Saskatchewan Health Provincial Laboratory

Virology Requisition

Place Provincial Laboratory number sticker here

Patient's Name & Address (required - print clearly) A. PATIENT A1- LTC HOME REGINA S4S 5W6	Patient PHN
	Birthdate: 01 01 1930
	Gender: ☒ Male ☐ Female
Does patient presently live on a First Nation reserve ? ☐ No ☐ Yes → if yes, name of reserve:	Sending Location Phone #: 789-9999
Hospital ID, Ward or Room#: LTC, EAST WING, Room 4	Patient type: ☒ In ☐ Out
Diagnosis: DIARRHEA + VOMITING	Collection Date: 01 02 08
Medication: ONSET 24 hr AGO	Collection Time: 08 00
Physician name (include initials): DR. J. BLOW	Physician MCIB#
Return Address (Doctor/Clinic/Hospital) ALBERT ST. REGINA OUTBREAK # ABC-08-0009	
In addition to mail/courier, please copy to: Dr.'s Name: MHO ☐ Fax (___) ___-___ ☒ Phone report 789-9999	

Please ensure that requisition and specimens are properly labelled.

This area for Provincial Lab purposes only

Symptoms

☐ Fever	☐ Conjunctivitis	☐ Stomatitis
☐ Headache	☐ Rhinitis	☐ Sore throat
☐ Meningitis	☐ Cough	☐ Photophobia
☐ Encephalitis	☐ Rash	☒ Nausea/Vomit
☐ Abdominal pain	☒ Diarrhea	☐ Muscle weakness
☐ Hypoesthia	☐ Flu-like	☐ Pneumonia
☐ Pericarditis	☐ Lymphadenditis	☐ Bronchitis

☐ Other (specify) _____

Specimen Source

☒ Stool	☐ Auger suction	☐ Throat
☐ Urine	☐ CSF	☐ Cervix
☐ Penis	☐ Vagina	

☐ Stool for Clostridium difficile Toxin Assay

☒ Other (specify) NOROVIRUS

Other Information

Date of illness onset 01-01-08

Health 13-54 12/03

Saskatchewan Health
The Saskatchewan Disease Control Laboratory (Formerly The Provincial Laboratory)

Bacteriology Requisition

Place number sticker here

Patient's Name & Address (required - print clearly)
A. PATIENT
A1 – LTC HOME
REGINA S4S 5W6

Patient PHN

Birthdate: 01 / 04 / 1930

Gender: ☒ Male ☐ Female

Does patient presently live on a First Nation reserve ?
☐ No ☐ Yes → if yes, name of reserve:

Sending Location Phone #: 789-9999

Hospital ID, Ward, Room #: LTC, EAST WING, Room 4

Patient Type: ☒ In ☐ Out

Diagnosis: DIARRHEA + VOMITING

Collection Date: 10 / 02 / 08

Medication: ONSET 24 hr AGO

Collection Time: 08 00

Physician name (include initials): DR. J. BLOW

Physician MCIB#

Return Address (Doctor/Clinic/Hospital)
ALBERT ST.
REGINA

OUTBREAK # ABC-08-0009

In addition to mail/courier, please copy to: Dr.'s Name MHO

☐ Fax (____) _____ ☒ Phone report (789) 9999

Please ensure that requisition and specimens are properly labelled. (Name, DOB, PHN)

Specimen Source

☐ Eye	☐ Urethral	☐ Rectum*
☐ Ear	☐ Vaginal	☐ Groin*
☐ Throat	☐ Cervix	☒ Stool
☐ Sputum	☐ Penis	☐ CSF
☐ Bronchial aspirate/ Bronchial washing	☐ Naso-Pharyngeal	☐ Blood
	☐ Nares*	☐ Mouth

Wounds: ☐ Superficial wound ☐ Deep Wound ☐ Abscess
site: _____

Urine: ☐ Mid-stream ☐ in/out catheter ☐ Indwelling catheter
☐ Suprapubic/cystoscopy

☐ Gastric washing (TB only) ☐ Fluid (specify) _____

Other Information

Urine dipstick results

Nitrate ☐ Positive ☐ Negative
Leukocytes ☐ Positive ☐ Negative

Recent foreign travel
(Specify country and dates) _____

Tests Requested

☒ C & S	☒ Food-borne illness	☐ Parasitology
☐ Diphtheria	☐ Pertussis	☐ GC culture only
☐ Mycobacterium culture	☐ Bacterial vaginosis (Gram Stain only)	☐ Group B strep screen (vaginal & rectal)
☐ VRE screen*	☐ Ureaplasma/ Mycoplasma	☐ Trichomonas culture
☐ MRSA screen*	☐ Bacterial Identification	
☐ Legionella urine	☐ Other (specify) _____	

* Infection Control

Health 13-7 05/07

Outbreaks in Long Term Care and Integrated Facilities
Attachment – Reference Table of Agents Commonly Responsible for Outbreaks of Enteric Infections in LTC Facilities

Agent	Reservoir	Symptoms	Duration of Symptoms	Incubation Period	Period of Communicability	Route of Transmission	Infection Control Measures [1, 2]
Adenovirus (type 40 or 41)	Humans	Abrupt onset of vomiting, diarrhea, dehydration, low grade fever.	4–6 hours	3–10 days	Most infectious during acute symptoms; healthy adults may be carriers.	Fecal/oral or vomitus/oral, aerosol and fomites.	• Contact precautions until 48 hours after symptoms resolve – use mask and eye protection when assisting patients with explosive diarrhea or projectile vomiting. • Food handlers and health care workers are excluded until diarrhea has resolved or as directed by MHO.[3] • Hand hygiene should be emphasized.
Campylobacter species	Poultry and cattle.	Diarrhea, abdominal pain, malaise, fever, nausea and vomiting.	2–5 days	2–5 days	Throughout course of infection (up to 5 days with treatment). Individuals not treated with antibiotics excrete organisms for as long as 2-7 weeks.	Mainly undercooked chicken and pork, contaminated food and water, or raw milk, contact with infected pets.	• Contact precautions are required until stool pattern has returned to normal. • Food handlers and health care workers are excluded until diarrhea has resolved. Exclude asymptomatic convalescent stool-positive individuals only for those with questionable handwashing habits. [4] • Hand hygiene should be emphasized.
Clostridium difficile	Intestinal tract of humans and other animals. Soil, water, hay, sand.	Diarrhea, pseudo-membranous colitis.	Varies with each patient/ resident	Variable	Duration of shedding.	Direct and indirect contact (fecal/oral)	• Contact precautions until symptoms resolve for 72 hours. • Food handlers and health care workers are excluded until diarrhea has resolved or as directed by MHO.[3] • Enhanced environmental cleaning is recommended.[5] • Hand hygiene should be emphasized. Alcohol gel not recommended for hand hygiene.

