bin.

## 3.2 Hand hygiene

Hand hygiene is a general term that refers to any action of hand cleansing, such as hand washing with soap and water or hand rubbing with an alcohol-based hand rub (ABHR).

Hand hygiene is one of the **most effective** infection control measures for preventing the spread of infections. This can be done with soap and water, which removes both dirt and germs from the hands, or by using an ABHR, which reduces the number of germs on the hands. Emphasis should be placed on the importance of hand hygiene for all staff and camp attendees (children and adults).

### 3.2.1 Hand washing

Hands should be washed using a plain liquid soap for 15-20 seconds, then rinsed under running water and pat dried with disposable paper towel. Soap alone cannot remove dirt or 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 the skin. Hand dryers may be used, but it essential that hands are completely dried before undertaking any further activities. Multi-use cloth towels **must not** be used to dry hands.

### 3.2.2 Alcohol-based hand rubs

Generally, using an ABHR is the preferred method for hand cleansing when hands are not visibly dirty. Hands **must** be washed with plain liquid soap and water when visibly dirty or visibly soiled with blood or body fluids and after using the bathroom. ABHRs reduce the number of germs on the hands but they do not remove dirt from hands.

Because norovirus cannot be cultured, the effectiveness of alcohol-based preparations against this virus has been difficult to determine. ABHRs are useful in situations where soap and water are not always available.

## 3.3 Staff

Staff with a gastrointestinal illness **must** be excluded from working at the camp facility (and **cannot** work at any other camp) until 48 hours after symptoms have ceased, or if the pathogen is known, for the time specified in the guidelines for exclusion (see Appendix 2), this includes food handling staff, cleaners, tour operators, activity supervisors, volunteers etc..

Management should support the recommendation that staff should not return to work for 48 hours after symptoms have ceased. Staff should not feel compelled to return to work earlier for fear of losing their employment or due to staff shortages.

## 3.4 Camp attendees with gastrointestinal illness

Isolate any persons with gastrointestinal symptoms in an appropriate room (e.g. sick bay, first aid room or a bedroom removed from others). Sleeping arrangements may need to be reorganised to minimise contact between those who are ill and those who are well.

Staff/camp attendees/students should be advised that toilet lids should be closed before flushing to prevent faecal/vomit aerosols being generated.

Ill adults in the attending group (some of whom may be staff, for example teachers accompanying a school group) are to be isolated or advised to go home and not return to work until 48 hours after symptoms have ceased.

Parents of ill children/students should be contacted immediately and requested to collect their child and take them home as soon as possible. If this is not possible, they should be advised to travel home in a separate bus or use alternative transport to those who are well, as necessary.

## 3.5 Camp activities

Everyone who has symptoms or gastroenteritis or has recovered, should be excluded from any food handling or kitchen/dining room duties/rosters for the remainder of the camp.

Consideration will need to be given to the risks associated with any activities undertaken by the affected group(s) while at the camp, such as activities involving animal contact or water sports.

A list of activities conducted at the camp by the affected group(s) will need to be provided to the council EHO, if requested.

## 3.6 Signage

Post signs at all entrances stating that a gastroenteritis outbreak is occurring. Signs advising everyone to wash hands should also be posted above hand wash basins in all toilet, bathroom and kitchen areas.

See Appendix 6 for signage.

## 3.7 Waste management

All personal protective equipment (such as gloves, disposable aprons etc.) as well as any cleaning equipment (cloths, brushes etc.), that have been used to clean up faeces or vomit must be placed into a plastic bag, sealed and then disposed of into the waste bin.

# 4. Case lists

A case list of all camp attendees (children/students/teachers) and camp staff who have been ill should be prepared (see Appendix 5). This may be completed by staff at the camp premises or by the teaching staff (if the camp attendees are part of a school group).

Ensure that ill children/students/teachers and/or camp staff are included on the case lists. These case lists must be faxed to the council EHO and to the department.

So that the outbreak can be monitored effectively, the case list will need to be updated and sent to the council EHO and the department at least twice per week during an outbreak, or more often as requested, for example during suspected food or water borne outbreaks.

This means that new cases (people who have started to have symptoms since the last case list was completed) should be added to the list, and any additional information on cases already on the list should be added or updated, for example, a case may have been sent to hospital or a case’s symptoms may have stopped since the last time you updated the list. There is **no need to re-write the whole list** each time it is updated and each ill person is only to be added **once.**

“Symptoms started” means the date and time the case had the first symptom(s).

