IC.08.02 GASTROENTERITIS INFECTION OUTBREAK MANAGEMENT – REV. JULY 2016

STANDARDS

- On-going surveillance and monitoring for unusual clusters of gastrointestinal (GI) illness in patients and staff will be done to assist in early detection of possible outbreaks. Surveillance takes place prior to, during and after outbreaks.
- All health care workers (HCW) will report a suspected outbreak of infectious gastroenteritis to Infection Prevention and Control Services (IPACS) as soon as possible.
- All reports of suspected outbreaks will be investigated immediately by Infection Prevention and Control Services.
- Upon confirmation of the outbreak, an outbreak management plan will be implemented immediately in an effort to control and prevent the spread of the outbreak.

DESCRIPTION

Gastroenteritis is inflammation of the gastrointestinal tract, involving the stomach, intestines, or both; usually resulting in diarrhea, abdominal cramps, nausea and possibly vomiting. The most frequent causes are viral and bacterial. Other possible causes include parasites, toxins, food allergies, and medications.

Viruses spread from person-to-person are the leading cause of gastroenteritis in the health care setting and the community. Common viruses that cause gastroenteritis include norovirus and rotavirus. Adenovirus, sapovirus and astrovirus may also cause gastroenteritis.

Bacterial gastroenteritis can be caused by food poisoning, e.g., Staphylococcus, Shigella, Listeria, and Salmonella, but is not a common cause of transmission of gastroenteritis in the health care setting.

Clostridium difficile (C. difficile) is a spore forming bacteria that can also cause GI illness through person-to-person transmission in the health care setting.

The two major causes of death from gastroenteritis are C. difficile and norovirus.

Early detection and implementation of infection control strategies are essential to control and prevent further spread of infectious gastroenteritis in health care settings.

Definitions

GI Infection Case Definition:

- A case of probable GI infection is defined as any one of the following conditions in patients and/or staff:
  - Two or more episodes of liquid or watery stools above what is normal for the person in a 24-hour period OR
  - Two or more episodes of vomiting in a 24-hour period OR
  - One episode each of vomiting and diarrhea in a 24-hour period OR
  - One episode of bloody diarrhea in a patient who does not have inflammatory bowel disease OR
Positive laboratory confirmation of a known enteric pathogen with at least one symptom of a GI infection (e.g., vomiting, abdominal pain/tenderness, diarrhea, bloody stools)

C. difficile Case Definition:
- Presence of diarrhea (three liquid or loose stools [Bristol Stool Chart 6 or 7] within a 24-hour period) AND
- Laboratory confirmation of the presence of C. difficile toxin A and/or B (positive toxin, or culture with evidence of toxin production, or detection of toxin genes) AND
- First positive CDI laboratory result within 8 weeks

Note: Care must be taken to rule out non-infectious causes of symptoms (e.g., laxative use, new medications, medication side effect, diet, other medical conditions causing diarrhea or vomiting).

GI and C. difficile Infection (CDI) Trigger Alert:
Meeting the GI or CDI Trigger threshold will alert of increased GI or CDI activity on the unit and will help prevent an outbreak.

**GI Trigger Definition:**
- One new lab confirmed health care-associated (HCA) case.

**CDI Trigger Threshold Definition:**
- BCCH Oncology units - 3 cases identified in a unit within 7 days.
- All other units at BCCH, SHHCC, BCW, BCMHAS CW sites - 2 cases identified in a unit within 7 days.

IPACS will initiate a Trigger Alert if the GI or CDI trigger threshold is met on a unit. This can be found in Appendix C. IPACS will notify the unit and environmental services, if a Trigger Alert has been declared and provide the unit with instructions on appropriate management (i.e. enhance cleaning, decluttering, education, etc.).

The Trigger Alert will be declared over when deemed appropriate by the ICO.

If the CDI trigger threshold is met, IPACS will complete the CDI Trigger Threshold Investigation Form.

**GI Outbreak Definition:**
- Three or more health care-associated cases within 4 days with evidence of an epidemiological link to current admission.
- The Infection Control Officer (ICO) in conjunction with the Medical Health Officer (MHO) will declare the outbreak. The outbreak may be declared based on clinical signs and symptoms with or without laboratory confirmation.