Agent	Reservoir	Symptoms	Duration of Symptoms	Incubation Period	Period of Communicability	Route of Transmission	Infection Control Measures [1, 2]
Clostridium perfringens	Soil; GI tract of healthy people and animals.	Mild disease of short duration; sudden onset abdominal cramping and diarrhea.	1 day or less	6–24 hours, usually 10–12 hours	Not directly transmitted from person to person.	Ingestion of contaminated food; usually inadequately heated or reheated meats or gravies.	• Standard precautions. • Food handlers and health care workers are excluded until diarrhea has resolved or as directed by MHO.[3] • Hand hygiene should be emphasized.
Escherichia coli 0157:H7	Cattle, deer, humans.	Range from mild non-bloody diarrhea to stools that are virtually all blood. Haemolytic uremic syndrome (HUS) in 2–7% of cases.	Typically less than a week, ranging from 3–8 days with a median of 3–4 days.	2–8 days	For duration of fecal excretion (7–9 days in adults and up to 3 weeks in one third of children).	Mainly contaminated food, undercooked beef, waterborne outbreaks documented. Person to person transmission can occur.	• Contact precautions for HUS continue until two negative stool specimens for *E. coli 0157:H7* or for 10 days from the onset of diarrhea. Otherwise, until the diarrhea has ceased. • Health care workers and food handlers are excluded from work until two negative stool specimens are obtained and diarrhea has resolved. Stool specimens must be taken at least 24 hours after diarrhea has resolved, they should be collected at least 24 hours apart and at least 48 hours after the termination of any antibiotic or antimicrobial treatment.4 • Hand hygiene should be emphasized.

Agent	Reservoir	Symptoms	Duration of Symptoms	Incubation Period	Period of Communicability	Route of Transmission	Infection Control Measures [1, 2]
Norwalk Agent (NLV), Norovirus and Small Round Structured Virus (Calicivirus)	Humans	Self-limited mild to moderate disease, vomiting and diarrhea.	24–48 hours	12–48 hours	During acute symptoms and up to 48 hours after symptoms resolve.	Fecal/oral or vomitus/oral, aerosol and fomites, other documented sources include water, and food (particularly shellfish and salads).	• Contact precautions until 48 hours after symptoms resolve – use mask and eye protection when assisting patients with explosive diarrhea or projectile vomiting. • Enhanced environmental cleaning is recommended.[5] • Direct health care workers reporting illness are excluded from work for at least 48 hours after their symptoms resolve or as directed by the Medical Health Officer (MHO).[3] • Food handlers reporting illness are to remain off work until 72 hours after symptoms resolve or as directed by the MHO. • Hand hygiene should be emphasized.
Rotavirus	Probably humans.	Abrupt onset of vomiting and diarrhea and rapid dehydration, low grade fever.	4–6 days	24–72 hours	During acute symptoms and shed in feces up to 8 days after symptoms subside.	Fecal/oral or vomitus/oral, aerosol and fomites.	• Contact precautions until 48 hours after symptoms resolve – use mask and eye protection when assisting patients with explosive diarrhea or projectile vomiting. • Food handlers and health care workers are excluded until diarrhea has resolved or as directed by MHO.[3] • Hand hygiene should be emphasized.

Agent	Reservoir	Symptoms	Duration of Symptoms	Incubation Period	Period of Communicability	Route of Transmission	Infection Control Measures [1, 2]
Salmonella species	Domestic and wild animals including poultry, swine, rodents and pets. Humans.	Sudden onset headache, fever, abdominal pain, diarrhea, nausea and sometimes vomiting .	Several days to several weeks	Usually 12–36 hours, may be from 6–72 hours S. typhi 5–28 days.	Throughout course of infection – several days to several weeks. A carrier state can occur and persist for months.	Ingestion or handling of contaminated food derived from infected animals or contaminated by feces of infected person or animal and fecal/oral route.	• Contact precautions until diarrhea has ceased. • Health care workers and food handlers are excluded until two negative stool cultures are obtained and diarrhea has resolved. Stool specimens must be taken at least 24 hours after diarrhea has resolved, they should be collected at least 24 hours apart and at least 48 hours after the termination of any antibiotic or antimicrobial treatment. • Carriers should be reviewed by the MHO before being allowed to return to work as a food handler.[4] • Hand hygiene should be emphasized.

Agent	Reservoir	Symptoms	Duration of Symptoms	Incubation Period	Period of Communicability	Route of Transmission	Infection Control Measures [1, 2]
Shigella species	Humans	Diarrhea, fever, nausea vomiting and cramps. Illness ranges from mild to severe.	4–7 days	Usually 1–3 days, but ranges from 12–96 hours; up to 1 week for *S. dysenteriae*.	During acute symptoms and until agent is not longer present in feces – usually within 4 weeks after illness. Asymptomatic carriers may transmit infection; the carrier state may persist for months or longer (although rarely).	Direct or indirect fecal/oral transmission. Infection may occur after the ingestion of contaminated food or water as well as from person to person.	• Contact precautions until diarrhea has ended and bowel pattern has returned to normal. • Health care workers and food handlers are excluded from work until two negative stool specimens are obtained and diarrhea has resolved stool specimens must be taken at least 24 hours after diarrhea has resolved, they should be collected at least 24 hours apart and at least 48 hours after the termination of any antibiotic or antimicrobial treatment.[4] • Hand hygiene should be emphasized.
Staphylococcus aureus (entero-toxigenic)	Humans cows, dogs and fowl.	Abrupt onset nausea, cramps, vomiting & sometimes diarrhea.	1–2 days	30 minutes to 8 hours, usually 2–4 hours.	N/A	Ingestion of food containing staphylococcal enterotoxin; usually foods handled without subsequent cooking.	• Standard precautions. • Food handlers and health care workers are excluded until diarrhea has resolved or as directed by MHO.[3] • Hand hygiene should be emphasized.