“Symptoms ended” means the date and time the case had the last symptoms(s) – **do not include** the symptom-free period with the end date.

# 5. Faecal specimen collection

To identify the pathogen responsible for an outbreak, faecal specimens should be collected from ill persons, including ill students, teachers, parents and other attendees, and ill camp/facility staff as soon as possible after onset of symptoms. Unless advised otherwise, faecal specimens should be collected from five ill people for each outbreak. Always record the date of faecal specimen collection for each case on the case list. Label the container before collecting the specimen.

**All** outbreak faecal specimens are tested by the Microbiological Diagnostic Unit Public Health Laboratory (MDU PHL) at the University of Melbourne. The EHO can provide faecal specimen collection kits to distribute to ill staff, camp attendees, students and/or parents of ill students. They will also arrange to collect the specimens and deliver them to the laboratory for testing. Ensure that ill people also receive a copy of the *Faecal specimen collection instructions* (see Appendix 4). Some parents may prefer to take ill children to their doctor for treatment, advice and faecal specimen collection.

Council EHOs can also deliver faecal specimen kits to the school for distribution to ill children/students returning home from the camp. Parents can then contact the council EHO once the specimen has been collected. The EHO can then forward the specimen to MDU for testing.

If camp attendees have an onset of symptoms at home after returning from camp, council EHOs can deliver faecal specimen collection kit to the home and collect them at a later date for submission to MDU.

In certain circumstances some ill food handling staff or ill camp staff, may be requested to give faecal specimens. The EHO will advise if this is the case. For any queries concerning faecal specimen collection, contact the department or your council EHO.

# 6. Declaring an outbreak over

**A gastro outbreak will not be declared to have ended until 48 hours after symptoms have ceased in the last case, that is no ongoing cases and no new cases occurring.**

The department can provide **final approval** when this time frame has occurred to ensure that the outbreak can be declared over.

A final clean-up and disinfection of the facility is required when an outbreak has been declared over. The case list will need to be updated to reflect that there are no further cases occurring, any existing case’s symptoms have ceased and the case list has been marked as ‘final’ and sent through to the council and department. A copy of all faecal specimen results, tested at MDU and collected as part of an outbreak are already provided to the council and the department. A copy of these results, once received will be provided to staff or parents of children who submitted a specimen.

If you are unsure whether your outbreak is over, please call the department on tel. 1300 651 160 to discuss.

**For unknown or food or water borne outbreaks:**

Although cases may have ceased and the outbreak may be declared over, the investigation of the outbreak may **not** be over. If the investigation is still continuing the council EHO will still be visiting the premises and collecting information to try and determine the cause and transmission of the outbreak. The department may also be analysing information and awaiting laboratory results of samples and specimens to inform the outbreak.

If you are unsure as to whether an **investigation** is over please ask your council EHO or speak to the public health officer dealing with your outbreak at the department.

# 7. Additional control measures for suspected food or water borne outbreaks.

If it is suspected that the outbreak is food or water borne (caused by eating contaminated food or drinking contaminated water), you may be required to undertake tasks in **addition** to those control measures described above.

## 7.1 Food

* Ensure that any suspect food or drink is not served but **do not** discard it. Ensure that it is kept in a suitable place (e.g. storeroom/fridge) and labelled with “do not use”, so it cannot be served by mistake, until the council EHO has collected it.
* Allow the council EHO to collect samples of foods and/or ingredients and environmental swabs (if indicated) of equipment or the kitchen environment. This should occur **before** the clean-up has been conducted. Store all food in the refrigerator until it is collected by the EHO.
* Allow the EHO to take away any equipment that is suspected to be contaminated, such as a blender used to blend raw ingredients.
* After the council EHO has collected samples ensure all potentially contaminated food is disposed of adequately under supervision by the EHO, who will advise on what food needs to be discarded.

## 7.2 Water

If the facility uses non-mains water (such as water from rainwater tanks, bore water or water from a dam or river):

* allow the EHO to collect samples of water;
* provide the EHO with the most recent documentation proving potability of the water, that the water is safe to drink (e.g. a water supply management plan). The EHO may also conduct a risk assessment of the water supply; and
* ensure that all water intended for drinking, food preparation and brushing teeth is boiled before use, until results of laboratory testing are available. Alternatively, water must be brought in from a safe source (e.g. commercially bottled), or existing water supplies must be treated by the most appropriate method, the EHO can advise on this.

