GASTROENTERITIS: INFECTION CONTROL MANAGEMENT - CHW

POLICY AND PROCEDURE©

DOCUMENT SUMMARY/KEY POINTS

- Gastroenteritis is a common acute intestinal communicable infection which causes diarrhoea and/or vomiting, sometimes with fever. It is usually viral, but sometimes bacterial or parasitic.
- Contact precautions are an effective way to terminate the transmission of the disease. Hand hygiene is important to stop the spread to the healthcare worker, other patients and visitors. Gloves must be worn when handling body fluids.
- When Norovirus infection is likely on clinical/epidemiological grounds (page 7), a surgical mask should be worn when caring for vomiting patients.
- Cohort and isolate all symptomatic patients and alert Infection Control. Infection Control will notify the Public Health Unit if there are ≥2 patients on a ward who have developed gastroenteritis after admission.
- Patients with Gastroenteritis should remain in the ward most appropriate to their medical condition where they can be best cared for. Patients with Gastroenteritis must not share a room or bathroom with patients who do not have Gastroenteritis.
- Family, visitors and staff with Gastroenteritis should leave the ward immediately and not return to work/ward until 48 hours after their last episode of vomiting or diarrhoea.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

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This Policy/Procedure may be varied, withdrawn or replaced at any time. Compliance with this Policy/Procedure is mandatory.

CHANGE SUMMARY

- Changes made on pages 10 - 13.

READ ACKNOWLEDGEMENT

- All Medical and Nursing staff working in clinical areas should read and acknowledge this document.

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Introduction

Gastroenteritis is a common acute intestinal communicable infection which causes vomiting, diarrhoea and fever. There are many causes of gastroenteritis worldwide. It is usually viral, but sometimes bacterial or parasitic. Community outbreaks are sporadic and seasonal. [1]

What causes gastroenteritis?

Viral

Rotavirus is an important cause of both community-associated and nosocomial gastroenteritis in infants and younger children, characterised by vomiting, fever and watery diarrhoea. The incubation period is approximately 1-3 days, and infectivity is high, principally via the faecal-oral route. Treatment is supportive, principally oral or intravenous rehydration. Childhood vaccination is effective at reducing the individual's risk of disease as well as impacting on community transmission.

Norovirus is one of the most important agents of gastroenteritis outbreaks in developed countries. Low infectious dose, high infectivity, short incubation period, stability in the environment and dispersal via vomitus render it an ideal agent for outbreaks in confined environments. The incubation period is usually 24 to 48 hours and symptoms last 24 – 60 hours, chiefly acute vomiting and watery diarrhoea with abdominal cramps, occasionally with low-grade fever. There is a specific Norovirus: Infection Control and Management Policy.

Other viral causes of gastroenteritis, such as adenovirus and astrovirus, also exist. Some viral causes cannot be diagnosed in our laboratory.

Bacterial

The many serotypes of ***Salmonella enterica*** usually cause an inflammatory enterocolitis, often with abdominal pain and fevers, which may be complicated by septicaemia and extra intestinal infection. Transmission is usually by ingestion of contaminated food, with an incubation period of 6-72 hours (usually 12-36 hours), although human-to-human faecal-oral transmission may also occur. Treatment is generally supportive, but antibacterial therapy guided by in-vitro susceptibilities may be considered in the very young and/or immunosuppressed.

Campylobacter jejuni is another common bacterial gastroenteritis usually spread by ingestion of contaminated food (especially chicken and dairy products) or by contact with infected animals, especially puppies and kittens. Human-to-human transmission is uncommon. After an incubation period of 1-10 (usually 2-5) days, the illness is characterised by diarrhoea, fever, abdominal pain, nausea and sometimes vomiting. It is frequently over within 5 days and rarely lasts more than 10 days. Antibiotics are usually not required, though erythromycin or ciprofloxacin may be of some benefit in severe disease or in immunocompromised hosts.

