Gastroenteritis outbreak management guideline for South Australian residential environments

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SA Health

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Introduction

This practical guide to the management of gastroenteritis has been developed to assist all residential environments * such as residential aged care facilities (RACF), to manage outbreaks of viral and/or bacterial gastroenteritis.

Gastroenteritis is caused by a range of pathogens including viruses and bacteria, which can cause outbreaks in the community and institutions. In South Australia certain bacterial gastroenteritis diseases and suspected food poisoning are notifiable to the Communicable Disease Control Branch (CDCB) of the Department for Health and Wellbeing, under the *South Australian Public Health Act 2011*. This requirement is the responsibility of both medical practitioners and laboratories. Viral agents of gastroenteritis (other than rotavirus infection) are not notifiable, but can still cause serious outbreaks in institutions and need to be managed. Importantly, it may be difficult to determine in the initial stages of an outbreak if the cause is due to food poisoning or not and so it is advisable that any gastroenteritis outbreak is managed in accordance with these guidelines. It is important that infection control strategies are implemented immediately to prevent the spread of infection to other residents, staff, visitors, and volunteers. Similarly, it is important that specimens are sent early in an outbreak to assist with diagnosis and treatment.

The facility, CDCB and local government authorities share the responsibility for investigation and management of gastroenteritis outbreaks. Environmental health officers (EHOs) from the respective local government authorities can be contacted to investigate the potential environmental causes for the outbreak, such as food or water. CDCB can be contacted for information, resources and advice.

While this practical guide to management of gastroenteritis is aimed at residential facilities, the principles outlined Section 2 are applicable to all settings (e.g. schools, child care centres and pre-schools) and should guide decision making in all circumstances.

The appendix contains forms that can be utilised by the residential facility for recording information regarding both staff and resident cases. Sample signs are also provided that can be utilised by the facility if required. In addition, there are fact sheets provided that are designed for residents, visitors and relatives; these can be printed and photocopied as required.

Instructions for use

* The Guidance provided in this document can be applied to other health and non-health settings, including hospitals, hostels, rehabilitation facilities and cruise ships.

It is advised that the recommendations within this document be implemented in conjunction with other relevant guidelines

- **Communicable Diseases Network Australia (CDNA) guidelines for public health management of gastroenteritis**
  https://www1.health.gov.au/internet/main/publishing.nsf/content/cda-cdna-norovirus.htm/$File/norovirus-guidelines.pdf
- **Centers for Disease Control and Prevention (CDC) vessel sanitation program**
  https://www.cdc.gov/nceh/vsp/default.htm

Definitions

In the context of this document:

- **Aerosol:** Tiny airborne droplets that are exhaled during coughing, sneezing or vomiting and can remain suspended in air or on dust particles. The droplets in the air may be breathed in directly by another person, or indirectly enter another person through contact with surfaces and hands with the droplets on them.
- **Disinfection:** A process that is intended to kill or remove pathogenic micro-organisms.
- **Epidemic:** The occurrence in a community or region of cases of an illness in excess of what is normally expected.
- **Epidemic curve:** The distribution of the times when people have become ill. The numbers of people who are ill on each day or time period are graphed over a period of time.
- **Faecal-oral route:** The infecting organism is spread when microscopic amounts of faeces from an infected person with symptoms, or an infected person without symptoms (a carrier), are taken in by another person by mouth. The faeces may be passed directly in microscopic amounts from soiled hands to mouth or indirectly by way of objects, surfaces, food or water soiled with faeces.
- **Food handler:** A person who directly engages in the preparation / handling of food or who handles surfaces likely to come into contact with food.
- **Gastroenteritis:** Describes a group of conditions usually caused by infection with a micro-organism or ingestion of chemical toxins. Gastroenteritis usually consists of mild to severe diarrhoea that may be accompanied by loss of appetite, nausea, vomiting, cramps and discomfort in the abdomen.
- **Hand hygiene (HH):** A process that reduces the number of micro-organisms on hands. Hand hygiene is a general term applying to the use of soap/solution (non-antimicrobial or antimicrobial) and water or a waterless antimicrobial agent to the surface of the hands (e.g. alcohol-based hand rubs - ABHR).
- **Hand washing:** The application of soap and water to the surface of the hands.
- **Illness register:** A register used to collect information on gastroenteritis cases and may be referred to as a line list.
- **Incubation period:** The interval from the ingestion of the micro-organism (for gastroenteritis) to the time clinical illness begins.
- **Infection:** The process by which organisms capable of causing disease gain entry to the body and increase in numbers.
- **Infectious gastroenteritis:** Gastroenteritis caused by an infection with a micro-organism. A large range of micro-organisms have been reported to cause gastroenteritis including norovirus, rotavirus, *Salmonella* and *Clostridium perfringens*.
- **Infectious period:** The period of time that the infected person can transmit the disease.
- **Line list:** See illness register
- **Outbreak**: An epidemic limited to localised increase in the incidence of a disease, e.g. in a town, or closed institution.
- **Sanitisation:** A process that reduces microbial contamination to a low level by the use of cleaning solutions, hot water or chemical disinfectants.

- **Standard precautions:** Standard practices that apply to the care and treatment of all people regardless of their perceived infectious risk. These precautions include: hand hygiene, use of personal protective equipment (PPE), aseptic technique, appropriate reprocessing of instruments and equipment and implementing environmental controls (cleaning, waste and laundry management).
- **Transmission-based precautions:** Precautions required when standard precautions may not be sufficient to prevent the transmission of infectious agents. Transmission-based precautions are tailored to the specific infectious agent concerned and may include measures to prevent airborne, droplet or contact transmission.