## 7.3 Additional information to assist the outbreak investigation

As part of a foodborne disease investigation the EHO may also:

* conduct a food safety compliance check/inspection, review the FSP, particularly with regard to processes in place for the preparation of suspect foods and maintenance of records as well as the suppliers list for the business;
* request a list of **all** people who may have consumed the suspect meal(s) (including **all** children and staff);
* request a copy of the menus for all meals served in the week before onset of illness in the first case;
* request details of three-day food history for all cases (this information may best be obtained from staff);
* require as much detail as possible of the food process steps for preparing any implicated foods;
* require a copy of (this should be easily available as a part of your FSP); and
* conduct interviews with all exposed people, both sick people and well people or their parents/guardians to try and determine a source for the outbreak.

# 8. Communication

It is essential that details of the outbreak and the control measures in place are conveyed to **all** staff, including casual staff, contractors, cleaners and transport companies, and that staff are updated as the outbreak progresses. Staff briefings should give clear instructions on:

* transmission of gastroenteritis;
* infection control procedures;
* cleaning and disinfection procedures;
* isolation of ill cases and/or sending ill children home;
* collection of faecal specimens;
* exclusion of ill staff for 48 hours after symptoms cease; and
* the need to liaise closely with council and/or the department during the outbreak investigation.

**All staff should be informed that the outbreak will not be declared to have ended until 48 hours after symptoms have ceased in the last case, and there have been no cases of illness in subsequent groups attending the camp facility.**

# 9. Staff education and training

It is the responsibility of every camp facility to ensure that their staff are adequately trained and competent in all aspects of gastrointestinal outbreak management. Workplace education could be incorporated into induction training programs.

Staff should be able to identify the early signs of an outbreak and be prepared to know how to manage the outbreak while minimising the risk of infection to themselves. Equipment, staff and resources must be identified and accessible at all times.

During an outbreak, regular promotion of handwashing is recommended. Where possible, camp staff need to have access to PPE and need to be trained in how and when to use it. Training on cleaning and disinfection procedures is also important. If a vomiting incident occurs in any area, staff members need to know how to clean and disinfect the area correctly to prevent further transmission through environmental contamination and aerosolisation of vomit.

## 9.1 Adequate stock levels

Camp facilities should ensure that they have adequate stock levels of disposable materials required during an outbreak. This includes:

* personal protective equipment (gloves, gowns, masks, eyewear);
* hand hygiene products (liquid soap, paper towels);
* faecal specimen collection kits (your council EHO should be able to supply these); and
* cleaning supplies (detergent and bleach-based disinfectant).

Facilities should have an effective policy in place to ensure that they have access to additional stock from suppliers as required.

# 10. Privacy

In an outbreak situation, schools and camps are requested to provide EHOs and the department with information pertinent to the investigation. Councils and the department are required to adhere to privacy legislation governing the collection, use and dissemination of personal information. This information includes names and contact details of staff and parents, as well as names and illness information of children/ students/camp attendees, which will be needed to complete the case lists.

# 11.Media

The media may become aware of the outbreak at your camp facility either officially, through a departmental media release, or unofficially through other sources such as staff/parents of children or the general public. If a camp receives media enquires directly, in relation to an outbreak, they may wish to consult the department’s media unit before releasing any information. This will ensure accuracy and consistency with any departmental communications. Please call the department on 1300 651 160 for further assistance.

# Appendix 1. Guidance for the dilution of chlorine-based solutions required for disinfection

Chlorine based sanitisers (like household bleach) should be used in outbreak situations, as other sanitisers and disinfectants (such as quaternary ammonium compounds) are only effective against some bacteria but have very little effect on destroying viruses such as Norovirus.

Sufficient time is required to kill the virus – **at least 10 minutes contact time**.

Chlorine solutions **must** be made up just prior to use as the chlorine deteriorates over time. The following tables will assist in making up the required concentration needed for disinfection.

Cleaning and disinfection should be conducted **at least twice a day** until the outbreak is over.

**A final clean-up** and disinfection of all areas needs to be completed at the end of every outbreak (when there have been no symptomatic cases for at least 48 hours).

The following tables provide a guide to the correct dilution according to the product used.