Escherichia coli strains which cause diarrhoeal illness generally fall into one of 6 groups: Enterohaemorrhagic (Shiga toxin producing *E. coli*), Enterotoxigenic, Enteroinvasive, Enteropathogenic, Enteroaggregative, and diffuse-adherent *E. coli*. Most of these cannot be identified with routine laboratory techniques, and cause self-limiting diarrhoeal diseases such

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as traveller's diarrhoea. The exception is Shiga toxin-producing *E. coli* (EHEC) which is associated with bloody diarrhoea and, occasionally, haemolytic-uraemic syndrome (HUS). EHEC infection usually occurs by ingestion of contaminated food or water, but person-to-person transmission may also occur. The incubation period is 2-8 days. The role of antibiotics is unclear, and there is some evidence that they may actually precipitate HUS. Specific testing of stool specimens is required if this diagnosis is suspected (request "EHEC testing").

Clostridium difficile is a common cause of hospital-onset diarrhoea in patients receiving antibiotics, but community-onset disease is less often seen. It is caused by *C. difficile* strains capable of producing toxins A and/or B. Severe infections may progress to fulminant colitis and toxic megacolon. A specific Clostridium difficile Infection Control Management Policy is available.

Yersinia enterocolitica is a less common bacterial pathogen, which causes acute febrile diarrhoea (particularly in young children), enterocolitis, mesenteric adenitis, and occasionally rash or post infectious arthritis. Infection by contaminated food (especially pork) and water is most common, with an incubation period of about 3-7 days. Secondary human cases seem to be rare.

Shigella spp. are the cause of bacillary dysentery, which is uncommon in developed countries and characterised by fever, nausea, and inflammatory – often bloody – diarrhoea. Due to the low infectious dose of this organism, person-to-person spread is common, and secondary attack rates within households are high. The incubation period is usually 1-3 days but occasionally as long as 1 week. Antibiotics reduce the duration and severity of the illness as well as lowering infectivity.

Protozoan

Giardia lamblia (G. duodenalis, G. intestinalis) is one of the most common causes of subacute or chronic parasitic diarrhoea and malabsorbtion. Person-person faecal-oral spread is most common, especially in day-care centres, and infection via contaminated water may also occur. The incubation period is usually 3-10 days but may be as long a 1 month. Antibiotics treat symptoms as well as reducing infectivity to others.

Other occasional causes of parasitic diarrhoea include ***Cryptosporidium parvum,*** which causes a prolonged watery diarrhoeal illness, and ***Entamoeba histolytica*** which is the cause of amoebic dysentery.

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Command and Control

Responsibility for implementation of this policy is the direct responsibility of appropriate clinical line managers caring for affected patients.

- The clinical line managers will consult with the Infection Control Team regarding appropriate patient placement and infection control procedures.
- If there is no policy on a particular issue or the policy needs updating then there needs to be further discussion between clinical line managers, infection control, microbiology and the Director of Clinical Operations to develop a consensus agreement based on best evidence. If a dispute arises about policy it is to be referred to the Chief Executive for resolution.

Gastroenteritis infections are not mandated as a reportable infection to Public Health Units unless there is:

> *Gastroenteritis in an institution amongst people of any age and food borne illness in 2 or more related cases should be notified to the Public Health Unit.*

In practice, 2 or more cases of hospital-onset gastroenteritis on a single ward should trigger this response. For more information, refer to the following:

- **Notification of Infectious Diseases under the Public Health Act 1991** (NSW Health Information Bulletin IB2013_010): http://chw.schn.health.nsw.gov.au/o/documents/policies/policies/2012-9064.pdf
- **Children and Infants with Gastroenteritis - Acute Management** (NSW Health Guideline GL2014_024): http://www0.health.nsw.gov.au/policies/gl/2014/pdf/GL2014_024.pdf
- **Gastroenteritis in an Institute** (NSW Health publication): http://www.health.nsw.gov.au/Infectious/controlguideline/Pages/gastro.aspx

A Reportable Incident Brief (RIB) will be sent to NSW Department of Health on any potential media interests or problems. This is currently the responsibility of the Executive Assistant to the Chief Executive.