**Outbreak of CDI:**

**CDI Outbreak Definition:**
- Three or more health care-associated cases within 7 days with evidence of an epidemiological link to current admission.
OUTBREAK MANAGEMENT

IPACS monitors CDI activity on the units. When the trigger threshold is met, this will alert IPACS that it may be necessary to initiate an outbreak investigation.

If a unit meets the CDI outbreak definition, IPACS will notify the Medical Health Officer (MHO) to determine if there is an outbreak. The MHO will assess the case histories and situation in conjunction with IPACS and will provide direction on management.

If it is determined that there is an outbreak, the ICO, in conjunction with the MHO, will declare the outbreak and provide recommendations on outbreak control.

GASTROENTERITIS OUTBREAK INTERVENTIONS

1. **Early detection of an outbreak**
   - When one or two patients present with symptoms suspicious for gastroenteritis, the following is recommended until an infectious cause is ruled out:
     - Place symptomatic patients in private room on Contact Precautions. Droplet precautions if patient is vomiting.
     - Ensure dedicated toilet facilities
     - Reinforce hand hygiene
     - Monitor other patients and staff for symptoms of gastroenteritis

2. **Suspicion of an outbreak of a GI illness**
   - Communicate all suspicious cases to the Clinical Nurse Leader (CNL), Clinical Nurse Coordinator (CNC), Program Coordinator (PC) or nurse in charge of the unit / area who will facilitate the following:
     - Notify IPACS:
       - Monday to Friday 0800-1600 at local 6135 or through paging at 41-02411
       - After hours, on weekends and holidays, notify the ICO on call through paging at 604-875-2161.
     - Notify Program and Physician Leaders.
     - Initiate Contact Precautions for all symptomatic patients. Droplet precautions if patient is vomiting.
     - Start a line listing of all symptomatic patients.
     - Start a line listing of all symptomatic staff. All staff symptomatic for a GI infection should report to their manager, go home and inform Workplace Health.
     - Collect laboratory specimens as indicated by IPACS and send to laboratory.
     - IPACS will initiate investigation of cases to determine if the unit meets Trigger Alert or outbreak status.

**Specimen Collection:**
- Collect GI Specimens in a C&S container as soon as possible.
- Notify IPACS before sending specimens to ensure they are expected and expedited for processing.
- GI specimen can either be diarrhea (preferred) or vomitus. Do not mix specimens.
- Collect specimens (one per patient) from all patients who are symptomatic.
- Send specimen to BC Children's Laboratory for processing.
  - Transport specimen with a Microbiology C&S Stool Requisition.
  - Ensure specimen is labeled with patient's full name, source of specimen, date and
time of collection.
  • Note on line list that specimen was collected.

3. Outbreak Confirmation

  • The ICO in conjunction with the MHO or Environmental Health Officer (EHO) will declare the outbreak and provide recommendations on outbreak control.
  • The decision to close the unit or facility to admissions and transfers will be made by the ICO in collaboration with the MHO upon declaration of the outbreak.
  • IPACS will provide case definitions to the unit staff/front line leaders as a guide for determining cases and monitoring the outbreak.
  • Outbreak control strategies as outlined by IPACS are to be implemented immediately.
  • Epidemiologist will create an epi curve.
  • IPACS will conduct a case control study, if needed.

4. Outbreak Management Strategies:

Designate an Outbreak Leader:

  • The unit involved will designate an Outbreak Leader (CNL, CNC, or Program Leader), who will be responsible for the day to day unit outbreak management.
  • The Outbreak Leader will collaborate with IPACS as soon as the outbreak is declared to implement outbreak control strategies and delegate responsibilities.
  • The Outbreak Leader or Program Manager in conjunction with IPACS will arrange an Outbreak Management Team (OMT) meeting with key stakeholders to review outbreak strategies, delegate responsibilities and discuss concerns. OMT membership should include, but not be limited to:

    • Patient Care Services Director
    • Program Manager
    • Unit CNL or CNC
    • Infection Control Officer
    • Infection Control Practitioner
    • Risk Manager
    • Environmental Services Manager/Supervisor
    • Communications Representative
    • Bed Access and Flow Manager
    • Porter Aid Supervisor
    • Laboratory Supervisor
    • Radiology Supervisor
    • Food and Nutrition Services
    • Facilities Management and Operations (Plant Services)
    • Pharmacy
    • Occupational Health and Safety (OH)/Workplace Health
    • Child Life Services
    • Allied Health Services
    • Volunteer Coordinator
Line Lists:
- Maintain a separate list for patients and staff.
- Enter all patients/staff with signs and symptoms of gastroenteritis.
- Review line list with IPACS daily or more often as required.

Signs/Notification:
- Post and display signs at the entrance of the unit alerting staff, patients, families, visitors and volunteers of the outbreak and appropriate/required precautions. Request sandwich boards as needed from the Sign Department. Signs can be found here.
- Consider the need to post personnel at entrance of unit to remind visitors of hand hygiene, precautions in effect, and to postpone visit if possible. Consider need to limit flow into the unit to a single entrance.
- Additional Precaution Signs will be posted on each patient’s door or at the entrance to their bed space.
- Signs may need to be posted throughout the facility, depending on the extent of the outbreak.

Infection Control Precautions:
- Reinforce Routine Practices and conducting Point of Care Risk Assessments with every patient interaction. A Risk Assessment involves an assessment of factors related to the patient, environment, and task being performed.
- Ensure there are sufficient supplies of personal protective equipment (PPE) to manage the outbreak.
- Ensure staff are knowledgeable about the appropriate use of PPE.
- Staff and visitors who will have direct contact with symptomatic patients or the patients’ environment are required to use Contact Precautions. Droplet precautions are required if patient is vomiting.

Hand Hygiene:
- Hand hygiene with soap and water is the preferred method for hand hygiene during a GI outbreak, but if not available use alcohol-based hand rub (ABHR) and wash hands with soap and water when possible.
- Reinforce frequent hand hygiene.
  - Ensure hand hygiene facilities, including ABHR are available and accessible to all patients, staff and visitors.
  - Consider extra hand hygiene supplies at entrances and exits to affected units.
  - Staff to assist patients with hand hygiene as needed.
- Increased frequency of hand hygiene audits during outbreak.

Patient Care Activities:
- Restrictions may be implemented by IPACS depending on the extent of the outbreak.
- Postpone admissions or transfers, unless medically indicated, until the outbreak is over (may be limited to a unit or floor).
- Discharge patients who are medically stable, when possible.
- For symptomatic patients, consider rescheduling elective clinic appointments. If a patient must attend a clinic or has an acute medical condition, the receiving unit/clinic must be
informed of sending unit being under outbreak precautions. The receiving unit/staff must use appropriate precautions when treating the patient.

- Symptomatic patients are placed in single rooms.
- Symptomatic patients should remain in their rooms until symptoms have ceased for 48 hours post GI infection or 72 hours for CDI affected patients, unless patient must leave for medical reasons. To be determined in consultation with IPACS.
- Cancel all group social activities and group outings.
- Contact IPACS to discuss low risk one-to-one social activities for well patients.
- Shared food events, other group activities, outings and meetings which include outside participants should be postponed when possible.
- Linen should be changed daily and whenever soiled, for the duration of Contact Precautions.
- Privacy curtains should be checked on a daily basis and be replaced when visibly soiled.
- De-clutter patient areas to facilitate thorough cleaning of surfaces, and separate clean and dirty items and equipment.
- Reusable non-critical equipment (e.g., blood pressure cuffs, stethoscopes, pulse oximeters, etc.) should be dedicated for symptomatic patients. If this is not possible then it must be cleaned and disinfected prior to use on another patient.
- Handle soiled linen and clothes as little as possible and with minimal agitation as per Routine Practices.

