

# **rovirus Outbreak Toolkit**

**General toolkit for healthcare facilities such as: long-term care, acute care, assisted living, nursing homes, skilled nursing, retirement, hospital, memory care.**

## Incubation

Individuals generally become ill 12 – 48 hours after exposure (swallowing norovirus).

## Infectious Dose

Noroviruses are highly contagious, with as few as 18 virus particles thought to be sufficient to cause infection. A single gram of feces from an infected individual can contain 10 billion infectious doses of norovirus.

## Transmission

Norovirus is spread via the fecal-oral route. Infected individuals shed the virus in their stool and vomit, which can then contaminate food, surfaces, and objects. The virus spreads to others when they consume or contact the contaminated items. Airborne transmission can occur when someone forcefully vomits.

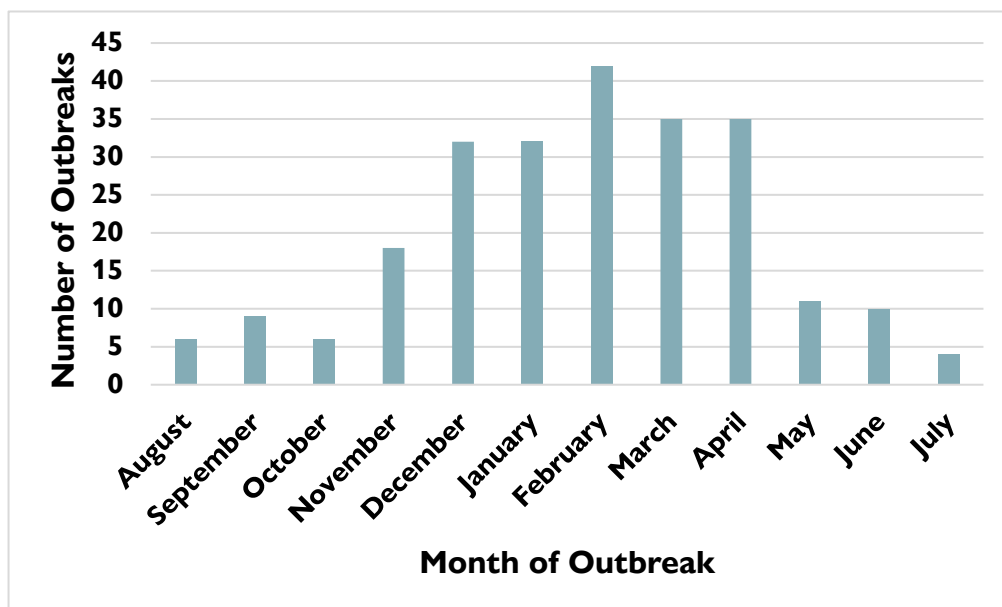
## Disinfection

To clean and disinfect for norovirus, you must clean and remove vomitus, feces, and gross soil, then use an EPA approved disinfectant. Washing hands for 20 seconds with soap and water is the most effective. Hand sanitizer (or alcohol-based hand rub) is generally not effective against norovirus.