The Microbiologist or Infection Control Practitioner will notify the Director of Clinical Operations of identification of any known clusters of hospital-onset gastroenteritis. The Director of Clinical Operations will in turn notify the Chief Executive.

A report on management of any new gastroenteritis clusters will be made to the next Infection Control Committee meeting. The Infection Control Committee reports quarterly to the Health Care Quality Committee where this information is tabled for information.

Mode of Transmission

Organisms are transmitted primarily through the faecal-oral route, either by consumption of faecally contaminated food or water or by direct person-to-person spread. Environmental and fomite contamination may also act as a source of infection, contaminating surfaces or entering the oral mucosa and being swallowed. In the case of Norovirus, aerosolised virus particles can be swallowed by an exposed person.

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Diagnosis of Gastroenteritis

The diagnosis of Gastroenteritis is primarily a clinical one, based on the presence of vomiting and/or diarrhoea with no other evident cause. Isolation should not await the results of laboratory testing, and in many cases no clear pathogen will be identified.

As Norovirus has special isolation requirements compared with other causes of gastroenteritis (see Norovirus: Infection Control and Management Policy) a high level of suspicion for this pathogen should be maintained. In addition to microbiological tests of faecal specimens, several epidemiological criteria have been proposed for use in determining whether an outbreak of gastroenteritis is of viral origin. Kaplan's[7] criteria for this purpose are as follows:

1. a mean (or median) illness duration of 12 to 60 hours,
2. a mean (or median) incubation period of 24 to 48 hours,
3. more than 50% of people with vomiting and
4. no bacterial agent previously found

Management of Gastroenteritis

Management of children with gastroenteritis should be as per NSW Health Guideline GL2014_024 'Children and Infants with Gastroenteritis – Acute Management': http://www0.health.nsw.gov.au/policies/gl/2014/pdf/GL2014_024.pdf

The guideline provides management details such as diagnosis, rehydration, IV fluid therapy, observations and investigations. A **quick reference management algorithm** is available: http://www0.health.nsw.gov.au/policies/gl/2014/pdf/GL2014_024.pdf#page=9

Prevention

Prevention of gastroenteritis is primarily by the provision of safe food and water, and high levels of hand hygiene.

An effective rotavirus vaccine is available.

Clostridium difficile is prevented by avoiding unnecessary, or excessively prolonged, broad spectrum antibiotic use.

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Infection Control Precautions

Contact Precautions

- Contact precautions are an effective way to terminate the transmission of the disease, and must be maintained until the patient has been asymptomatic for 72 hours.
- Hand hygiene is essential to stop the spread to the healthcare worker, other patients and visitors.
- Gloves must be worn when handling body fluids or blood.

If there is suspicion of Norovirus infection surgical masks should be worn when caring for vomiting patients or cleaning up vomitus or profuse diarrhoea. The specific Norovirus: Infection Control and Management Policy should be consulted.

Isolation

- Cohort and isolate all symptomatic patients (parents and carers with symptoms should also be isolated)
- Alert the hospital Infection Control team if there are any patients with symptoms of gastroenteritis.
- Infection Control will notify the Public Health Unit if there are ≥2 patients who have developed gastroenteritis after admission on a single ward.

Room Placement

Patients with Gastroenteritis should remain in the ward most appropriate to their medical condition where they can be best cared for. Patients with Gastroenteritis must not share a room or bathroom with patients who do not have Gastroenteritis .The patient's room must have a staff hand wash basin. Adequate supplies of gloves and alcohol 'hand rub' are required inside and outside the room.

Patient Activity Outside Room

- The child cannot visit the common food outlet areas.
- The child cannot visit the Starlight Room.
- The child cannot visit Ronald McDonald House.
- The child cannot attend the schoolroom.
- The child cannot visit other inpatients.
- Activities and school can be organised in the room.
- All other activities must be negotiated with Infection Control.