[1] Lifting Individual Precautions - when the recommendation to lift individual infection control precautions is made in consultation with your Infection Control Practitioner/MHO, an enhanced cleaning of the room is recommended before the resident is allowed to leave the room and staff discontinues PPE.

[2] If ongoing nosocomial transmission is occurring, additional cleaning procedures may need to be put in place. Discuss with Infection Control.

[3] Health Canada. Prevention and control of occupational infections in health care: an infection control guideline. Canada Communicable Disease Report 28S1, 1-264. 2002. See http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02pdf/28s1e.pdf

[4] Control of Communicable Diseases Manual, 18th Edition David L. Heymann, MD Editor

[5] Use of 0.5% hydrogen peroside or a 1000-ppm bleach solution (after cleaning) will need to be implemented for environmental cleaning. Recommended twice daily cleaning of hand contact items. Public Health Agency of Canada – MSDS infectious substances: http://www.phac-aspc.gc.ca/msds--ftss/index.html

Outbreaks in Long Term Care and Integrated Facilities
Attachment – Long Term Care Enteric Outbreak Infection Control Measures

Please see the following pages for the Long Term Care Enteric Outbreak Infection Control Measures.

SAMPLE
Regional Health Authority

Long Term Care
Enteric Outbreak Infection Control Measures

Facility: _____ **Date**: _____

Address: _____

Contact Person(s): _____ **Phone #** _____

Note: With the identification of a single resident/client with undiagnosed acute enteric illness that could be infectious, it is imperative that individual additional precautions be instituted immediately without waiting for lab information or for additional cases to occur.

Plan and prepare for enteric outbreaks with the facility outbreak team each season to ensure supplies are updated and available.

		Met	Not Met	Comments
1. Notification/Communication				
1.1	Contact Public Health (-). After hours and weekends (-) Public Health assigned Outbreak Number: _____			
1.2	Contact Infection Prevention and Control (IPC) personnel LTC (-)			
1.3	Notify staff, Director/Manager, Infection Control Outbreak Team, etc. about outbreak and put infection control measures in place			
1.4	Notify groups coming into facility such as VON, Home Care, etc			
1.5	Request fact sheets from Public Health Services/Infection Control as needed			
1.6	Fax line list to Public Health/Infection Control			
2. Entrances				
2.1	Sign at entrance to discourage visiting if visitor has an illness			
2.2	Sign at entrance to advise visitors of enteric illness			
2.3	Place approved hand gel at all entrances for visitor use			
3. Maps				
3.1	Site map update			
4. Residents				
4.1	Isolate in single room; may cohort in specific area those with same organism			
4.2	Stool specimens (C&S and virology) with completed requisitions to the lab, maximum of 6 residents. Include outbreak number. See 9-53 Generic Enteric Protocol – Investigation for details.			
4.3	Update line listings daily and fax or e-mail to Public Health/IPC by p.m.			

		Met	Not Met	Comments
4.4	Confined to room (if possible) and for 48 hours after symptoms subside (this may vary depending on causative organism – see Attachment – Reference Table of Agents Commonly Responsible for Outbreaks of Enteric Infections in LTC Facilities)			
4.5	Meals in their room - tray service during illness and for 48 hours after symptoms subside			
4.6	Diligence in handwashing and use of alcohol hand gel for all residents including wanderers.			

5. Staff				
5.1	Update line listings for ill staff daily and fax or e-mail to Public Health/IPC by p.m.			
5.2	Signage regarding contact precautions if have direct contact with resident or environment posted.			
5.3	Droplet precautions (surgical/procedure mask and eye protection) if within 2 meter of resident with projectile vomiting, explosive diarrhea, or during clean up of emesis or feces.			
5.4	PPE readily available			
5.5	Diligence in handwashing NOTE: Some enteric infections form spores that can not be killed by alcohol hand sanitizers (e.g. *C. difficule*). Ensure a strong emphasis on hand washing versus hand gel			
5.6	Sink, liquid soap, and paper towels available for handwashing			
5.7	Cohort staff to work only on affected area			
5.8	Cohort staff to have breaks separate from staff in unaffected areas			
5.9	No food or drinks at nursing stations			
5.10	Staff to provide dedicated equipment for ill residents. If this is not possible, disinfect common use items before re-use (e.g: stethoscopes) – have cleaning supplies/wipes readily available.			
5.12	If providing direct care, do not attend meetings held outside facility			
5.13	Ill staff off work for 48 hours after symptoms subside (may vary depending on causative organism – see Attachment – Reference Table of Agents Commonly Responsible for Outbreaks of Enteric Infections in LTC Facilities). Staff should consult with Public Health/IPC /Employee Health/Occupational Health designate prior to returning to work.			
5.14	Staff to notify their other employers about outbreak – ideally work in 1 facility during outbreak. Staff working in multi-sites discuss with Public Health/IPC/Occupational Health prior to working in another facility.			

