



Massachusetts Department of Public Health

Noro-like Outbreaks in Non-Food Establishments: Key Steps for Local Health Investigations

November 14, 2023

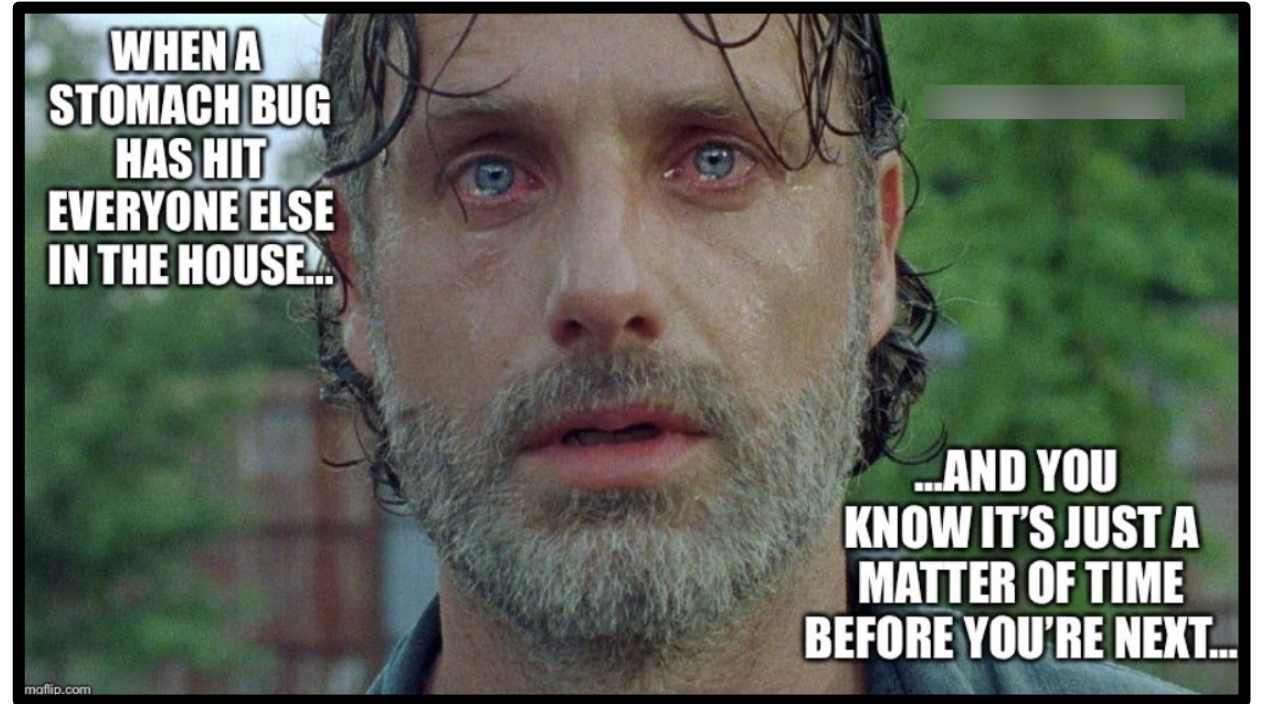
Esther Rei, MPH

Division of Epidemiology

**Bureau of Infectious Disease and
Laboratory Sciences**

Learning Objectives

- Overview of Norovirus
- Noro-like outbreak follow-up
 - Reporting
 - Data Entry into MAVEN
 - Investigation
 - Source of the outbreak
 - Infection control measures
 - Restrictions/ exclusions
- Resources



Definitions

Outbreak: An increase in illness above what is expected, by facility, regarding place and time resulting from a common exposure

Gastrointestinal illness outbreaks that are suspected (based on clinical information) or laboratory-confirmed to be caused by norovirus are collectively referred to as **noro-like outbreaks**

Overview-Norovirus

- Commonly referred to as the “Stomach bug”
- Non-enveloped single stranded RNA virus
 - Genetic diversity- 5 genogroups comprised of ~35 genotypes
- Leading cause of vomiting, diarrhea, and foodborne illness in the United States
 - 58% of all foodborne illnesses with 5 million illnesses estimated annually
- Causes acute gastroenteritis
 - Inflammation of the stomach or the intestines
- Humans are the only known reservoir

Norovirus Basics

- Incubation period (12-48 hours)
- Illness duration (1-3 days)
- Symptoms
 - Vomiting
 - Diarrhea
 - Nausea
 - Stomach pain/ cramping
- Infectious period-symptom onset through 72 hours post symptom resolution
 - [MDPH's 105CMR300.200](#)
 - Continued shedding after resolution
 - Persistence in the environment

“Noroviruses are perhaps the perfect human pathogens.”