Staff:

- All staff, students and volunteers who are symptomatic should be excluded from the workplace until they are symptom free for 48 hours (72 hours for food handlers – those involved in the preparation of food including preparation of breast milk and formula.)
- Staff are to report illness to CNL and Workplace Health at 1-866-922-9464.
- Cohort staff (if possible) so that staff members only work with either symptomatic or asymptomatic patients during a shift. If this is not possible, staff should care for asymptomatic patients first (e.g., when nurses perform initial patient assessments or scheduling symptomatic patients to be seen by Allied Health staff last).
- Staff may bring in food for meal breaks but leftovers must be taken home or discarded at the end of their shift.
- Staff must avoid eating in patient care areas and take meal breaks in designated areas.
- Avoid carrying cups, water bottles, and other personal items from patient area to patient area.
- Staff caring for symptomatic patients are to use designated bathroom only.
- Avoid common food and sharing of food by staff, e.g., chocolates, chips, pastries, etc.
- No food at the nursing station
- Restrict non-essential personnel from visiting the outbreak unit until the outbreak is declared over. Please refer to Appendix E for the definition of non-essential staff and examples.

Food/Dietary Services:

- In general, dishes, glasses, cups and eating utensils are not considered sources of infection and special precautions are not needed. Disposable dishes are not required. Regular dishes that go through the sanitizing cycle of the dishwasher can be used for all patients whether or not they are infectious.
- Designated unit staff to deliver meal trays to rooms of patient on Additional Precautions.
• Clean out all fridges/freezers to allow environmental services to clean and disinfect with bleach (1:50 or 1000ppm for GI outbreaks and 1:10 or 5000ppm for CDI outbreaks).
• Throw out all opened food (if in doubt throw it out) in both patient and staff fridges.
• Visitors may bring in food for patients, but they should be instructed not to leave food on the unit or store it in the kitchen.
• Food delivery carts to be cleaned and disinfected with bleach (1:50 or 1000ppm for GI outbreaks and 1:10 or 5000ppm for CDI outbreaks) before leaving the unit and returning to the common kitchen.

Environmental Services:
• IPACS will notify the PHSA Support Manager who will notify the environmental services supervisor (i.e., Crothall, Servantage) of the need for enhanced cleaning activities in the outbreak area.
• IPACS will provide direction to the environmental services supervisor on which product to use depending on the nature of the outbreak and as advised by the MHO.
  o During an outbreak of GI illness, IPACS will recommend that areas receive an enhanced clean with the regular hospital detergent/disinfectant followed by disinfection with bleach in a 1:50 (1000ppm) concentration or 1:10 (5000ppm) concentration during increased activity/outbreak of *Clostridium difficile*. Enough product must be used to ensure all surfaces are damp and allowed to air dry.
• Enhanced cleaning includes **twice** daily cleaning of the patient environment using a disinfectant:
  o First daily routine cleaning followed by disinfection of patient room and bathroom.
  o Second daily cleaning followed by disinfection of the patient room and bathroom with a focus on **high-touch surfaces** and the patient bathroom. The second daily clean should occur six to eight hours after the first.
    ▪ **High-touch surfaces** are those that have frequent contact with hands. Examples include doorknobs, call bells, bedrails, light switches, tap handles and wall areas around the toilet.
• **Discharge cleaning** of the patient’s environment and disinfection with the appropriate agent will be completed when Contact Precautions are discontinued, or when the patient is transferred or discharged. Privacy curtains and drapes must be changed.
• IPACS will give direction on use of RD UV-C disinfection during outbreak.

Visitors:
• Limit outside visitors as much as possible.
• Asymptomatic visitors may visit. Encourage visitors to be diligent with their hand hygiene before and after visiting.
• Visitors should limit their visit to their family/friend and then leave hospital directly.
• Ill visitors are asked to postpone their visit until they are asymptomatic. Visitors with GI illness must be asymptomatic for a minimum of 48 hours before visiting. If their visit is critical, reinforce hand hygiene during their visit and ask them to wear a surgical mask if they have respiratory symptoms.