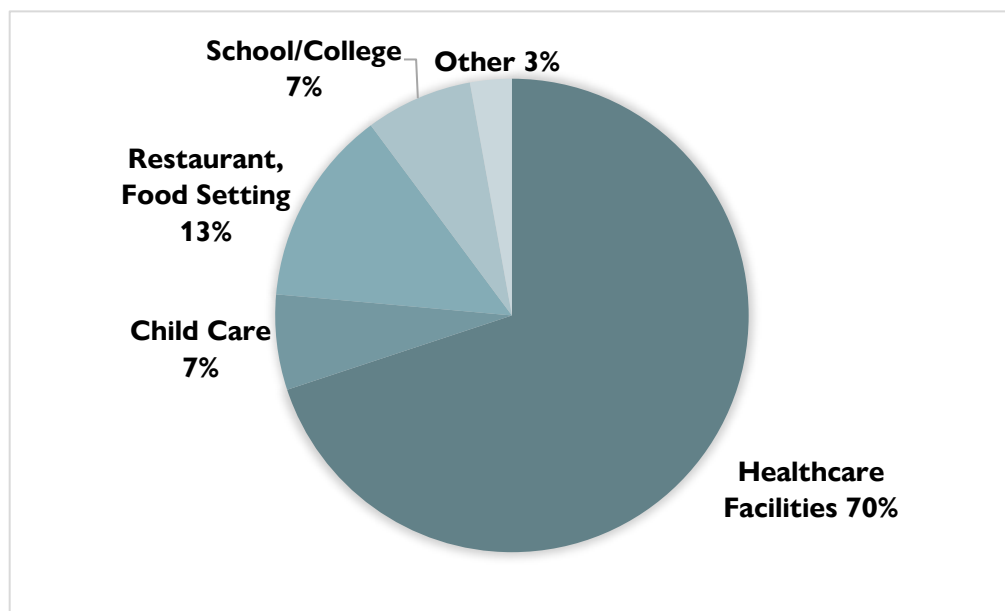
## Reporting

If a norovirus-like outbreak is suspected in your facility, contact your local health department as soon as possible for next steps.

## Norovirus Outbreaks Reported, Nebraska, 2017 - 2023



## Norovirus Outbreaks by Setting, Nebraska, 2017 - 2023



# Norovirus Toolkit Information

## PUBLIC HEALTH'S ROLE

The Nebraska Department and Health and Human Services (NDHHS) and Nebraska Public Health Lab (NPHL) receives funding to investigate, test, and report Norovirus outbreaks to the [Norovirus Laboratory Surveillance Network](#), [NoroSTAT](#) and the [National Outbreak Reporting System](#). Data collected is used to link clusters or outbreaks to a common source, monitor circulating strains, and detect/identify emerging strains of norovirus.

NDHHS and local health departments play a key role with investigating, tracking, and controlling gastrointestinal (GI) illness outbreaks. At facilities like yours, the most common cause of acute GI illness outbreaks is norovirus (often referred to as the “stomach flu”), though these outbreaks can also be caused by a variety of other pathogens (e.g., *Sapovirus*, *Salmonella*, *Rotavirus*, and others).

## HOW TO USE THIS TOOLKIT

This packet is intended for use during a suspected outbreak of acute viral gastroenteritis at your facility to:

- 1) **Provide guidance on implementing measures to stop the outbreak and determine its cause,**
- 2) **Assist with coordination of stool samples for norovirus testing if needed,**
- 3) **Collect data on the outbreak to prevent future outbreaks and inform disease burden estimates.**

## WHEN TO REPORT A SUSPECTED OUTBREAK

By Nebraska state regulations, [Title 173 Communicable Disease](#), Reporting and Control of Communicable Diseases, outbreaks shall be reported to your local health department. This includes suspected outbreaks, increases in GI illnesses, or unusual disease activity at your facility. Here are some examples of when to report:

- 1) **Illnesses above established baseline**  
Determine what the baseline incidence of GI illness in your facility is. Report when the number or percent of illnesses rises above your baseline (e.g., look at your routine resident illness tracking to establish a baseline of diarrhea/vomiting in the facility).
- 2) **Multiple cases in one wing or unit**
- 3) **More staff calling in sick with GI symptoms than usual.**
- 4) **CDC's Norovirus Outbreak definition**  
“A **norovirus outbreak** is defined as an occurrence of two or more similar illnesses resulting from a common exposure that is either suspected or laboratory-confirmed to be caused by norovirus.”

## KAPLAN CRITERIA FOR NOROVIRUS

When it is not possible to get laboratory confirmation of norovirus, health departments can use clinical and epidemiologic criteria to determine if the outbreak was likely caused by norovirus. Criteria are:

- 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 enteric bacteria found.**

When all four criteria are present, it is very likely that the outbreak was caused by norovirus. However, about 30% of norovirus outbreaks do not meet these criteria. If the criteria are not met, it does not mean that the outbreak was not caused by norovirus.