		Met	Not Met	Comments
5.15	Non-facility staff, professionals, service providers are informed of the outbreak. Provide only essential therapeutic services, use appropriate PPE, and follow IPC measures.			
5.16	RE: Volunteers/students: (a) it is preferable they be excluded; discuss with LTC ICP, Manager (b) if allowed to work, use appropriate PPE, infection control measures, minimize contact with isolated residents			

6. Enhanced Cleaning (2 times per day) – Housekeeping Contact: _____				
6.1	Resident's bathroom (sink, taps, and toilet)			
6.2	Staff and public bathrooms (sinks, taps, and toilets)			
6.3	Hand rails/stair rails			
6.4	Call lights/bed rails/lifts			
6.5	Light switches/elevator buttons/door handles			
6.6	Water fountains			
6.7	Wheel chairs/walkers			
6.8	Commodes/boosters/bed pans			
6. 9	Dining room chairs, chair arms and table tops after each setting			
6.10	Telephone and desk at Nursing Station			
6.11	Hand contact areas of transportation vehicles			
6.12	If explosive vomiting, clean surrounding contaminated area			
6.13	Concentration and contact time of disinfectants varies with causative organism. Acceptable Disinfectants: • 0.5% Accelerated Hydrogen Peroxide Solution • Hypochlorite (Bleach) Solution _____ concentration **Enhanced cleaning following a Norovirus outbreak being declared over.**			
6.14	Remove non-essential items in ill resident's room (clean, then store); discard any used items that cannot be cleaned (ie: magazines, playing cards, etc.)			

7. Laundry – Contact Person: _____				
7.1	Soiled linen and clothes handled minimally – no rinsing			
7.2	Soiled linen and clothes bagged in room and sent to laundry - leak proof bag			
7.3	Laundry staff use gloves and long sleeved cloth gown to handle soiled linen. Place gown into the machine once soiled linen is in washing machine			
7.4	Launder in hot water, commercial bleach-like product, longest cycle and machine dry			

		Met	Not Met	Comments
8. Kitchen/Food Services – Contact Person:				
8.1	Refrigeration/cooling/thawing (must be 4°C/40°F or lower)			
8.2	Hot holding (must be 60°C/140°F or higher)			
8.3	Thermometer available to monitor food and equipment temperatures			
8.4	Handwashing facilities (sink, liquid soap and paper towels) available for staff			
8.5	Dishwasher temperatures/sanitizer concentrations being maintained and monitored			
8.6	Dining room tables, chairs, and chair arms cleaned and disinfected between settings			
8.7	Ice machines: (1) Bulk ice machines with a scoop are to be shut off, emptied, sanitized, and left un-used (2) Automatic ice dispensing machines require sanitization of high contact areas as per routine			
8.8	Dishes are to be put into dishwasher immediately. Disposable dishes are not required.			
8.9	Keep holding carts that take meals to wings/floors away from dirty dish area in kitchen			
8.10	Clean, sanitize hot holding carts and dish trolleys			
8.11	Dispose of any contaminated food/food that has been handled by infected person or exposed to aerosolized virus by someone vomiting in close proximity			
8.12	Canteen services: remove all open candies and their scoops			

9. Garbage – Contact Person:				
9.1	Garbage to be tied and removed to garbage containers. (Do not leave garbage bags on the floors)			
9.2	Garbage container outside premises to have lid that is closed and secure			
9.3	Inside garbage to have a foot release lid on containers or be open			

		Met	Not Met	Comments
10. Activities (to cancel if necessary) – Contact Person: _____				
10.1	Food related (cooking, potlucks, birthday parties, etc.)			
10.2	Hand contact activities (dancing, cards, bingo, crafts, folding linen, etc)			
10.3	Visiting groups			
10.4	Hair Salon			
10.5	Occupational therapy/physio			
10.6	Pet therapy			
10.7	VON care (foot care)			
10.8	Chapel			
10.9	Hot tubs/whirlpools used for several residents at one time			
10.10	Day care (children)			
10.11	Day program			
10.12	Outings			
10.13	Outside meetings held in facility			

11. Visitors				
11.1	Visitors are asymptomatic; visitors with symptoms do not enter the facility (unless compassionate or exceptional circumstances).			
11.2	Restrict visitation of multiple clients			
11.3	Visitors practice hand hygiene, use appropriate PPE, and follow IPC measures			

12. Admissions/Transfers				
12.1	Admissions to only after discussion with MHO/IPC. Transfers from affected wing/facility to another facility are limited to urgent/emergent situations – inform receiving facility of outbreak.			
12.2	Advise receiving facility RE: outbreak and whether or not resident symptomatic			
12.3	Advise family of resident RE: outbreak and potential risk			

13. Closure of Facility as per MHO Recommendations		**Y**	**N**	**Date: _____**
13.1	Date facility reopened:	Date: _____		
14. Post-Outbreak Review				
14.1	Recommendations made for improved management of future outbreaks if necessary.			

Outbreaks

Outbreaks in Long Term Care and Integrated Facilities
Generic Enteric Protocol – Introduction

The Generic Protocols – Introduction; Prevention and Control; and Limiting the Spread provide the overall principles and guidelines on outbreak prevention and management.

This *Generic Enteric Protocol* includes information that is specific to infectious enteric illness. It is important to refer to the *Generic Protocol* for supplementary information.

Long Term Care (LTC) facilities and hospitals are commonly the settings for outbreaks. They may occur suddenly and involve a large number of persons within a few days or they may develop gradually and slowly spread throughout the health care institution. Risk factors in LTC settings include the close proximity of ill residents/clients and staff in close living quarters and the decreased personal hygiene among some residents/clients due to incontinence, immobility, or reduced alertness. Gastroenteritis in LTC residents/clients can lead to more serious illnesses and complications, such as dehydration, debilitation, hospitalization, and death.[1]

In the LTC setting, it is not unusual for residents/clients to have gastrointestinal symptoms (e.g., bowel care, new medications, gallbladder disease, etc.). Care must be taken to recognize symptoms that may be related to infectious causes, which could be the early signs of an impending outbreak.