5. **Conclusion of Outbreak:**
• The Outbreak Leader will collaborate with IPACS and monitor outbreak activity.
• IPACS will consult regularly with the MHO.
• The ICO in conjunction with the MHO or EHO will declare the outbreak over.
• A GI outbreak is normally declared over by the MHO or EHO when two incubation periods have passed since the last onset of symptoms (i.e. 5 days for Norovirus – 2 day incubation period).
A CDI outbreak is normally be declared over when the unit is back to baseline and under direction of ICO and MHO or EHO.

IPACS in consultation with the Outbreak Leader will complete an Enteric Outbreak Summary Form and submit it to the EHO within two weeks.

A debriefing will be completed to identify factors contributing to the event and measures to prevent any future occurrences.

EDUCATION AND RESOURCES

1. GI outbreak checklist (Appendix A)
2. Infection Prevention Management Tool (Appendix B)
3. GI Trigger Alert Toolkit (Appendix C)
4. Roles and Responsibilities in Outbreak Management (Appendix D)
5. Definition of Non-essential staff (Appendix E)
7. IC.06.03 Clostridium difficile (Infection Control Manual)

REFERENCES


Reviewed July 2016
Appendix A: GI Outbreak Checklist
For more details on Outbreak Duties, refer to Outbreak Management 08.01

Initial Response
- All suspected cases reported to CNL, CNC, PC or CN by frontline staff
- IPACS consulted by CNL, CNC, PC or CN
- Patient Line Listing started by CNL, CNC, PC or CN
- Staff Line Listing started by CNL, CNC, PC or CN
- Outbreak declared by IPACS and MHO
- Outbreak meeting required and organized by outbreak leader
- Case definition provided by IPACS

Infection Prevention and Control Service
- To be available and support the unit
- Coordinate outbreak activities with the designated unit Outbreak Leader
- Monitor the course of the outbreak
- Notify epidemiologist
- Epidemiologist to create an epi curve
- Provide education support as needed
- Send out an email notification of the GI outbreak to OMT
- Notify the Executive Lead on call
- Notify and update the MHO
- Notify Support Manager who in turn notifies Environmental Services Supervisor and Food Services of the outbreak and the Additional Precautions
- Notify PHSA Workplace Health call centre of the GI Outbreak by phone, 1-866-922-9464
- Send out daily email outbreak updates and email notification when outbreak is declared over
- Complete required Outbreak Summary Form for EHO

Outbreak Leader/Management
- Arrange regular meetings with OMT
- Restrict/redirect admissions and/or transfers
- Initiate/monitor outbreak control measures
- Ensure all symptomatic patients are on Contact Precautions (and Droplet Precautions if needed)
- Notify unit leaders
- Notify allied health and support staff of outbreak and restrictions
- Assess staffing needs, request workload as needed
- Ensure outbreak signs are posted
- Assist staff to provide information to family/visitors and patients on outbreak precautions
- Update patient and staff line lists and discuss with IPACS daily
- Coordinate with IPACS to ensure staff educational support is provided
- Instruct staff to self-monitor for symptoms and to report to them, and not to work if ill
- Cancel group activities, shared food events
- Restrict/limit visitors as appropriate
- Restrict/limit non-essential personnel
- Ensure adequate hand hygiene stations at entrances
- Ensure adequate PPE for staff
- Ensure fridges are cleaned out
- Advise staff to take breaks in designated areas as discussed with OMT
OUTBREAK MANAGEMENT

- Stop all shared food or beverages
- Ensure ice machines are used by HCW’s only for medical care
- Initiate Outbreak Evaluation process when outbreak is controlled

Workplace Health
- Work collaboratively with managers and IPACS to monitor/track staff illness
- Responds to staff queries related to illness
- Gives direction in regards to work restrictions
- Exclude ill staff from returning to work until they are symptom free for 48 hours (72 hours for food handlers)
- Advise ill staff members not to work in other facilities
Appendix B: Infection Prevention Outbreak Management Algorithm

1. Establish outbreak exists
   - Patient cases at, or exceed, threshold
   - Review cases/list with ICO & MHO to confirm an outbreak prior to any notifications
   - Create epi curve

2. Communicate confirmed outbreak
   - Verbally notify Charge Nurse, Unit Manager, Program Director and MRP and Pharmacist if patient prophylaxis required
   - Notify Site Director
   - Notify Workplace Health for GI and Influenza outbreaks
   - Notify internal key stakeholders via outbreak notification email.