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Personal Protective Equipment (PPE)

Staff or Parents/Carers

- Gloves must be worn when handling body fluids or blood.
- If there is suspicion of Norovirus infection, surgical masks should be worn when caring for vomiting patients or cleaning up vomitus or faeces.

Patient care equipment

- Must be dedicated for the **sole purpose** of the patient.
- The patient should have his/her own equipment such as stethoscopes, sphygmomanometers, thermometers and pans.

Cleaning and Linen

- Gloves should be worn by people cleaning areas contaminated by faeces or vomitus.
- Cleaning is performed as per NSW Health cleaning policy.
- All staff must perform hand hygiene immediately prior to accessing the ward's clean linen dispensary to prevent contaminating clean linen.
- If linen is removed from the clean linen trolley it must not be replaced back onto the trolley, but be placed in to the used linen skip.
- PPE should be worn by staff when handling soiled linen from an infected patient, regardless of the child being in the bed or not.
- Used linen, whether visibly soiled or not, should not be shaken.
- Used linen should be bagged and tied at the point of generation. Care needs to be taken not to overfull the linen skip. It should not be filled more than ¾ full so that it can be secured safely.
- The laundering of used linen should be consistent with Australian Standard AS 4146: Laundry Practice.

Parents and Carers of admitted patients

Family and Visitors

- Sensible management of family and visitors can assist in controlling outbreaks.
- Visitors should be restricted to immediate adult family members. Family and visitors should be instructed on hand washing techniques.
- Children and immunocompromised individuals should be discouraged from visiting a child with Gastroenteritis.
- Family and visitors with a history of vomiting and diarrhoea at home should not visit patients until at least 72 hours after their last episode of vomiting or diarrhoea[4].

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Parents and carers of children admitted with <u>potential or proven</u> infectious diarrhoea +/- vomiting

- Must not use shared facilities in the ward for food preparation or shared recreational areas in the ward or throughout the hospital even if they themselves are asymptomatic.
    - If the parent needs to **purchase meals for themselves**, the parent can go to the providers in the hospital. They should either eat in an area isolated from people (e.g. the outdoor areas), or eat in their child's room.
    - If the parent needs food, beverages or feeding bottles from the Ward Kitchen **for their child**, they must request nurse assistance.
- Must not sleep in the parent hostel or parent rooms provided on the ward. If staying in the hospital with their child they must sleep in their child's room.
    - Any linen required by the patient or the parent must be provided by the nursing staff. Parents of symptomatic children are **not to access** the clean linen dispensary on the ward.
- Must use the toilet and bathroom facilities in the child's isolation room.

Parents and carers who have gastroenteritis symptoms

- Should be advised to stay home if possible.
- If they cannot stay home they must not use shared facilities for food preparation or shared recreational areas until asymptomatic for 72 hours.
- Must wash hands well with antiseptic hand-wash and water frequently, particularly after vomiting, after using the toilet, on leaving the patient's room, and before food or drink preparation.
- When they leave the child's room they must go straight home and not used shared Hospital facilities.
- Any linen required by the patient or the parent must be provided by the nursing staff. Parents of symptomatic children **are not to access** the clean linen dispensary on the ward.
- If there is a need to purchase meals, after the parents acute symptoms abate, the parent must liaise with the ward Nursing Unit Manager and After Hours Nurse Manager so that they can be assisted with this task while waiting for the 72 hours post resolution of symptoms to be attained.

Hospital Volunteers

- General visiting by hospital volunteers must be postponed until the patient or the symptomatic parent/carer has been symptom free for 72 hours.
- There are some circumstances in which volunteer assistance is acceptable. In this case the volunteer needs to comply with the same requirements for hand hygiene and PPE usage as staff.