It is important to try to prevent gastrointestinal disease outbreaks by adhering to hand hygiene standards, implementing appropriate food handling procedures, and ensuring appropriate handling of contaminated linens and patient excreta.[2]

Surveillance is a key element in preventing and controlling outbreaks of enteric illnesses. All facilities and their health care providers should maintain ongoing surveillance for infectious enteric illnesses and recognize that the keys to enteric outbreak management and control are:

- Early recognition of enteric illness that could be infectious;
- Early implementation of individual infection prevention and control (IPC) measures;

[1] Maryland Department of Health and Mental Hygiene
[2] Massachusetts Department of Public Health, Division of Epidemiology and Immunization

- Early recognition of an outbreak;
- Prompt reporting of the outbreak;
- Prompt collection of laboratory specimens;
- Pprompt institution of outbreak control measures;
- Evaluation of the success of the control measures;
- Communication.

Pre-Season Planning and Prevention

Enteric outbreaks can occur at any time throughout the year but they occur more frequently in the winter months. All facilities should complete the following prior to the winter months:

- Review regional policies and procedures for management of enteric outbreaks ensuring active involvement of staff;
- Identify a lead individual to coordinate surveillance and outbreak prevention and management activities.

The Ontario Ministry of Health and Long Term Care (2006) includes the following as a framework for preventing enteric illnesses and outbreaks:

1. Case Finding/Surveillance.
2. Preventive Practices.
3. Reporting.
4. Evaluation.

Additional details of these functions are included in the Generic Protocol – Introduction.

Case Finding/Surveillance

Early identification of cases can assist in abating an outbreak. All health care settings should ensure that they have the ability to promptly identify cases of enteric illness and to detect clusters or outbreaks. A key component of case identification is also ensuring that case status is communicated to nursing staff, physicians, and local or regional IPC personnel. Public health must be notified when the causal agent of an enteric illness is a reportable disease, when there is suspicion that the illness is foodborne, or there is an outbreak or cluster of gastroenteritis in any health care facility.

Outbreak Management

Managing enteric outbreaks promptly and effectively ensures that morbidity and mortality are minimized. One of the most important first steps for front-line health care employees is to ensure that residents/clients with infectious enteric illnesses are promptly placed on contact precautions. Staff should use the Attachment – Outbreak Checklist to focus their initial action.

Ensuring resident/client safety and providing a safe workplace for employees by implementing effective infection prevention and control measures is the responsibility of all health care facilities. *The Occupational Health and Safety Act, 1993* requires that employers "ensure, insofar as is reasonably practicable, the health, safety, and welfare at work of all of the employer's workers." The *Act* also requires that workers "take reasonable care to protect his or her health and safety and the health and safety of other workers." Facilities must also educate their health care workers, residents/clients, and the public about their personal responsibility for enteric disease prevention.

Efficient and effective communication plans should be in place to deliver messages to stakeholders regarding early identification of outbreaks of respiratory illness. Refer to Generic Protocol – Introduction for Outbreak Management Team Roles, Membership and Expectations.

The following protocol sections should be used to guide the management of enteric outbreaks in long-term care facilities:

Outbreaks

Outbreaks in Long Term Care and Integrated Facilities
Generic Enteric Protocol – Declaration of an Outbreak

It is imperative to institute individual contact precautions immediately for any individual experiencing symptoms suggestive of an infectious enteric illness without waiting for laboratory confirmation or additional cases to occur. Additional precautions may be required depending on the organism or suspected organism.

Reporting an Enteric Outbreak

Long Term Care (LTC) facilities must report ***suspected*** enteric outbreaks to local or regional Infection Prevention and Control (IPC) personnel and the Medical Health Officer (MHO), as per regional protocol, as soon as possible.[1]

An **enteric outbreak** defined as follows:

- Two (2) or more residents/clients and/or staff members are exhibiting signs and symptoms of gastrointestinal illness[2] over a twenty-four (24) hour period.

Gastrointestinal illness is defined as:
- Two or more episodes of loose watery stool, above what are considered normal for the resident/client/staff member, in a 24-hour period, or
- Two episodes of vomiting in a 24-hour period, or
- One episode of vomiting and one episode of loose watery stool in a 24-hour period, or
- One episode of bloody diarrhea in a 24-hour period, or
- One episode of explosive diarrhea in a 24-hour period.

[1] Section 19 of the Saskatchewan Disease Control Regulations requires hospitals, health centers, and special care homes to report to the MHO within 24 hours of becoming aware of an outbreak.
[2] For which no other cause can be found for the symptoms - such as medication reaction, food intolerance, bleeding from hemorrhoids, etc.

It is possible that an outbreak may be occurring that does not fit the definition above. If you are concerned, it is better to err on the side of caution and discuss the situation with IPC personnel and the MHO. Incremental outbreak measures can then be introduced to prevent the progression to an outbreak.

Communication:

- Outbreaks should be reported **as soon as possible** (within 24 hours) to the facility manager and your Regional Outbreak Team.
- Call during reasonable hours; it is not usually necessary to call in the middle of the night.
- The MHO will determine whether illness within a facility constitutes an outbreak and will make recommendations regarding the implementation of outbreak control measures.

Declaring an Outbreak

The MHO is responsible for declaring an outbreak of gastrointestinal illness and will determine whether an outbreak is present when residents, clients and/or staff members exhibit signs and symptoms of infectious gastrointestinal illness consistent with the criteria above. The MHO will require the following information to determine if an outbreak should be declared:

- Number of ill residents/clients and/or staff;
- Total number of residents of the facility;
- Symptoms of illness – major and minor;
- Date of onset of illness in the first ill individual and all subsequent ill individuals;
- Location of ill individuals within the facility.

The MHO or designate will assign a sequential number to the outbreak and that number must be used on the lab requisition forms, line listings, etc.

The format of the outbreak numbering system should be assigned as follows:
<health region 3-4 letter acronym> - <four digit calendar year> - <three digit sequential number beginning at 001> (e.g., SCHR-2007-001).