**Dilutions using household bleach (with 4% available chlorine as written on the label)**

| **Household bleach 4% available chlorine** | **Add the following amounts of bleach to the water to give the required concentration** |
| --- | --- |
| **Volume of cold water to which chlorine is added** | **100ppm** | **200ppm** | **1000ppm** |
| 5 litres | 12.5ml | 25ml | 125ml |
| 10 litres | 25ml | 50ml | 250ml |
| 50 litres | 125ml | 250ml | 1250ml |

**Dilutions using a commercial grade sanitiser (with 12.5% available chlorine as written on the label)**

| **Commercial grade sanitiser 12.5% available chlorine** | **Add the following amounts of bleach to the water to give the required concentration** |
| --- | --- |
| **Volume of cold water to which chlorine is added** | **100ppm** | **200ppm** | **1000ppm** |
| 5 litres | 4.2ml | 8.4ml | 42ml |
| 10 litres | 8.4ml | 16.8ml | 84ml |
| 50 litres | 42ml | 84ml | 420ml |

***Please Note:*** *This table is to be used as a guide only. For questions about how to dilute specific products please refer to the relevant Material Safety Data Sheet (MSDS) for the specific product being used, or contact your supplier or manufacturer of the chemical.*

***Milton tablets are not validated for use as a surface disinfectant and are not recommended for this purpose.***

**Important safety notes:**

* It is safer to add chlorine to water – **do not** add water to chlorine.
* Do not heat water up to make chlorine solutions – cold water is safer.
* Mix in a well ventilated room.
* Do not mix with any other chemical.
* Use gloves and wear protective eye wear when preparing chlorine solutions.
* Follow safety, storage and handling instructions on all bleach and chlorine containers.
* Use chlorine carefully as it is corrosive to metals, damages fabrics/textiles and may irritate the skin, nose and lungs.
* Solution should not be used in spray bottles.

# Appendix 2. Exclusion guidelines for food handlers, health care workers and child care workers

| Gastrointestinal illness/pathogen | Exclusion period advised |
| --- | --- |
| Cholera, Shigella | Until 2 successive negative faecal specimens are taken 24 hours apart, and not less than 48 hours after taking antibiotics. Food handlers, health care workers and childcare workers need to be counselled on personal hygiene before returning to work. |
| Typhoid and Paratyphoid | Until 2 consecutive negative faecal specimens are taken one week apart, and not less than 48 hours after taking antibiotics. Cases who continue to excrete for 90 days or more are not to engage in food handling. |
| Other bacterial gastroenteritis (including Campylobacter, Salmonella, Staphylococcus, Clostridium, Helicobacter, Vibrio, Listeria, Entamoeba).Giardia or Cryptosporidium | Until diarrhoea has ceased. Food handlers, health care workers and childcare workers to be counselled on personal hygiene before returning to work. |
| Hepatitis A or E | Until a medical certificate of recovery is received, but not before 7 days after onset of jaundice or illness.Food handlers with acute hepatitis illness should be excluded from work until laboratory tests confirm that the infection is not due to either Hepatitis A or E. |
| STEC/VTECOther viral gastroenteritis (including rotavirus and norovirus), or when the pathogen is unknown | Until 48 hours after symptoms have ceased. |

# Appendix 3. Outbreak management checklist for gastroenteritis outbreaks in camp facilities

This checklist has been designed to assist camp facilities in managing gastroenteritis outbreaks. The use of this checklist is optional and the Department of Health and Human Services **does not** require a copy.

**Outbreak definition**

**An outbreak may be defined as two or more cases of vomiting and/or diarrhoea occurring among camp attendees/students/staff within 48 hours of each other. If this occurs and the symptoms cannot be explained by medication or other medical conditions, you may have an outbreak.**