1. Information about Gastroenteritis

1.1. Background

Gastroenteritis is a term used for irritation or infection of the digestive tract. Major symptoms include diarrhoea, vomiting, nausea and abdominal cramps. Sometimes these symptoms may be accompanied by fever, headache and overall weakness.

People most at risk of developing complications of gastroenteritis include infants, young children, immuno-compromised and the elderly. In Australia, outbreaks of gastroenteritis in settings such as aged care facilities are common. The majority of these outbreaks are viral (frequently caused by norovirus) and are thought to be due to person-to-person transmission. For all settings, communal living conditions, staff such as health care workers and the use of common food preparation areas may facilitate the spread of disease.

There are many causes of gastroenteritis (see Appendix 1 – Common causes of gastrointestinal illnesses). The commonest causes are infectious organisms such as certain bacteria, viruses and parasites. In general, people acquire gastrointestinal illness by direct person to person transmission, airborne spread through aerosolised vomit, consumption of contaminated food or water, or contact with contaminated environmental surfaces or fomites (objects). It is unlikely that gastrointestinal infection with a viral pathogen occurs via the lower respiratory tract. It is more probable that an individual can acquire the infection from breathing in aerosolised vomit and then swallowing the infected aerosols.

While it can be difficult to identify an outbreak of gastrointestinal disease in the initial stages as due to foodborne or person-to-person spread without laboratory confirmation of the pathogen, there are features of bacterial infections (often foodborne) that typically differ from features of viral infection (often person-to-person spread). Gastrointestinal illnesses due to bacteria such *Salmonella* and *Campylobacter* typically cause symptoms of diarrhoea (that may contain blood, mucus or pus), abdominal cramping and vomiting. The incubation period i.e. from the time the person becomes infected to developing the symptoms, varies depending on the pathogen but may range from a few hours to several days. Viruses such as rotavirus, norovirus, adenovirus and astrovirus can cause gastroenteritis in humans. Gastroenteritis outbreaks are most commonly due to the viral pathogen, norovirus, and are characterised by a high number of exposed people becoming infected, a high frequency of vomiting and short duration of illness (from 24 to 48 hours).

Another cause of diarrhoeal illness within aged care facilities that should be considered is *Clostridiodes difficile* (previously known as *Clostridium difficile*). *C.difficile* infection is a disease of the large intestine that is caused by toxins produced by the anaerobic, spore-forming bacterium *C. difficile*. One major trigger for infection is disturbance of the normal gut flora during antibiotic treatment. This allows ingested spores to colonise the intestine and produce toxins that attack the lining of the intestinal wall. Severity can range from mild, self-

limiting diarrhoea to a serious form of the disease, known as pseudomembranous colitis. The latter has a high mortality rate if not recognised early and treated appropriately.

A summary of signs and symptoms and incubation periods is included in Appendix 1. This summary also includes suggested exclusion or heightened infection control periods that take into account issues such as the mode of transmission of the organism, the incubation period, the possibility of prolonged shedding of the organism, and the possibility of serious morbidity or mortality from the infection.

There is no specific treatment for most forms of infective gastroenteritis. It is generally a self-limiting illness. In infants and elderly persons, the most common complication is dehydration so maintaining good fluid intake is important.

The economic impact caused by outbreaks of gastroenteritis in residential facilities should not be underestimated. The need for additional human and material resources can present an overwhelming economic burden for many facilities.

The early implementation of infection control procedures may limit the spread of infection and reduce resident morbidity and mortality.

1.2. Gastroenteritis in residential environments

The onset of unexplained vomiting and/or diarrhoea in more than one person over a 24 hour period warrants heightened awareness by facility staff and may suggest an outbreak in a residential facility (excluding cases who have a known cause e.g. bowel disease, aperients). There are other causes to consider in other settings e.g. pregnancy and alcohol induced bowel irritation.

An individual case of gastroenteritis maybe defined as a person with new onset of three or more loose stools in a 24 hour period that are different from normal and/or two or more episodes of vomiting in a 24 hour period that is again different from normal.

An outbreak is defined as two or more cases who have vomiting or diarrhoea over a 24 hour period. During an outbreak specific actions need to be implemented to:

- stop the spread of infection
- ensure that these outbreaks are not due to foodborne sources
- identify the cause and source of the infection.

Refer to Appendix 2 for a flowchart illustrating the steps in the management of an outbreak of gastroenteritis.

It is important to record details (known as a ‘line-list’) about each suspected case (including staff) which includes:

- time and date of when the illness began
- duration of illness
- information on key symptoms
- possible source of infection (potentially unsafe food, water or food outlet)
- when laboratory tests have been conducted and the results of the laboratory tests when available.

An outbreak is deemed over when there have been no new cases for 72 hours or as indicated in Appendix 1.

Refer to Appendix form: Register for residents ill with gastroenteritis and Appendix form: Register for staff ill with gastroenteritis.

2. Infection Control Measures

These guidelines outline the approach to infection control in a residential setting to protect against the spread of gastroenteritis. For all gastrointestinal infections person-to-person spread is possible, even if the infection was initially food-borne. Infection control attempts to prevent the person-to-person spread via the faecal-oral route and by contamination of environmental surfaces. The steps below will help to stop the further spread of a gastroenteritis outbreak.

WHAT SHOULD WE DO?

All precautions outlined below are designed to limit the spread of illness. They are based on the principles of standard precautions with the addition of specific transmission-based precautions as necessary and as indicated by a risk assessment process.

Refer to Appendix 3 for an infection control measures check sheet.