Communication:
Key information to be communicated to the MHO throughout the outbreak includes:

- If there have been deaths related to the illness;
- Commonalities in the cluster, e.g., pre-existing pathology;
- Number of residents transferred to acute care facilities;
- IPC interventions implemented;
- If specimens have been collected/sent for laboratory diagnosis;
- If social/education events are planned for the staff or residents of the facility;
- Ongoing status (number of cases and severity of illness).

Communication (Weekend and After Hours)**:**

- It is the responsibility of the health region to ensure that the MHO who is providing weekend or "after hours" coverage has been updated on any current outbreaks, including the outbreak numbers.
- The MHO providing coverage should provide an update to regional designate once their coverage period is complete.

Communication:
Reporting to Saskatchewan Ministry of Health is an important function. Public Health will send an initial report the Saskatchewan Ministry of Health. See Attachment – Outbreak Notification and Report Form. The following elements must be documented on the form:

- Initial notification report date;
- Health Region;
- Outbreak number;
- Outbreak category (e.g., respiratory or enteric);
- Type of Healthcare Facility;
- Facility name, location, and floors/units affected;
- Date of onset of first case;
- Date outbreak reported to Health Region;
- Date outbreak declared if different from date outbreak declared;
- Date facility closed;
- Laboratory findings (submit via an updated notification report as soon as organism is known);
- Person preparing report, contact phone number and job designation.

Laboratory Investigation

The goal of the investigation is to identify the cause of the outbreak, not to confirm the diagnosis in every single case. After a laboratory diagnosis is made for the outbreak, management of subsequent cases is guided by symptoms.

Specimen Collection

- Restrict sampling in institutional outbreaks to the first five to six cases of diarrhea.
- Once an etiological agent has been identified, there is no value in continuing to send specimens. This only serves to increase turn around time as the laboratory deals with increased numbers of specimens.
  Exceptions
  Consideration should be given to further laboratory testing in these circumstances:
  - In large institutions, if the outbreak spreads to further wings or floors, Public Health may ask the facility to submit specimens from a sample of the initial cases in the newly affected wing(s).
  - For individuals with significant illness who do not meet the case definition, especially at the end of an outbreak.

- Collect specimens within 48 hours of onset of symptoms in the individual.
- Use the outbreak number assigned by the regional public health office. The facility name should also be included on the requisition. Specimens that do not have an outbreak number may not be tested as a priority, or testing may be delayed.
- Do NOT submit stool specimens that are formed.

Specimens for Virology

During the fall and winter, when norovirus circulates more widely:

- Submit stool specimens for norovirus testing in **plain** containers. Indicate "norovirus" on the requisition.

- Do NOT submit specimens routinely for "viral studies":
    - If **norovirus has <u>not</u> been identified** as the cause of the enteric outbreak with the initial testing of cases, consider sending nasopharyngeal (flocked or small dacron swab) or throat swabs (large dacron swabs) for viral studies on one or two residents/clients, especially if profuse vomiting and diarrhea are not the primary symptoms. These specimens must be sent in viral transport medium, labelled with the same outbreak number as the enteric specimens. At other times of the year (late spring and summer), when norovirus is not as common, in addition to stool specimens for viral studies, submit throat swabs (large dacron swabs) for virus testing in viral transport medium and indicate "viral studies" on the requisition. Label all specimens (stool and throat swabs) with the same outbreak number.

<u>Specimens for Bacteriology</u>

- Stools for <u>Culture and Sensitivity (C&S)</u> - Ideally, during an outbreak all outbreak stool specimens should be sent directly to Saskatchewan Disease Control Laboratory (SDCL) for bacterial culture. Specimens should be collected in Cary-Blair transport medium.
- Stools for <u>Toxin Testing (including *Clostridium difficile*)</u> - In addition to the specimen sent for C&S, send a second specimen in a plain stool container.
    - If toxin testing AND virology are requested, submit one specimen in a plain container, using a virology requisition and indicating "norovirus and toxin testing."

<u>Food-Borne Disease Outbreak Specimens</u>

- <u>Stool Specimens</u> - If a food-borne outbreak is suspected, all stool specimens should be sent directly to the Saskatchewan Disease Control Laboratory (SDCL) as they perform tests on outbreak specimens for enteric pathogens that are not routinely detected in regional laboratories, including *Staphylococcus aureus*, *Clostridium perfringens*, and *Bacillus cereus*.

- Food Specimens - The facility must refrigerate suspected foods in the original packaging. The Medical Health Officer (MHO) will coordinate prior approval for the testing of food with SDCL. Once this has been arranged, the facility will be responsible for sending the specimens.

Communication:
- The MHO will make arrangements for testing of food specimens with SDCL, before specimens are sent in. Food samples will **only** be processed when an organism has been confirmed by SDCL in a human case.

- Keep all specimens (stool and food specimens) refrigerated until packed and shipped to SDCL or the local laboratory as per routine specimen handling process. Refer to SDCL Compendium of Tests or the local Laboratory Manual for details on the transport of refrigerated specimens (e.g., where transportation time is greater than 1 hour, specimens must be kept cool using ice packs).

Communication - Submitting Specimens on Weekends:
- Specimens received after hours will be processed on the next working day, unless the MHO has made prior arrangements with the SDCL/Regional Laboratory to process specimens on an urgent basis.

- Supply the following information on each. See Attachment – Lab Requisition Samples:

1. Symptoms
2. Date of onset
3. Time and date of collection
4. Name of facility
5. Outbreak number
6. Name of resident
7. Date of Birth (DOB)
8. Health Services Number (HSN)
9. Name of ordering physician or nurse practitioner

Communication:

- If telephone results are required, provide the name and contact number.
- SDCL will communicate lab results to the sending laboratory/facility and ordering physician.
- The MHO/Public Health Services receive copies of all results for requisitions with an outbreak number from the testing laboratory (SDCL/other Regional Laboratories).

Epidemiological Investigation

The most compelling reason to investigate a recognized outbreak of disease is that exposure to the source(s) of infection may be continuing. Identifying and eliminating the source of infection can prevent additional cases.