| Checklist | Date provided or N/A | Signature of person responsible |
| --- | --- | --- |
| **IDENTIFY AND NOTIFY:** |
| **Outbreak detected -** Identify if your camp has an outbreak using the above definition | \_\_\_/\_\_\_/\_\_\_ |  |
| **Name of outbreak coordinator** |
| Outbreak notified to the department, Communicable Disease prevention and Control (CDPC) on tel. 1300 651 160 | \_\_\_/\_\_\_/\_\_\_ |  |
| **IMMEDIATELY:** |
| **Implement infection prevention and control measures** (Section 3) |  |
| **Implement outbreak hand hygiene** (Section 3.2) |  |
| **Exclude ill staff from work** – until 48 hours after symptoms have ceased (Section 3.3) |  |
| **Isolate any persons with gastro symptoms** – until they are able to be sent home from camp (Section 3.4) |  |
| **Begin environmental cleaning and disinfection** (Section 3.1) |  |
| **Complete case list(s)** – include details of all ill children/attendees and camp staff (Appendix 5) |  |
| **Organise for the collection of faecal specimens** – give out faecal collection kits to parents of ill children/attendees and to staff (Section 5) |  |
| **Post signage** - at appropriate locations throughout the camp facility including all entrances (Appendix 6) |  |
| **Communicate all outbreak information to all staff** (Section 8) |  |
| **PROVIDE THE DEPARTMENT (CDPC) AND/OR COUNCIL WITH:** |
| **Initial case list** - to the department (CDPC) either by fax: 1300 651 170 or email: cdi&r@dhhs.vic.gov.au and your local council EHO as directed | \_\_\_/\_\_\_/\_\_\_ |  |
| Menus (if requested) | \_\_\_/\_\_\_/\_\_\_ |  |
| Food suppliers list (if requested) | \_\_\_/\_\_\_/\_\_\_ |  |
| A copy of the food safety program (if requested) | \_\_\_/\_\_\_/\_\_\_ |  |
| **COMMUNICATION:** |
| Communicate all outbreak information to all staff | \_\_\_/\_\_\_/\_\_\_ |  |
| **ONGOING:** |
| Continue outbreak cleaning procedures (minimum twice daily cleaning until outbreak has been declared over) |  |
| Update the case list daily and fax to the department & council twice weekly or until the affected group(s) depart from the camp |  |
| Continue with communication to all staff |  |
| **DECLARE OUTBREAK OVER:** |
| **Declare outbreak over** – 48 hours after symptoms have ceased in the last case (child or staff member), so no ongoing cases and no new cases occurring. | \_\_\_/\_\_\_/\_\_\_ |  |
| **Fax final case list to the department and council**  | \_\_\_/\_\_\_/\_\_\_ |  |
| **Conduct a final clean-up of the camp premises**  | \_\_\_/\_\_\_/\_\_\_ |  |
| Communicate to staff that the outbreak is over. | \_\_\_/\_\_\_/\_\_\_ |  |
| Remove all signage | \_\_\_/\_\_\_/\_\_\_ |  |
| Return to normal duties | \_\_\_/\_\_\_/\_\_\_ |  |
| **Review Outbreak Management & Recommendations for Improvement(s):** |
|  |
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# Appendix 4. Instructions for the collection of faecal (poo) specimens

**The faecal kit provided to you should contain:**

* A faecal (poo) collection pot (with or without) a built-in scoop inside the lid;
* A wooden spatula or plastic spoon;
* A zip-lock (bio hazard) plastic bag and a brown paper bag, if provided;
* A laboratory request form (this may or may not be provided to the patient by should be included with the specimen after collection); and
* Instructions for the collection of a faecal (poo) specimen.

**Patients should collect a faecal specimen as soon as possible.**

1. Label the specimen jar carefully, with patient’s name, date of birth or age and date and time of collection (nothing AM or PM).
2. Include the outbreak name, if known.
3. Place a large clean container (e.g. clean plastic ice cream container), plastic wrap or newspaper in the toilet bowl.
4. Pass faeces (poo) directly into the large container, plastic wrap or newspaper.
5. Do not contaminate the faeces (poo) with urine.
6. Open the sample jar. Using the scoop inside the lid of the jar, scoop enough of the faeces (poo) to fill about half of the jar. If there is no scoop provided inside the lid of the jar, use the wooden spatula or plastic spoon provided to place the sample inside the jar. Take care not to contaminate the outside of the jar.
7. Dispose of left-over faecal matter (poo) from the large container, plastic wrap or newspaper into the toilet, then place the large container, plastic wrap or newspaper into a plastic bag, secure and place directly into the rubbish bin.
8. Make sure you wash your hands after collecting the faecal (poo) specimen.
9. Screw the lid on the sample jar firmly. Put the jar into the plastic zip-lock or bio-hazard bag and include the laboratory request form if provided. Then place into the brown paper bag (if provided).
10. Keep specimen cool (at 2-8°C) in the fridge – but DO NOT FREEZE.
11. Telephone the council EHO without delay and request they pick up the specimen.