2.1. Staff

- All staff with symptoms of diarrhoea/vomiting must be excluded from work for at least 24 hours after diarrhoea and vomiting ceases. Any staff who either prepare or handle food must be excluded from work for at least 48 hours after vomiting and diarrhoea have ceased.
- Staff who develop symptoms at work must go home immediately.
- Agency staff and medical staff should be made aware of the risk of transmission to other institutions.
- Personal protective equipment (PPE) including a single use disposable gloves and long sleeved gown should be applied upon entering the rooms of residents unwell with gastroenteritis, (see section on PPE) and disposed of immediately after removal and prior to leaving the room.
- Hands must be washed before and after each contact with a resident and before and after using disposable gloves. An alcohol based hand rub can also be used when soap and water is not easily accessible (see section on Hand Hygiene). Soap and water should be used when hands are visibly soiled.
- Fluid repellent surgical masks and eye protection should be worn by staff when there is a potential for aerosol dissemination e.g. attending a person who is vomiting or cleaning areas or items that are visibly contaminated by faeces or vomitus.
- Wherever possible there should be dedicated staff to care for unwell residents, and these staff should not be involved in the preparation or serving of food, or feeding of well residents. If dedicated staffing is not possible staff must observe strict handwashing procedures when moving between unwell and well residents.
- Where possible avoid staff movement to unaffected areas of a facility.
- All staff should wear clean clothing daily and change soiled clothing as soon as possible.

2.2. Residents

- All residents should wash their hands, or have their hands washed, before meals, and after any episodes of vomiting/diarrhoea (see section on Hand Hygiene).
- Well residents should be separated from unwell residents for at least 24 hours after resolution of symptoms.

- Unwell residents should not use common areas, shared lounges and meal areas while symptomatic. Where possible, unwell residents should not share a room with others. If unwell residents must share a room with others then strict infection control including hand hygiene procedures must be in place for staff, residents and visitors, and separate toilet facilities should be allocated for the affected residents.
- Well residents may be allowed to continue normal daily activities. Consideration should be given to stopping non-essential communal activities dependent on the number of unwell residents and staff, and a risk assessment of the extent of the outbreak.
- If possible, avoid transferring unwell residents to other institutions whilst outbreak is in progress or the outbreak is not well controlled. If a transfer is necessary ensure receiving institution and ambulance service is notified of the outbreak.
- Where possible no new residents should be admitted to the affected area until outbreak is over, however residents who have been in a hospital can be transferred back especially if it is to a room with ensuite facilities. This should be discussed with the transferring facility and infection control advice obtained if required.

2.3. Visitors/relatives/attending therapists

- Visitors entering a facility where there is an outbreak should be made aware of the risk of transmission and infection and discouraged from bringing in food in to the facility.
- Signs should be posted at the entrance of the facility, on the door of affected resident's rooms and/or on the toilet designated for use by affected residents (See Appendix 4 for examples of alert notices and posters).
- Visitors to affected areas may need to be limited, and infection control precautions taken during the visit. Where possible, visitors should not visit both areas affected and unaffected by the outbreak during the same visit.
- All visitors should practice good hand hygiene including washing with soap and water or decontamination using ABHR of their hands on arrival and leaving the facility as well before and after visiting. A hand hygiene station at the entrance and access to hand hygiene equipment will assist with compliance.
- Visitors experiencing any symptoms of infectious gastroenteritis should be advised not to visit the facility until at least 24 hours after their diarrhoea and vomiting ceases.
- Avoid non-essential visits from therapists e.g. podiatrists, physiotherapists, hairdressers, masseuse in areas experiencing outbreak.
- Generally, there is no need to close a whole facility. If this is to be considered contact CDCB on 1300 232 272 for advice. However, if cases are confined to a particular area that can easily be isolated then limiting visitors, deferring or cancelling communal activities or therapy should be considered.

2.4. Hand hygiene

- Staff and visitors should wash their hands before and after all resident contact.
- Residents should wash their hands after going to the toilet, before meals and after any episode of diarrhoea or vomiting. They should be given assistance with personal hygiene as required.
- Hands should be washed thoroughly by rubbing all surfaces of lathered hands vigorously for at least 20 seconds with soap under running water.
- When washing is complete thoroughly rinse hands under running water, then dry hands well by patting with a disposable paper towel.

- Soap and water should be used wherever possible. ABHR may be useful for hand decontamination providing hands are not visibly contaminated with vomit, faeces or any other body fluids.
- It is preferable to use soap and water for hand hygiene whenever norovirus is suspected or confirmed as the cause of the outbreak. Hands should be washed especially when visibly contaminated with body fluids, faeces or vomit.
- ABHR products are not highly effective against norovirus or *C.difficile*. ABHR can be used when handwashing facilities are not available, however hands should then be washed as soon as appropriate facilities are available.

2.5. Personal protective equipment (PPE)

- Examples of PPE are:
  - disposable gloves (a range of suitable sizes should be available)
  - disposable long sleeved gowns (impermeable, fluid resistant)
  - plastic aprons
  - masks (surgical, fluid repellent)
  - protective eyewear (e.g. goggles, safety glasses or face shields); these items are used to prevent splashes of vomit or faeces to the eyes, nose, and mouth.
- Care must be taken when removing PPE to reduce the risk of self-contamination. Hands must be washed thoroughly after removal of PPE.
- Reusable plastic aprons and protective eyewear should be washed with detergent and water or detergent wipes between uses. If the items have been contaminated with faeces or vomit then an appropriate disinfectant (e.g. chlorine-based solution such as bleach) should be used to disinfect them after first washing with detergent and water. Adequate stocks of PPE should be provided and be easily accessible.
- Choose the appropriate PPE for the task to be undertaken. Masks and protective eyewear may be required for handling vomit/faeces from affected persons.
- Gloves are to be removed in area of use - they are not to be worn out into common areas. Hands must be washed or decontaminated before and after using disposable gloves and in accordance with the 5 moments for hand hygiene, noting that gloves are single use only.