- Possess all attributes of an ideal infectious agent:
 - ✓ Highly contagious
 - Extremely low infectious dose (≥ 18 viral particles)
 - ✓ Rapidly and prolifically shed
 - Up to 5 billion infectious doses shed in each gram of feces of an infected individual
 - Asymptomatic infection
 - ✓ Constantly evolving
 - Genetically diverse and rapidly evolves
 - ✓ Provides limited immunity
 - Lack of prolonged protection after infection
 - ✓ Moderately virulent
 - Allows those infected to fully recover and therefore maintains a large pool of susceptible hosts

Aron J. Hall, Noroviruses: The Perfect Human Pathogens?, *The Journal of Infectious Diseases*, Volume 205, Issue 11, 1 June 2012, Pages 1622–1624, <https://doi.org/10.1093/infdis/jis251>

Transmission

Most norovirus outbreaks happen when infected people spread the virus to others through direct contact

- Fecal/vomit-oral transmission
- Mode of transmission
 - Person-to-person
 - Foodborne/waterborne
 - Ill food handlers surface contamination
 - Fomites (toys, utensils etc.)
 - Airborne (aerosolized vomit)



Challenges to reducing norovirus transmission

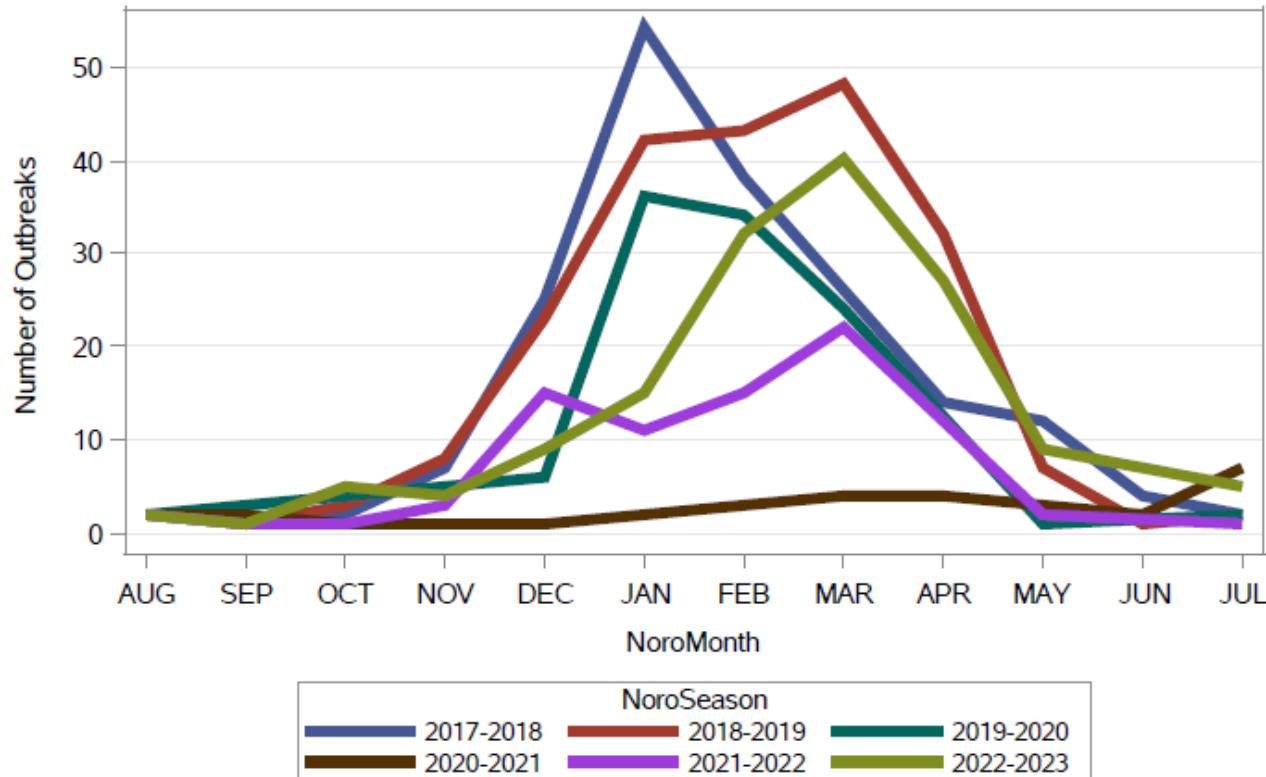
- Environmentally stable
- Can survive freezing and heating (but not thorough cooking)
- Resistant to many common chemical disinfectants
- Can persist on surfaces for up to 2 weeks
- Alcohol-based hand sanitizer is ineffective