## HOW TO REPORT

Please notify your [local health department](#) as soon as possible to report any suspect outbreak.

Use this checklist for outbreak response.

## REPORT



- Report the suspected outbreak to your [local health department](#) when you detect an increase in GI illnesses above the expected baseline, or “normal” rate (e.g., more illnesses than usual in the facility/unit/wing).
- Information your local health department will ask for:
  - What date did the earliest illness start?
  - How many residents do you have in the facility? How many have been ill?
  - How many staff do you have in the facility? How many have been ill?
  - What symptoms did ill individuals have? What is the approximate duration of illness?
  - Have the ill individuals been in one unit or wing, or spread across the facility?
  - Have any dietary or food staff been ill?
  - Have any residents or staff tested positive for GI pathogens, such as norovirus?

## DOCUMENT

- Use this [GI Illness Line List Report](#) to track illness among residents and staff (including dining).
  - Contact managers of each unit, etc. as necessary to gather illness information.
- Gather information such as recent activities, events, field trips etc., held during the week prior to the first illness (especially if food was served).
  - Determine when and where there were any vomiting incidents or diarrheal accidents in the facility.
- You may send an updated daily line list to your LHD contact so they are updated each day.
- When the outbreak is deemed over, send the final GI illness line list report (required) and the checklist (optional) to your LHD contact.
  - Seven (7) days after the last illness reported is a good window to ensure the outbreak is over.

## STOOL TESTING

- If stools from residents/staff were ordered through their healthcare provider, notify your local health department of any of those results.
- If stool testing has not been done, DHHS/LHDs can assist with testing upon approval.
  - LHDs may have kits available or you may use kits from your facility/lab.
- Collect a stool sample from at least three (3) ill residents and/or staff.

	Option 1 (most common)	Option 2
<b>Collection Device</b>	Urine container or similar 	Cary-Blair/Enteric Plus transport medium (with preservative) 
<b>Volume</b>	Minimum 1mL raw stool	Fill stool to the fill line, 10mL
<b>Storage / Transport</b>	Immediately refrigerate specimen	Room temperature

- Label container with patient’s name, date of birth, and collection date.
- Complete a pre-approved “NPHL Test Req Form” for each stool sample (pre-approved form is provided to the LHD from NDHHS upon notification of outbreak)
  - Patient name, address, DOB, gender, and collection date must be completed.
  - Ensure information on form matches the specimen container.
  - If information does not match or is missing, specimens will be rejected.

# Checklist (continued)

Use this checklist for outbreak response.

## TRANSPORTATION OF STOOLS

- Call NPHL **Client Services 402-559-2440** to arrange a courier asap.
  - Indicate that a driver is needed to transport outbreak specimen(s) to NPHL.
  - Couriers can pick up specimens from *most* healthcare facilities (dependent upon route).
- Inform your local health department individuals name and DOB of specimens collected for outbreak testing and make sure to add them to the GI illness line list report.
  - Individuals' names will be shared with NDHHS and NPHL in order for specimens to be tested quickly.

**NOTE:** Stool samples pending diagnostic testing that are forwarded to a reference laboratory via routine courier, should NOT be tested in house and are to be shipped via Category B to NPHL with an approved NPHL Test Req Form. The laboratory acts as a middleman and should send the outbreak samples to NPHL directly.

- If stool samples are collected and approved by public health, but stool samples are tested at a clinical or reference laboratory, NDHHS is unable to reimburse facility.

## RESIDENTS

- Track resident illness in the same GI line list report. Use "R" for resident.
- Isolate ill residents using contact precautions while they are ill and for **48 hours** after vomiting/diarrhea has ended.
  - Isolate in single occupancy room, if available.
  - PPE should include gown and gloves for all patient contact. Masks should be worn when cleaning areas contaminated with feces or vomit.
  - Limit movement of patient outside of room to medically necessary purposes.
- Consider suspending dining room service and group activities (i.e., unit wide or facility wide) for the duration of the norovirus outbreak.
- Consider halting new admissions until the outbreak has ended.