2.6. Cleaning up vomit/faeces

- Vomit can produce aerosols suspended in the air and fall onto food or surfaces. If a person vomits in a public area, all people should be removed from the vicinity and the area cleaned immediately.
- Choose and put on PPE (refer PPE section) – gloves, apron/long sleeve gown and mask will be required.
- Soak up excess with paper towel and dispose into leak proof plastic bag.
- Clean area with detergent and water using disposable cloth and discard into a plastic bag.
- Disinfect affected area/surface with chlorine-based solution (refer table 1 for dilution example). Check surface compatibility with manufacturer's instructions.
- Use disposable mop heads if possible or if non-disposable mop heads are used, launder in a hot wash.
- Wash hands after removing PPE and gloves.

- Soiled carpeted areas should be cleaned with detergent and water then steam-cleaned. Vacuum cleaning carpets has the potential to recirculate virus particles and is not recommended.
  Note: CDNA suggests that repeated outbreaks of norovirus have occurred even when carpets have been steam cleaned.
- Soft furnishings that may be damaged by bleach should be cleaned thoroughly with detergent and water or steam cleaned and then left to dry completely. Contaminated mattresses should be steam cleaned. Contaminated pillows should be laundered in the same way as linen. Pillows and mattresses with impermeable covers should be cleaned either by using:
  - detergent and warm water followed by wiping with a bleach solution

  OR

  - 2-in1 clean in which a mechanical/ manual cleaning action using a combined detergent/disinfectant solution or wipe is performed e.g. detergent/sodium hypochlorite product, diluted according to manufacturer's instructions.
- Metal surfaces that may be damaged by bleach may be cleaned thoroughly with detergent and water and then wiped with an alcohol-impregnated wipe.

2.7. Environmental cleaning

- PPE (including a surgical mask) must be worn when cleaning areas used by people affected by gastroenteritis.
- Contaminated shared bathrooms, toilets and frequently touched surfaces have been implicated in the transmission of gastroenteritis illness. Frequent and thorough cleaning of these areas is necessary to limit the spread. This includes thoroughly cleaning frequently touched areas by completing a:
  - **2-step clean** which involves a physical clean using detergent solution followed by use of a chemical disinfectant such as a chlorine-based solution (1,000 ppm available chlorine – refer to dilution table 1)

  OR

  - **2-in-1 clean** in which a mechanical/manual cleaning action using a combined detergent/disinfectant solution or wipe is performed e.g. detergent/sodium hypochlorite product, diluted according to manufacturer's instructions. Close attention to thorough cleaning of all surfaces is required; refer to SA Health Cleaning Standard.
- Increasing the frequency of cleaning frequently touched surfaces e.g. hand rails in corridors, shared bathrooms etc. is recommended to limit transmission.
- Surfaces soiled with faeces/vomit should be cleaned with detergent and water followed by wiping with a bleach solution diluted to 1,000 ppm (refer table 1).
- Ideally, rooms of affected residents should be cleaned last, however if this is not possible clean equipment (mops, cloths) must be used prior to changing area/rooms.
- If soiling occurs in a public area with either vomitus or faecal matter the following should be adhered to:
  - remove people from the vicinity
  - any uncovered food must be discarded
  - surfaces to be cleaned with detergent and water and bleach solution as described above
  - area to be closed for at least 1 hour.

- Where possible cleaning equipment should be disposable and discarded immediately after use. If this is not possible cleaning equipment (mop heads and cloths) must be laundered in hot, soapy water and dried (air or tumble dryer) immediately after use.
- Terminal cleaning of an affected area, section or unit should be carried out 72 hours after resolution of symptoms in the last case. Beds and furniture of affected residents should be cleaned with detergent and water then wiped with a bleach solution. Blankets should be laundered.

If mattresses have been contaminated by vomit or faeces they should be steam cleaned.

Bleach solution

Household bleach sold for laundry and cleaning purposes is available as a 4 – 5% solution at the time of manufacture. Strength varies from one formulation to another and gradually decreases with long storage.

The recommended concentration of available chlorine for routine disinfection of cleaned surfaces is 1,000 ppm as this concentration has been shown to be effective against the majority of microbial pathogens.

Caution: Follow manufacturer's safety data sheets (MSDS) when handling and mixing bleach including the following precautions – mix in a well ventilated room; use PPE (eye wear and reusable utility gloves must be worn when handling and using undiluted bleach); it should not be used in spray bottles; do not mix with any other chemical. It is corrosive to metals.

Table 1: Dilution of bleach solution

The full fact sheet is available on the SA Health Environmental hygiene in healthcare webpage.

Liquid solution (sodium hypochlorite)

Strength of bleach	Dilution to achieve 1,000 ppm available chlorine		Volume of bleach to be added to 1L cold water
	Parts of bleach	Parts of water	
4%	1	39	25 ml
5%	1	49	20 ml

Tablets (chlorine-generating tablets)

Product	Active ingredient ^ per tablet	Dilution to achieve approx. 1,000 ppm available chlorine
ActichlorPlus™	53% w/w	1 tablet in 1 litre of water

Note: Milton™ (^sodium dichloroisocyanurate (NaDCC) tablets are not validated for use as a surface disinfectant and are not recommended for this purpose.

2.8. Food

- Refer also to section on hand hygiene.
- Only catering staff should have access to the kitchen during the outbreak.
- If catering staff become unwell, discard any food prepared by the unwell staff member.
- Staff who prepare or handle food with diarrhoea and/or vomiting should not return to their usual food handling duties until at least 48 hours after their symptoms have ceased.