# Appendix 5 – Outbreak case list**:** Camp facilities



**Sent from:**



# Appendix 6: Signage – Camp facilities

See following pages for suggested signage.



**Attention staff**

**and visitors**

Our camp currently has visitors and/or staff

with gastroenteritis (vomiting and/or diarrhoea).

To protect yourself and others please wash

and dry your hands thoroughly and often.

Thank you for your cooperation.******



**Attention staff**

**and visitors**

This water may not be safe to drink.

Please do not drink this water

until further notice.

Thank you for your cooperation

******

# Acronyms and abbreviations

The following acronyms apply throughout this guide

| CDPC | Communicable Disease Prevention and Control, Department of Health and Human Services |
| --- | --- |
| CHO | Chief Health Officer, Department of Health and Human Services |
| the department | Department of Health and Human Services |
| EHO | Environmental Health Officer |
| FSP | Food Safety Program |
| MDU | Microbiological Diagnostic Unit (Public health laboratory) |
| PPE | Personal protective equipment |
| ppm | Parts per million (a measure of concentration) |

# Glossary

The following definitions apply throughout this guide

|  |  |
| --- | --- |
| Aerosols | In medical terms means the fine particles that are emitted after coughing or vomiting and that may be a vehicle for transmitting infection. |
| Available chlorine | Free chlorine expressed as a percentage of active ingredient in a concentrated liquid or powder |
| Camp settings | Includes recreational camps, school camps and boarding schools, where accommodation, sanitary and dining facilities are provided. Food service may or may not be provided by the premises |
| Cleaning | The removal of soiled matter (including organic material) and the reduction of the number of microorganisms from the surface of an item by a process such as detergent and water to the extent necessary for further processing or for intended use |
| Contamination | The introduction of microorganisms or foreign matter to sterile or non-sterile materials or tissues |
| Detergent | A substance that enhances the cleansing action of water (preferably warm/hot) or another liquid |
| Disinfect/disinfection | A process that reduces the number of viable organisms on an item to a level specified as appropriate for its intended further handling or use |
| Disinfectant | A chemical agent that is applied to non-living objects to kill micro-organisms |
| Environmental Health Officer | An authorised officer employed by either local or state government  |
| Faecal-oral transmission | Transmission of an infection whereby faecal particles pass from one person to the mouth of another person, mainly through poor hygiene practices |
| Foodborne transmission | Transmission of an infection through the ingestion of contaminated food |
| Food safety program | A food safety program is a written document indicating how a food business will control the food safety hazards associated with the food handling activities of the business. Only certain high risk food businesses are required to have food safety programs. (Standard 3.2.1 Safe Food Australia – FSANZ). |

|  |  |
| --- | --- |
| Gastroenteritis (Gastrointestinal Illness, Gastro) | Inflammation of a membrane of the stomach and intestines, caused by variety of different enteric pathogens. Symptoms may include diarrhoea, nausea, vomiting, abdominal pain, abdominal cramps, fever and sometimes headaches, lethargy, chills and muscular pains |
| Incubation period | The time interval between initial contact with an infectious agent and the appearance of the first clinical signs and symptoms of the disease |
| Infection | Invasion and multiplication of microorganisms in body tissues |
| Infection control | The process of minimising the risks of spreading infection |
| Microorganisms | A microscopic organism |
| Organism | An individual animal, plant or single-celled life form. |
| Outbreak | The occurrence of a disease or health event in excess of the expected number of cases for a given time or place |
| Person-to-person transmission | Transmission of a disease by close and direct personal contact. For example, touching, kissing or sexual intercourse |
| PPE (personal protective equipment) | Protective clothing, goggles, or other garments or equipment designed to protect the wearer’s body from injury or infection. |
| Sanitise | To reduce pathogenic microorganisms to a safe level |
| Self-limiting | (of a condition) ultimately resolving itself without treatment |
| Transmission | In terms of infection, it relates to any mechanism by which an infectious agent is spread from a source or reservoir to a person |
| Viable | Alive, capable of living, developing or reproducing. |
| Waterborne Transmission | Transmission of illness through the ingestion of contaminated water. |

1. Communicable Diseases Network Australia. (2010). Guidelines for the public health management of gastroenteritis outbreaks due to norovirus or suspected viral agents in Australia.. Available: http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-norovirus.htm. [↑](#footnote-ref-1)