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- Ward Grandparent Volunteers. can continue to work with their symptomatic child but need to comply with the same requirements for hand hygiene and PPE usage as parents.
- Book Bunker lending must be postponed until the child or the symptomatic parent/carer has been symptom free for 72 hours.
- Visitors organised by the Public Relations Department to the wards must not visit a symptomatic patient. This also must be postponed until the patient or the symptomatic parent/carer has been symptom free for 72 hours.

Eating Utensils

Meal trays and eating utensils/plates and cups are to be collected from the room by staff with care. They can be placed in the Food Services trolley to be taken down to the Food Services department so they can be washed as per Food Services policy.

After carefully placing the used meal tray on the trolley staff need to be mindful to perform hand hygiene with antiseptic wash and water in case of viral contaminants on the tray.

Pathology Specimens

A medical officer needs to order testing of a stool – faeces diarrhoea order set Liquid stools need to have C. Diff antigen and toxin PCR testing requested if the patient has been on antimicrobial therapy.

- A stool specimen needs to be collected and placed securely in to a plastic biohazard specimen bag for transport.

Staff need to be mindful that not all virus or bacterial sources of diarrhoea are able to be tested for. Symptomatic patients need to be treated as infectious regardless of the result.

Hand Hygiene important after specimen is placed in the pathology specimen transport chute.

Other Pathology Specimens – Blood Collection

- Pathology personnel must comply with Contact Precautions when entering and leaving the room.
- Seal specimen receptacles correctly and label accurately.
- Place specimen and pathology form into a plastic biohazard specimen bag for transport.
- Tourniquet is to be cleaned before use on any other patient (may be left in room for the duration of patient stay and then cleaned or discarded).

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Waste Management

- Toilets where body waste is being disposed should have the lid of the toilet closed before flushing to stop aerosols being generated.
- General waste from a Norovirus patient's room is to be placed appropriately in to the general waste receptacle. It is not to be over filled. When there is the requirement for a larger general waste bin to cope with the use of disposable gowns contact the cleaning services supervisor so that a size appropriate general waste bin can be obtained. After general working hours if the bin has got to ¾ full contact the after-hours cleaning supervisor so that appropriate action can be taken.

General Maintenance

- Routine maintenance needs to be postponed until the patient has been symptom free for 72 hours.
- Urgent maintenance can proceed with appropriate PPE wear and hand hygiene while the patient is in the acute stage of the illness.
- Contact the Infection Prevention & Control team for advice if required.

Discharge of Patient from Hospital

Discussion should take place before discharge to ensure the patient and family is fully informed about Gastroenteritis. The patient should be requested to alert staff of Gastroenteritis status if admitted to a health care facility in the near future. Children cannot be immediately discharged to Ronald MacDonald House or Bear Cottage unless 48 hours have elapsed since last episode of diarrhoea or vomiting.

Staff Management

Minimise as much as possible the circulation of staff between affected and unaffected areas. Where possible, designated staff should care for affected patients.

Staff with gastrointestinal symptoms should leave work immediately and not return to work until 48 hours after their last episode of vomiting or diarrhoea[4]. Those affected staff should seek medical advice immediately.

Food handlers should be excluded from food preparation until at least 48 hours after the symptoms have stopped[4].

Recuperating staff may shed viruses for a number of weeks after their symptoms have disappeared, therefore the importance of hand washing and personal hygiene on returning to work should be reinforced[4].

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NUMs should ensure non-essential staff should not be allowed to enter the patient care area of infected patients in order to prevent unnecessary exposure and to stop further spread of the disease[1].

Education

Staff

- Infection Control will provide education on request. *Page: 6131, 6550, 6655 or Ext 52578/ 52534*

Parent/Carer fact sheets

- **Gastroenteritis in Children:** http://www.schn.health.nsw.gov.au/parents-and-carers/fact-sheets/gastroenteritis-in-children
- **Viral Gastroenteritis:** http://www.health.nsw.gov.au/Infectious/factsheets/Pages/Viral-Gastroenteritis.aspx

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