- Staff who have been in contact with infected persons should not prepare or serve food to unaffected persons.
- Ensure all appliances, work benches and equipment are effectively sanitised.
- Communal dining areas should be closed during an outbreak. If this is not possible then ensure residents are encouraged to wash or use an ABHR before entering and that the area is thoroughly cleaned and disinfected after each use.
- Ensure non-catering staff have minimal contact with food.
- All utensils and dinnerware are to be handled in the usual manner, using either detergent and hot water or dishwasher.
- Air drying of dishes is preferable to towel drying.

2.9. Soiled linen

- Appropriate PPE must be worn when handling soiled linen.
- Ensure minimal handling of soiled linen and clothes to avoid microbial contamination of staff and the air. Soiled linen should be placed immediately in collection bags with addition of leak proof plastic bag as indicated.
- The practice of hosing off gross soiling from clothing and linen prior to laundering is not recommended. However if this is the only available option then gross soiling from clothing/ linen prior to laundering should be done away from resident facilities and to be performed with extreme care. The wearing of PPE including full face protection, gowns and gloves is essential for this procedure.
- Transport used linen in an enclosed bag; place linen bag in a plastic outer bag if wet or if leaking is anticipated.
- Linen should be laundered in accordance with AS/NZS 4146:2000 *Laundry Practice*.

3. Steps for collecting faecal specimens

Specimen collection for bacteria, virus and parasitic detection should begin immediately.

- Send all specimens to your nominated diagnostic laboratory. Where possible, give the laboratory prior notice of increased cases of gastroenteritis in the facility.
- Collect specimens from several unwell residents and staff. The number required may vary depending on the size and duration of the outbreak, and likely causative organism.
- Collect specimens during the acute stage of the illness. Viral excretion is greatest during the phase that stools are liquid or semi solid. Staff should wear, if appropriate, PPE when collecting specimens.
- Collect a sufficient quantity (10 – 20ml) of specimen in a stool or urine container. A useful method to obtain faecal specimens is to place a disposable plastic container inside the toilet or commode before use by a resident. Faecal matter can also be collected from incontinence pads using a disposable spoon or spatula. Some laboratories will not test formed faecal specimens.
- Refrigerate specimens in a designated area at 4ºC, (if specimen fridge is not available a chilled cooler can be utilised) and arrange transportation to the laboratory as soon as possible. During transportation specimens should be bagged, sealed and kept on ice or in a refrigerated container.

- Request the following tests* for every specimen -
  - MC+S (Microscopy, culture and sensitivity)
  - Viruses including norovirus, PCR.

  * if the above tests are negative, and the outbreak continues, then testing for *C.difficile* toxin should be considered.
- Mark each request form and specimen **URGENT** and clearly label with all client details. Include the facilities' name and in the clinical notes field write, 'increased cases of gastroenteritis observed in the facility'.
- Some pathogens, such as norovirus, can also be detected in vomitus. The yield is better from faeces than vomitus, making it preferable to obtain a faecal specimen, however if obtaining a faecal specimen is not possible then a vomitus specimen can be taken instead.

PLEASE NOTE - If results are reported as positive for a notifiable gastrointestinal pathogen the treating doctor is legally required to notify CDCB on 1300 232 272 or https://extapps2.sahealth.sa.gov.au/CDCB-Notify/.

4. References

4.1. Guidelines and standards

- Guidelines for the Public Health Management of Gastroenteritis Outbreaks due to Norovirus or suspected Viral Agents in Australia. Communicable Disease Network Australia. 2010. Available at https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-norovirus.htm
- Centers for Disease Control and Prevention MMRW. Updated Norovirus Outbreak Management and Disease Prevention Guidelines. Vol. 60/No.3. March 4, 2011
- National Health and Medical Research Council, Ed. (2019). Australian guidelines for the prevention and control of infection in healthcare. Canberra: Commonwealth of Australia. Available at https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019
- Standards Australia AS/NZS 4146:2000 *Laundry Practice*
- Australian Government Aged Care Quality and Safety Commission Aged Care Standards. Available at https://www.agedcarequality.gov.au/providers/standards

4.2. Resources

- Australian Government. Department of Social Services. Gastro-Info – Gastroenteritis Kit for Aged Care including the Outbreak Coordinator's Handbook. Available at https://www.health.gov.au/resources/collections/gastro-info-gastroenteritis-kit-for-aged-care
- Communicable Disease Control Branch, Department of Health, Government of South Australia You've Got What? Prevention and Control of infectious and Notifiable diseases in Children and Adults. Available at http://www.sahealth.sa.gov.au/youvegotwhat
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- SA Health Guideline to dilution for chlorine-based disinfectant solutions. Available at https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+programs+and+practice+guidelines/infection+and+injury+management/healthcare+associated+infections/prevention+and+management+of+infections+in+healthcare+settings/environmental+hygiene+in+healthcare

5. Appendices

- Appendix 1 Common Causes of Gastrointestinal Illness
- Appendix 2 Gastroenteritis outbreak management guide
- Appendix 3 Infection control measures checklist
- Appendix 4 Alert notices and posters
- Appendix 5 Forms and fact sheets

6. Document Ownership & History

Document developed by: Communicable Disease Control Branch
Department for Health and Wellbeing

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Approval Date	Version	Who approved New / Revised Version	Reason for Change
07/05/2021	V2.3	Director, Communicable Disease Control Branch	Minor editing and amended the specimen collection recommendation, Appendices 2 and 5
22/01/21	V2.2	Acting Director, Communicable Disease Control Branch	Update in align with the National IC guidelines, 2019, appendix 1 table and resources
18/09/19	V2.1	Director, Communicable Disease Control Branch	Minor updates and formatting
7/03/16	V2.0	Director, Communicable Disease Control Branch	Content and references updated
18/03/14	V1.1	Director, Communicable Disease Control Branch	Minor changes, references updated & insertion into new template
1/08/12	V1.0	Director, Communicable Disease Control Branch	Original approved version.