Specific aspects that are to be considered include:

- The extent of the outbreak in terms of person, place, and time;
- The etiological agent, the source, the propagation mechanisms, and contributing factors.

A systematic approach to explore the commonalities of both affected and unaffected individuals is needed. Through this investigation, one can hopefully determine what the contributing factors are: environmental, behavioural, and/or administrative.

Even if an outbreak is basically over by the time the epidemiologic investigation begins, investigating the outbreak may still be warranted for many reasons. The results of the investigation may bring forth recommendations to prevent similar outbreaks in the future or to support the interventions that have been or will be put in place.

While investigation is typically carried out by Public Health, it is dependent on the cooperation and participation of facility residents, staff and administration in providing information.

The Generic Protocol – Prevention and Control section outlines measures that are important in the prevention and control of outbreaks routinely. This section highlights additional information on control measures that are specific to infectious enteric illness.

With the identification of a single individual with undiagnosed acute enteric illness that could be infectious, it is imperative that individual contact precautions be instituted immediately without waiting for laboratory confirmation or for additional cases to occur. Early consultation is encouraged, particularly if there are one or two residents/clients with severe or unusual symptoms. Symptoms that may be present in individuals with infectious enteric illness include: diarrhea and vomiting, nausea, abdominal pain, fever, myalgia and headaches.

In addition to the components of routine practices/standard precautions listed in the Generic Protocol – Prevention and Control, these supplementary measures should be implemented:

1. Additional/Transmission-Based Precautions.
2. Special Considerations for Food Services and Food Preparation.
3. Additional Environmental Cleaning.
4. Special Considerations for Norovirus and *Clostridium difficile.*

Additional Precautions

Additional Precautions are used in addition to routine practices for residents/clients documented or *suspected* of being colonized/infected with a specific organism. The type of required additional precautions is determined by the mode of transmission of the organism/disease. The mode of transmission on which these enteric precautions are based is primarily *contact.*

Contact precautions are used in addition to routine practices for residents/clients with symptoms of enteric illness. Perform a Point of Care Risk Assessment (PCRA) to determine the necessary level of protection/precautions.

Contact Precautions[1]

- Any communal or shared health care equipment must be cleaned and disinfected after each use.
- Health care equipment must not be shared between residents/clients.
- Provide resident/client with a private room, door can remain open (if private room is unavailable, cohorting residents/clients likely to be infected with the same agent and using precautions between contacts with residents/clients is permissible).
- Gloves (clean, non-sterile) should be used at all times when in the resident/client room and while providing care.
- Gowns should be donned before entering and removed immediately before leaving resident/client's room.
- Perform effective hand hygiene after removing gown and gloves and after leaving the room.

The following droplet precautions must be added when the resident/client has projectile vomiting or explosive diarrhea:

- A surgical/procedure mask covering the worker's nose and mouth and protective eyewear if working within two meters of the resident/client or during clean up of emesis or feces.
- Eye or face protection should be removed after leaving the resident's/client's room and disposed of in either a hands-free waste receptacle (if disposable) or in a separate receptacle to go for reprocessing (if reusable).

Hand Hygiene

Some enteric infections form spores that cannot be killed by alcohol hand sanitizers (e.g., *C. difficile*). Ensure a strong emphasis on hand washing versus hand gel.

Of particular interest in enteric outbreaks is the possibility of Common Vehicle Spread.

[1] Canada Communicable Disease Report (CCDR), July 1999 - Infection control guidelines: Routine practices and additional precautions for preventing the transmission of infection in health care.

A common vehicle is a common item that can spread an infectious agent to numerous people through a single source. Examples of common vehicles may be food, water and shared items. Additional measures may need to be implemented in instances of common vehicle spread.

Once the causative organism is known, the mode of transmission needs to be taken into consideration when determining the role of common vehicle in the spread of the outbreak. This information will be useful in determining what controls need to be implemented and what services and activities may need to be adapted or suspended.

Special Considerations for Food Services and Food Preparation

- Location of staff meals and breaks is decided in consultation with the Medical Health Officer (MHO) and infection prevention and control (IPC) personnel.
- Staff must eat only in designated areas (not in charting or working areas).
- All items that cannot be cleaned (e.g., magazines) should be discarded.
- All tables and chair armrests are to be cleaned and disinfected after each seating.
- Ensure the hot holding carts that take the meals to the wings/floors are never close to the dirty dish area in the kitchen.
- Hot holding carts and dirty dishes trolleys are to be cleaned and sanitized[2] once returned to the kitchen.
- If food preparation staff develop any enteric symptoms, the MHO and IPC personnel must be consulted to discuss 'meals on wheels' and catering operations.
- Sometimes independent living residents/clients also eat at these facilities; care must be taken to ensure measures are in place to prevent illness in the independent living quarters.

[2] Accelerated hydrogen peroxide is the agent of choice for cleaning and sanitizing during Norovirus outbreaks.

If canteen services are available in the facility:

- All open candies and their scoops are to be removed from the canteen until the outbreak has been declared over.
- Do not allow staff to take food up to floors or wings with ill residents/clients and advise staff not to share food (going into the same bag with their hands, etc.).

Cleaning of Food Preparation Areas Contaminated with Vomit and/or Feces

The following measures accompany the processes outlined in the Additional Environmental Cleaning section below:

- Disinfect the area (including vertical surfaces).
- Dispose of any potentially contaminated food (food that has been handled by an infected person or food that may have been exposed to the aerosolized virus[3] by someone vomiting in close proximity). If there is any question regarding the safety of the food, discuss the situation with the Public Health Officer before using the food.
- Wash all contaminated dishes, utensils and trays in a commercial dishwasher that is capable of effectively sanitizing the dishes with hot water at a temperature of at least 82 degrees Celsius or with the use of effective chemical sanitizers. Be careful not to cross-contaminate dirty and clean dishes. Follow the standard operating procedures for handling dishware.

Refer to cleaning instructions below for detailed information.

[3] An enteric vvirus that has been aerosolized is of concern when it is ingested. An enteric virus is not transmitted through inhalation.