Common Norovirus Outbreak Settings

- Healthcare facilities
- Restaurants and catered events
- Schools and childcare centers
- Cruise ships

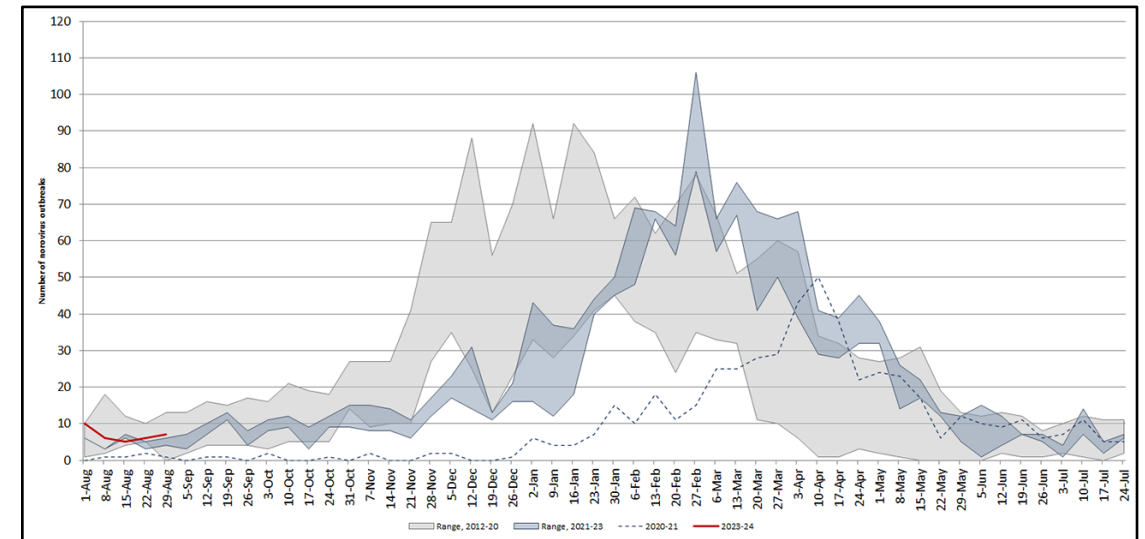
GI/ Norovirus Seasonality in Massachusetts and Nationwide

Confirmed and Suspect Norovirus Outbreaks by Month and Year of First Illness Onset, Massachusetts



'Confirmed' clusters are defined as having at least one positive Norovirus lab result.

Number of Suspected or Confirmed Norovirus Outbreaks Reported by NoroSTAT-Participating States Per Week, 2012–2024



Data are current as of October 13, 2023, and are subject to change.

Reporting & Documentation of Noro-like Outbreaks in Non-Food Establishments

What is reportable?

300.134: Illness Believed to Be Part of a Suspected or Confirmed Cluster or Outbreak