Appendix 1 Common Causes of Gastrointestinal Illness

Note:- Duration of illness may be extended depending on several factors, e.g. age, immuno-compromising conditions

Causative organism	Incubation Period (time between becoming infected and developing symptoms)	Signs and Symptoms	Typical duration of illness	Transmission	When is the outbreak over?
Bacillus cereus	1-16 hours	Vomiting, diarrhoea, fever or all symptoms	*24 hours*	Foodborne	• Food source has been identified and/or eliminated. • No new cases in last 48 hours
Campylobacter	1-10 days	Diarrhoea, mild fever and stomach cramps. Vomiting not common	*2-14 days*	Food or water borne; person to person (rarely)	• Food or water source has been identified and/or eliminated. • No new cases for 3 weeks
Clostridiodes difficile	2-3 days	Ranges from mild, self-limiting diarrhoea to a serious form of the disease, known as pseudomembranous colitis Vomiting not common	*Days to weeks*	Faecal/oral	• On advice from CDCB
Clostridium perfringens toxin	6-12 hours	Watery diarrhoea, nausea, abdominal cramps; vomiting and fever is rare	*24 hours*	Foodborne	• Food source has been identified and/or eliminated. • No new cases in last 48 hours
Giardia	3-25 days	May be a variety of symptoms including abdominal cramps, diarrhoea, excessive gas, fatigue, floating greasy stools	*May last for several weeks if not treated*	Person to person; water borne; foodborne (rarely)	• Water (or food) source has been identified and/or eliminated • No new cases for 2 weeks
Norovirus (viral gastroenteritis)	12-48 hours	Nausea, vomiting, watery, large-volume diarrhoea, fever rare	*24-72 hours*	Person to person; food or water borne	• No new cases for 3 days (72 hours) after cessation of symptoms in last case.
Rotavirus	24-72 hours	Vomiting, watery diarrhoea, low-grade fever. Infants and children, elderly, and immunocompromised are especially vulnerable	*3-8 days*	Person to person	• No new cases for 7 days
Salmonella spp.	6-72 hours	Diarrhoea, fever, abdominal cramps, sometimes vomiting. Diarrhoea may be bloody	*4-7 days*	Foodborne; person to person	• Food source has been identified and/or eliminated • No new cases for 3 weeks
Shigella spp.	1-3 days	Abdominal cramps, fever, and diarrhoea. Stools may contain blood and mucus	*4-7 days*	Person to person; foodborne	• Food source has been identified and/or eliminated • No new cases for 2 weeks
Shiga toxin producing *Escherichia coli* (STEC)	2-10 days	Diarrhoea, abdominal cramps. Diarrhoea may be bloody. Vomiting can occur but fever is rare. Young children and the elderly are especially vulnerable	*2-7 days*	Foodborne; person to person	• Food source has been identified and/or eliminated • No new cases for 2 weeks
Staphylococcus aureus (toxin)	1-8 hours	Sudden onset of severe nausea and vomiting, abdominal cramps. Diarrhoea and fever may be present	*24-48 hours*	Foodborne	• Food source has been identified and/or eliminated • No new cases for 12 hours

Appendix 2 Gastroenteritis outbreak management guide

TASK	ACTION / INFORMATION
Gastroenteritis outbreak suspected?	• Notify the Infection Control Coordinator and senior nursing staff on duty • Refer to your facility's *Guidelines for managing gastroenteritis outbreaks*
Implement additional infection control precautions	
Confirm outbreak	• A gastroenteritis outbreak is defined as 2 or more cases^ who have vomiting or diarrhoea over a 24 hour period • List cases (staff & residents) daily ("line list"- see examples pages 20-23) • Use separate forms for staff & residents
Collect faecal specimens	• Observe infection control practices (PPE, hand hygiene) when collecting • Collect several specimens from different residents & staff • Label specimens & complete pathology request form • Ensure correct tests are requested: MC & S, viruses including norovirus, PCR • Copy to CDCB on the request form
Nominate an Outbreak Coordinator	Name ..... Contact No: .....
Inform	• Medical officers, staff & families • Visitors (signage required - see p.16) # Consider contacting the CDCB Tel: 1300 232 272
Document & monitor outbreak	Update line list / provide reports to relevant staff
End of outbreak	• When no new cases for 72 hours • *OR* as indicated in table in Appendix 1

 # Report the following events to CDCB (1300 232 272) within 24 hours:

- The death of a resident or staff member
- A food handler develops gastroenteritis
- Sudden increase in number of cases over a 24 hour period
- Receipt of pathology result identifying a potential food-borne agent (see Appendix 1)

^ Cases are defined as:

- Three or more loose stools or bowel movements in a 24-hour period that are different to normal

AND / OR

- Two or more episodes of vomiting in a 24-hour period.

Appendix 3 Infection control measures checklist

HAVE YOU?