## STAFF

- Track staff illness in the same GI line list report. Use "SF" for staff.
- Restrict ill staff/volunteers from patient care and food handling duties until **48 hours** after their vomiting/diarrhea has ended.
- Redouble efforts to promote glove use and hand hygiene.
  - Educate residents, staff, and visitors on proper technique.
  - Promote proper glove use followed by handwashing. Hands should be washed before patient contact, food prep, snacks/meals, and after patient contact, and bathroom visits.
- Avoid having staff care for patients with active illness before caring for patients who have not been ill.

## VISITORS

- Consider limiting visitors during the outbreak, as they can spread illness in the facility or become ill themselves.
- Post [signs](#) to promote visitor hand hygiene, particularly after visiting ill residents.



# Checklist (continued)

Use this checklist for outbreak response.

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## CLEAN & DISINFECT

- Immediately clean and disinfect the facility. Cleaning is the first step of any disinfection process to remove organic matter or soils. Disinfecting kills viruses and bacteria on surfaces using chemicals.
- Focus on frequently touched surfaces and objects (e.g., bathrooms, door handles, sinks, tables, drinking fountains, elevators, stairs, computer equipment, kitchen preparation surfaces).
- Use one of these options:
  1. Disinfectant with a norovirus claim ([EPA](#)). Check that the label on your disinfectant specifically says that it is effective against norovirus. Use as directed.
  2. Use concentrations of (1000 to 5,000 ppm) (5 to 25 tablespoons of household bleach [5% to 8%] per gallon of water). Use this [bleach dilution calculator](#).
    - Wear PPE (gloves, face shield) and use ventilation when applying this solution.
    - Bleach has a 10-minute contact time.
- Clean up vomiting or diarrheal incidents immediately.
  - Remove all individuals in the immediate area for a period that allows for the air to be completely cleared of any airborne particles that may have been produced during the incident and cleanup process.
  - Consider having a staff member who has been ill and recovered during the outbreak do the cleaning.
  - Never use a vacuum to clean up vomit as norovirus particles can aerosol.
  - Use caution when emptying commodes; consider using commode liners.
- Launder soiled bedding and other linens immediately and use appropriate PPE (gown, gloves, face shield).
  - Never add soiled items in with other laundry items. Disinfect the interior of the washer and dryer afterwards. Remove all body fluids (vomit/feces) as much as possible before putting them in the washer.
- Continue to clean and disinfect daily until the outbreak is over.

## FOOD SERVICE & DINING

- Contact your dietary department to determine if dietary staff are ill. Add them to the same GI line list report and continue to monitor for dietary staff illnesses during the outbreak.
  - Notify your local health department if dietary staff are ill, additional prevention measures may be needed.
- Exclude ill dietary staff from work for **48 hours** after diarrhea/vomiting have stopped as required by the [Nebraska Food Code](#).
- Clean and disinfect all kitchen and dining area surfaces with a product described above.
  - For food contact surfaces, rinse with clean water after disinfecting solution has fully dried.
- Discontinue all self-service food/drinks including self-service foods using tongs or other serving utensils.
- Postpone or cancel events such as birthdays, holidays, and special celebrations until the outbreak is over.
- Restrict sharing of communal food items and foods brought from outside the facility or prepared by residents.
- Encourage food handlers and food managers to become certified in the [ServSafe Food Safety Program](#)

## ADDITIONAL RESOURCES

- [Nebraska Infection Control Assessment and Prevention Program \(ICAP\)](#) is available for general questions regarding infection control in your facility. **402-552-2881**
- Visit NDHHS's website, [Resources for Healthcare Facilities](#) for this toolkit, flyers, and helpful links.

## Your Health Department Contact Information

**Local Health Department:**

**Name:**

**Phone Number:**

**Email address:**

**Fax Number:**