3. Initiate Control Measures
   - Maintain additional precautions
   - Post outbreak signage
   - Initiate prophylaxis for patients through MRP if influenza
   - Check order sets
   - Enhanced cleaning practices
   - Increased equipment cleaning
   - Consider restrictions for patient admissions, movements and/or visitors
   - Provide staff, patients and visitors education as necessary
   - Increase audit frequency (e.g., hand hygiene, environmental cleaning)

4. Declaring an Outbreak Over
   - Outbreak declared over by ICO in consultation with MHO
   - Send out end of outbreak notice
   - Communications to send Staff notification if applicable
   - Coordinate with Director/Manager and organize debrief meeting
Appendix C – GI/CDI Trigger Alert Algorithm

Determine whether GI/CDI cases meet or exceeds threshold:

**GI (e.g., Norovirus):**
1 lab confirmed health care-associated (HCA) case

**CDI:**
- Oncology units – 3 cases identified on a unit within 7 days
- All other inpatient units – 2 cases identified on a unit within 7 days

- If cases meet or exceeds threshold notify Infection Prevention and Control.
- ICP will notify unit, housekeeping and ICO, if a GI/CDI Trigger has been declared
- Unit/ICP to start a line list
- ICP will provide housekeeping and unit with instructions on enhanced cleaning and disinfection, as well as patient and staff management
- ICP will provide daily updates

ICP will declare trigger alert over when:

- **GI Trigger:**
  No new cases have occurred after **2 incubation periods** (e.g. Norovirus – 5 days from onset of symptoms in the last case)

- **CDI Trigger:**
  No new cases have occurred 7 days from onset of symptoms in the last case
  **and**
  - Oncology units: Fewer than 3 cases remaining in the unit
  - Other inpatient units at C&W, BCMHCAS, SHH: Fewer than 2 cases remaining in the unit.

- **Deemed appropriate by the ICO**

ICP will notify unit, housekeeping and ICO.
Appendix D: Roles and Responsibilities in Outbreak Management

**Outbreak Leader/Manager**
- Initiate, direct and monitor outbreak control measures
- Organize regular meetings and debrief with outbreak team
- Coordinates communication with leaders and staff

**Medical Executive Leader**
- Communicates with medical staff
- Organizes and directs overall delivery of medical care in all areas
- Communicate with Outbreak Leader/Management

**Infection Prevention and Control (IPAC)**
- Co-lead in outbreak
- Declare start and end of outbreak in conjunction with MHO
- Communicate with Public Health
- Point of contact for assisting and coordinating activities between various members of the outbreak team
- Maintain patient and staff line list
- Provide strategies and education to manage outbreak

**Support Services**
- Environmental Service, Plant Services, Food Services, SPD, Porters, Laboratory
- Ensure there is enough equipment, supplies and support staff for duration of the outbreak
- Follows infection control measures as indicated by IPACS

**Communications**
- Provide information to the news, media, staff, patients & visitors as needed

**Pharmacy**
- Facilitate medication administration based on nature of outbreak
- Follows infection control measures as indicated by IPACS

**Workplace Health**
- Collaborate with IPACS and managers to monitor staff illness
- Advise ill staff members on work restrictions and management of illness

**Unit Leader**
- Notify IPACS of possible outbreak
- Initiate and maintain patient and staff line list
- Ensure infection control measures are carried out

**Appendix D: Roles and Responsibilities in Outbreak Management**
Appendix E – Definition of Non-Essential Staff

Non-essential staff are those considered not required for the affected unit to conduct patient care activities. Non-essential staff include:

- Volunteers
- Students
- Mascots (i.e., Clowns)
- Child life staff
- Music therapy staff
- School room staff

Please note: Special consideration may be given to unique circumstances (e.g., Palliative patient). Please consult IPACS.