- ☐ Informed all staff, visitors and residents of the situation and what they need to do?
- ☐ Ensured all staff with symptoms compatible with gastroenteritis are excluded from work until at least 24 hours (or 48 hours for food handlers) after resolution of their symptoms?
- ☐ Allocated dedicated staff to care for unwell residents, wherever possible?
- ☐ Provided all staff with information and training in Infection Control Precautions?
- ☐ Ensured that all residents have their hands washed after going to the toilet, before meals and after any episode of diarrhoea or vomiting?
- ☐ Separated well residents from ill residents, wherever possible, for at least 48 hours after resolution of symptoms?
- ☐ Increased the frequency of cleaning and disinfection of bathroom facilities and frequently touched surfaces?
- ☐ Avoided transferring residents from affected areas to other institutions whilst cases of gastroenteritis are occurring, or, if a transfer is necessary, ensured receiving institution has been notified of the outbreak?
- ☐ Posted relevant signs at appropriate locations throughout the facility?
- ☐ Asked visitors who report any symptoms to avoid visiting at least 24 hours after symptoms cease?
- ☐ Ensured all staff and visitors can access facilities and equipment to wash their hands before and after all resident contact?
- ☐ Ensured sufficient soap and/or alcohol based hand rubs or gels, and hand-drying facilities are available?
- ☐ Provided sufficient gloves, gowns, aprons, masks, eye and/or face protection and ensured that they are easily accessible?
- ☐ Ensured cleaning and other relevant staff are aware of the correct cleaning procedures and the importance of handwashing?
- ☐ Ensured catering staff are aware of the precautions required in the food service area and the importance of handwashing?
- ☐ Ensured all staff are aware of the precautions required when handling soiled items including linen?
- ☐ Ensured laundry staff are aware of the correct laundering procedures and the importance of handwashing?
- ☐ Advised staff on how to collect clinical specimens during an outbreak, refer to the Appendix 3: CDNA Guidelines for the public health management of gastroenteritis outbreaks due to norovirus or suspected viral agents in Australia https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-norovirus.htm/$File/norovirus-guidelines.pdf

Appendix 4: Alert notices and posters

See examples of notices and posters on the following pages:

Notices

- Front door of facility alert
- Staff alert
- Visitors alert (for entrance of facility)

Posters

- Visitor/contractor reporting
- Hand washing poster (general)
- Hand washing poster (entering a room)
- Hand sanitiser poster
- Designated restroom poster

Note - please contact the CDCB Infection Control Service via HealthICS@sa.gov.au for the electronic version of the original notices and posters

Example: Front door of facility alert notice

ATTENTION

Our facility currently is experiencing a gastroenteritis outbreak.

To protect yourself and others, please wash and dry your hands when entering and leaving the premises.

Thank you for your cooperation.

Example: Staff alert notice

ATTENTION STAFF

Our facility is currently has experiencing a gastroenteritis outbreak.

If you are unwell you must let your manager know immediately.

You must stay away from work until at **least 24 hours** after symptoms have stopped.

Thank you for your cooperation.

Example: Visitors alert notice

ATTENTION VISITORS

We are experiencing an outbreak

Please speak with a staff member prior to your visit.

Thank you for your cooperation.

Example: Visitor/contractor reporting poster

Thank you for your cooperation.

Example: Hand washing poster (general)

Wash your hands

We are experiencing an outbreak.

To protect yourself and others please wash and dry your hands thoroughly and often.

Thank you for your cooperation.

Example: Hand washing poster (entering a room)

Wash your hands before and after entering the room

Thank you for your cooperation.

Example: Hand sanitiser

Please use hand sanitiser before and after entering the room. Thank you for your cooperation.

Example: Designated bathroom facilities

This toilet has been reserved for residents who are experiencing symptoms of gastroenteritis

Thank you for your cooperation.

Appendix 5: Forms and fact sheets

See supporting forms and fact sheets are on the following pages

Notices

- Resident outbreak register (Line list)
- Staff outbreak register (Line list)

Fact sheets

- Viral gastroenteritis frequently asked questions
- Gastroenteritis visitor information sheet

Gastroenteritis outbreak register: Resident line list recording of cases

[Please record the summary for monitoring progress of the outbreak and record keeping purposes]

Facility Details

Facility name: .....

Address:

Facility contact

Facility manager: .....

Tel: **Email:**

Outbreak details

Outbreak start date: / / **Form completion date:** / /

Name of unit / house / area	Type of unit	Total number of residents in unit
	☐ Low care ☐ High care	
	☐ Low care ☐ High care	
	☐ Low care ☐ High care	
	☐ Low care ☐ High care	
	☐ Low care ☐ High care	
	☐ Low care ☐ High care	

Please complete table below for all areas of your facility and send to: .....

Recording of unwell resident details on the next page

Gastroenteritis outbreak register: Resident line list recording of cases

[Please record details of all cases for monitoring progress of the outbreak and record keeping purposes]

Facility Details

Facility name:

Outbreak details

Outbreak start date: / / **Form completion date:** / /

Resident details					Symptoms		Specimen / diagnosis			Status	
Name of resident	M/F	Date of Birth	Unit Name	Room No.	Onset date (dd/mm)	Symptom type #	Specimen sent date (dd/mm)	Lab *	Results ^	Hospital-ised date (dd/mm)	Duration of vomiting &/or diarrhoea
John Citizen	*M*	*22/12/35*	*G1*	*24*	*22/03*	*D, V*	*25/03*	*SAP*	*Norovirus*	*26/03*	*2 days*

 # Symptoms (D=diarrhoea; V=vomiting; D&V=both)

*** Laboratory e.g. (AB=Abbotts Laboratory; ACL=Australian Clinical Labs; C=Clinpath; SAP=SA Pathology;)**

^ Refer to Appendix 1 – table of common causes of gastrointestinal illness

Gastroenteritis outbreak register: Staff line list recording of cases

[Please record the summary for monitoring progress of the outbreak and record keeping purposes]

Facility Details

Facility name:

Address:

Facility contact

Facility manager:

Tel: **Email:**

Outbreak details

Outbreak start date: / / **Form completion date:** / /

Staff category	Total number of staff currently employed in your facility	Staff category	Total number of staff currently employed in your facility
Registered nurse		Maintenance	
Enrolled nurse		Cleaner	
Carer/nurse assistant		Volunteer	
Agency staff		Other (*please specify*)	
Kitchen			

Please complete table below for all areas of your facility and send to:

Recording of unwell staff details on the next page

Gastroenteritis outbreak register: Staff line list recording of cases

[Please record details of all cases for monitoring progress of the outbreak and record keeping purposes]

Facility Details

Facility name:

Outbreak details

Outbreak start date: / / **Form completion date:** / /

Staff details					Symptoms		Specimen / diagnosis			Status	
Name of resident	M/F	Date of Birth	Position	Assigned work unit name.	Onset date (dd/mm)	Symptom type #	Specimen sent date (dd/mm)	Lab *	Results ^	Hospitalised date (dd/mm)	Duration of vomiting &/or diarrhoea
Sue Blogs	*F*	*5/03/73*	*RN*	*G1*	*24/03*	*V*	*27/03*	*SAP*	*Norovirus*	*NA*	*9*

 # Symptoms (D=diarrhoea; V=vomiting; D&V=both)

*** Symptoms (AB=Abbotts Laboratory; ACL=Australian Clinical Labs; C=Clinpath; SAP=SA Pathology)**

^ Refer to Appendix 1 – table of common causes of gastrointestinal illness

Viral gastroenteritis

What is viral gastroenteritis?

- Viral gastroenteritis is an infection of the bowel caused by one of a number of viruses (e.g. rotaviruses, astroviruses, adenoviruses and noroviruses).
- Symptoms are usually mild, including: fever, nausea, vomiting, stomach cramps and diarrhoea lasting 1 or 2 days.
- Spread is through contamination of hands, objects or food with infected faeces. The virus is then taken in by the mouth. Viral gastroenteritis may also be spread through coughing and sneezing.

What are noroviruses?

- Noroviruses are a group of viruses that can cause gastroenteritis. The illness can also be referred to as “winter vomiting”, “stomach flu”, “gastro”, “gastric flu” and “viral gastroenteritis”.
- Other names historically used for noroviruses are “Norwalk-like viruses” (NLVs) or human caliciviruses or small round structured viruses (SRSVs).

Noroviruses are thought to be the most common cause of gastroenteritis in residential care facilities

What are the clinical features of norovirus infection?

- Symptoms usually include nausea, vomiting, stomach cramps, and diarrhoea. General body aches, tiredness, headache and mild fever can also be present.
- Vomiting and diarrhoea generally last 1 to 2 days.
- Laboratories can often detect the virus in a faecal (stool) specimen.

Where are noroviruses found?

- Noroviruses are only found in humans.
- All age groups can be affected.

How are noroviruses spread?

- Noroviruses are easily spread from person to person.
- Noroviruses are often associated with outbreaks that frequently occur in aged care facilities, cruise ships and community settings. Single cases of the infection can also occur.
- Spread is mainly through contact with vomitus (including air borne particles) or faeces (stool) from an infected person. Hands, objects or food can become contaminated and the virus is then transferred to the mouth from the hands.
- Food and drink may be contaminated by infected food handlers who do not practise good personal hygiene.

What is the incubation period of norovirus infection (time between becoming infected and developing symptoms)?

> Usually 24 to 48 hours, but can range between 10 to 50 hours.

What is the infectious period (time during which an infected person can infect others)?

> During the course of the illness and for at least 24 hours after symptoms have disappeared.

Can a person who has had norovirus infection be re-infected? (Susceptibility)

> Yes, it is likely that immunity or protection lasts only a few months therefore people may be repeatedly infected during a lifetime.

Do staff need to be excluded from work?

> Yes, all staff with vomiting and/or diarrhoea should stay at home for at least 24 hours after vomiting and/or diarrhoea have ceased. If the person is a food handler they should stay home for at least 48 hours.

> If the gastroenteritis is known or suspected to be caused by norovirus, the exclusion period is 48 hours.

What measures should apply to infected residents and visitors?

> Separate residents with symptoms from well people for the duration of the illness and for at least 24 hours until after vomiting and diarrhoea have ceased.

> Relatives or friends with vomiting and/or diarrhoea should be advised to stay away from the aged care facility for at least 24 hours after vomiting and diarrhoea have ceased.

> Relatives and friends should be advised of the consequences of contact with an infected person, and a suggestion made to reschedule the visit.

What other measures prevent the spread of norovirus?

> Practice good personal hygiene, especially frequent and thorough hand washing with soap and water.

> Clean visibly contaminated environmental surfaces with a detergent and then disinfect with a household bleach product.

> Handle soiled clothing with care and wash in detergent and hot water.

> Observe safe food handling practices.

For more information

Communicable Disease Control Branch
Telephone: 1300 232 272
www.sahealth.sa.gov.au

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Government of South Australia
SA Health

Fact sheet

Gastroenteritis Visitor Information Sheet

Background

There have been a number of cases of gastroenteritis in this facility. We have implemented the Guidelines provided by the Department for Health and Wellbeing, Communicable Disease Control Branch, in order to control any further spread of the disease.

Infection control measures

Staff have put several measures in place to minimise the impact of this outbreak, and some of these include:

- special cleaning in some areas
- the use of gloves and gowns
- restricting some activities of affected residents
- special staffing allocation
- education.

The illness is self-limiting but in the meantime, we are asking for your assistance to help us control and prevent further spread of the illness. You can help by following these basic instructions:

Please wash hands before and after visiting

This should be done in the following manner:

- use an alcohol-based hand rub (if hands are visibly clean)

OR

- wash hands for a minimum of 20 seconds, ensure all surface of the hands are thoroughly washed, use the soap provided, thoroughly rinse hands under running water, pat hands dry with paper towel, then discard, turn the taps off with a fresh paper towel, and then discard.

If you develop symptoms

If you experience any symptoms of gastroenteritis we ask that you do not visit until 24 hours after your symptoms have resolved.

We appreciate your concern and cooperation regarding this problem; please feel free to discuss any queries you may have with facility staff.

For more information

Communicable Disease Control Branch
Telephone: 1300 232 272
www.sahealth.sa.gov.au

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SA Health

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