Additional Environmental Cleaning

Refer to Generic Protocol – Prevention and Control for standard cleaning processes during outbreaks. Additional cleaning during enteric outbreaks includes:

- Cleaning frequently touched areas (such as door handles and light switches) twice daily during an enteric outbreak.

Individuals, who clean up vomit or feces, are to minimize the risk of infection to themselves and others by:

- Wearing disposable gloves, a surgical mask and a water resistant gown/disposable apron;
- Using paper towels (or equivalent) to soak up excess liquid and transfer the towels and any solid matter into a plastic garbage bag;
- Cleaning the soiled area following routine facility practice, using a "single-use" cloth followed by disinfecting the contaminated area with a recommended disinfectant (see below);
- Removing disposable gloves, masks and aprons and placing into a garbage bag;
- Placing re-usable aprons/gowns into laundry bag;
- Washing hands thoroughly using soap and warm running water for at least 30 seconds.

Ice Machines

- Bulk ice machines with a scoop are to be shut off, emptied, sanitized and left unused on each unit/ward that has ill residents/clients on it until the outbreak is over. If ice is needed on these areas, it can be brought from the main kitchen.
- Automatic ice dispensing machines require sanitization of high contact areas as per routine. Refer to cleaning instructions below.

Disinfectant Dilution Instructions

0.5% Accelerated Hydrogen Peroxide Solution:[2]

- The 0.5% accelerated hydrogen peroxide solution requires a minimum contact time at a dilution of 1:16. The length of time varies with causative organism – refer to current sources for details on contact times.
- Accelerated hydrogen peroxide solutions should be mixed as the product and safety label specifies.

Hypochlorite (Bleach) Solution:

NOTE: Bleach is not a cleaner; therefore the area must be cleaned with hospital grade detergent before applying 1:50 bleach solution that is allowed to air dry (2-step process).

- The recommended level of 1:50 bleach solution is made by adding 1 part of household bleach (5.25% hypochlorite) to 50 parts water, or by mixing 1/3 cup bleach to 1 gallon of water, or by following the manufacturer's recommendations for bleach tablets. This will give a hypochlorite solution of approximately 1,000 parts per million (ppm). This concentration of bleach is the minimum recommended level known to be effective against viral gastroenteritis agents.
- Diluted bleach solutions must be prepared daily, as available chlorine will decrease over time in a diluted state. Test strips should be used periodically to ensure that the bleach solution strength is sufficient. Check with a regional Public Health Officer.
- A minimum contact time is required for a bleach solution to be effective. This contact time varies with the causative organism; refer to current sources for details on contact times.
- Note that hypochlorite is corrosive and may bleach fabrics.

Special Considerations Norovirus and *Clostridium difficile*

Recommended Disinfectants for Use in Housekeeping

In the event of an outbreak of norovirus or *Clostridium difficile*, housekeeping is notified, so they can prepare for additional cleaning requirements. Quaternary ammonium products are **not** effective against enveloped viruses (e.g. Norovirus) or spores (e.g. *Clostridium difficile*). Recommended disinfectants are listed below:

- Accelerated Hydrogen Peroxide can be used as the disinfectant and cleaner. There is documented evidence that a 0.5% Accelerated Hydrogen Peroxide (AHP) solution is effective in killing feline calicivirus (FCV), a surrogate for norovirus. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5149a2.htm.
- A prepared bleach solution with a dilution of 1 part bleach to 50 parts water is also effective in killing FCV.

Recommended Disinfectants for Use in Food Service Areas

- Accelerated Hydrogen Peroxide can be used as the disinfectant and cleaner.
- If using bleach as the disinfectant, a three-step process is necessary in food preparation areas.
    1. Clean area with hospital cleaner.
    2. Use 1:50 bleach solution on the area allowing the surface to air dry.
    3. Rinse the area with fresh water.
- See housekeeping section above for dilution instructions.

Outbreaks

Outbreaks in Long Term Care and Integrated Facilities
Generic Enteric Protocol – Termination of Outbreak Status

The Medical Health Officer (MHO), in consultation with the facility and outbreak team, is responsible for declaring an outbreak over and will advise the facility when the institutional outbreak measures can be discontinued.

Discontinuing Individual Infection Control Measures

Individual infection control precautions can be discontinued when the individual is no longer considered infectious. The period of communicability is unique for the specific causative organism identified during the outbreak. For more enteric information see the Attachment – Reference Table of Agents Commonly Responsible for Outbreaks of Enteric Infections in LTC Facilities. Where no organism has been identified, contact precautions can be removed for an individual 48 hours after all symptoms have resolved.

Discontinuing Institutional Outbreak Measures:

In general, the outbreak will be declared over by the MHO when there have been no further cases since the resolution of symptoms in the last case[1] and nosocomial transmission has ceased. The criteria will be based on the epidemiological properties (incubation period/period of communicability) for the specific causative organism(s) identified during the outbreak. For more information, see the Attachment – Reference Table of Agents Commonly Responsible for Outbreaks of Enteric Infections in LTC Facilities.

Where no organism has been identified, the MHO will base this decision on the symptom profile, the epidemiologic characteristics of the outbreak and the surveillance data available in Saskatchewan.

[1] In the exceptional circumstance where a patient has prolonged diarrhea, consider other causes for this prolongation of symptoms. They may need to be considered separately from the other cases and in some instances the MHO will declare an outbreak over provided that other criteria for ending the outbreak have been met.

Communication:

- Facility managers should ensure that the following have been informed that the outbreak has been declared over:
  - Other facility managers;
  - IPC personnel;
  - Directors;
  - Human Resources;
  - Scheduling;
  - All others listed above that were on the initial notification list.

Communication:

- A final report of the outbreak is to be completed and shared with the outbreak team and Saskatchewan Ministry of Health. The finalized outbreak summary report must be submitted to the Ministry of Health **within 30 days of end of outbreak**. See Attachment – Outbreak Notification and Report form.