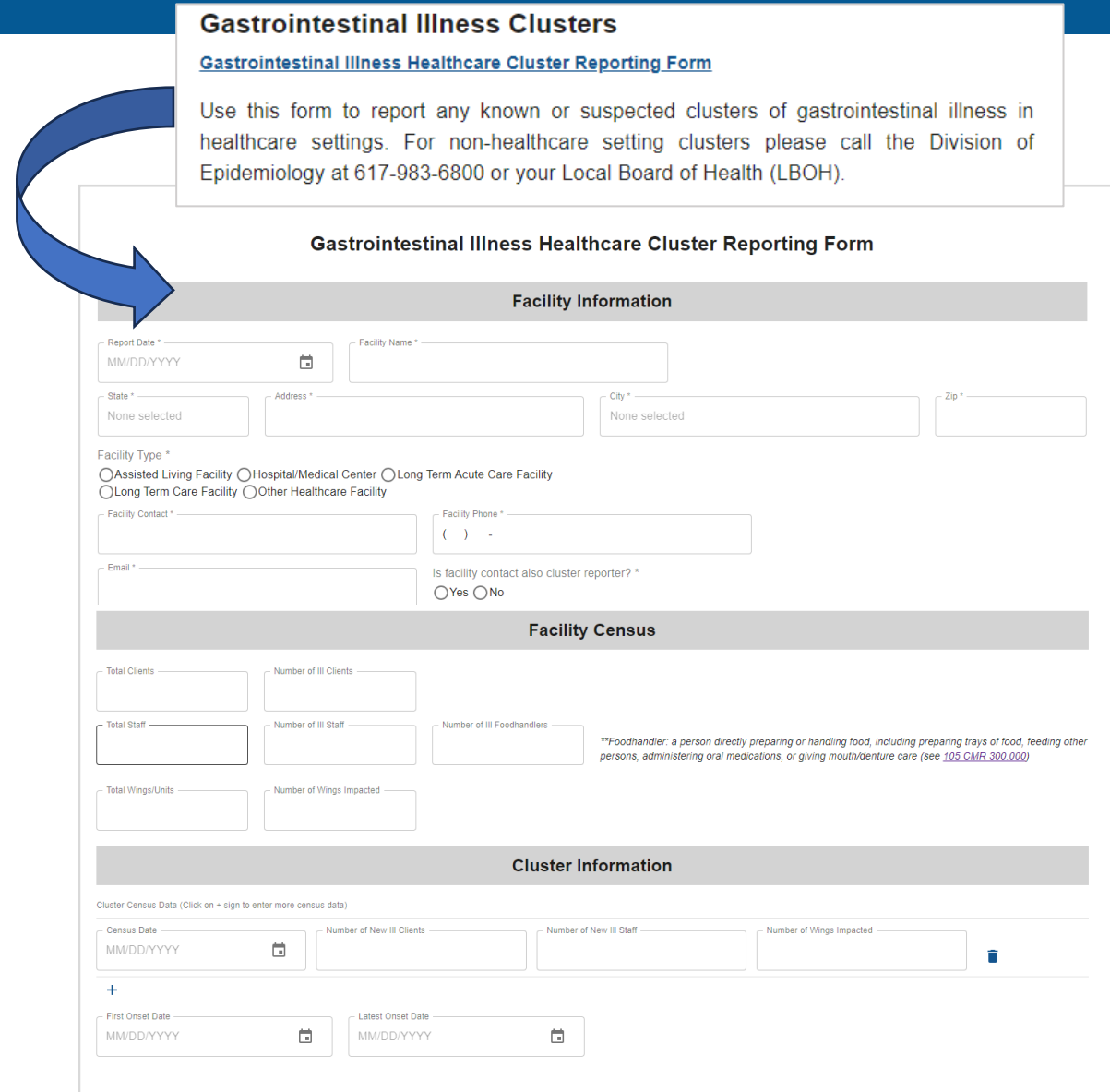
In addition to the diseases listed in 105 CMR 300.100, every person who is a health care provider or who is in a supervisory position at a school, day care, hospital, institution, clinic, medical practice, laboratory, labor or other camp, employers, or, if necessary, other entities determined by the Department, who has knowledge of the occurrence of any suspected or confirmed cluster or outbreak of any illness, shall report the same immediately by telephone, by facsimile or other electronic means to the local board of health in the community in which the facility is located or contact the Department directly. If the Department is notified directly, it shall notify the local board of health within 24 hours.

<https://www.mass.gov/doc/105-cmr-300-reportable-diseases-surveillance-and-isolation-and-quarantine-requirements/download>

How are GI illness outbreaks reported?

- **Healthcare settings** can report using MDPH's online Gastrointestinal Illness Healthcare Reporting Form
 - This replaced the GI Teleform
- Information submitted generates a MAVEN "GI Illness" cluster/outbreak event
 - MDPH epi will notify LBOHs
 - Outbreak events do not go into a workflow. LBOHs can run a report

<https://www.mass.gov/lists/infectious-disease-case-report-forms>



Gastrointestinal Illness Clusters
[Gastrointestinal Illness Healthcare Cluster Reporting Form](#)

Use this form to report any known or suspected clusters of gastrointestinal illness in healthcare settings. For non-healthcare setting clusters please call the Division of Epidemiology at 617-983-6800 or your Local Board of Health (LBOH).

Gastrointestinal Illness Healthcare Cluster Reporting Form

Facility Information

Report Date *
MM/DD/YYYY

Facility Name *

State *
None selected

Address *

City *
None selected

Zip *

Facility Type *

☐ Assisted Living Facility ☐ Hospital/Medical Center ☐ Long Term Acute Care Facility
☐ Long Term Care Facility ☐ Other Healthcare Facility

Facility Contact *

Facility Phone *
() -

Email *

Is facility contact also cluster reporter? *
☐ Yes ☐ No

Facility Census

Total Clients
Number of Ill Clients

Total Staff
Number of Ill Staff
Number of Ill Foodhandlers

Total Wings/Units
Number of Wings Impacted

**Foodhandler: a person directly preparing or handling food, including preparing trays of food, feeding other persons, administering oral medications, or giving mouth/denture care (see 105 CMR 300.000)

Cluster Information

Cluster Census Data (Click on + sign to enter more census data)

Census Date
MM/DD/YYYY

Number of New Ill Clients
Number of New Ill Staff
Number of Wings Impacted

+
First Onset Date
MM/DD/YYYY

Latest Onset Date
MM/DD/YYYY

How are GI illness outbreaks reported?

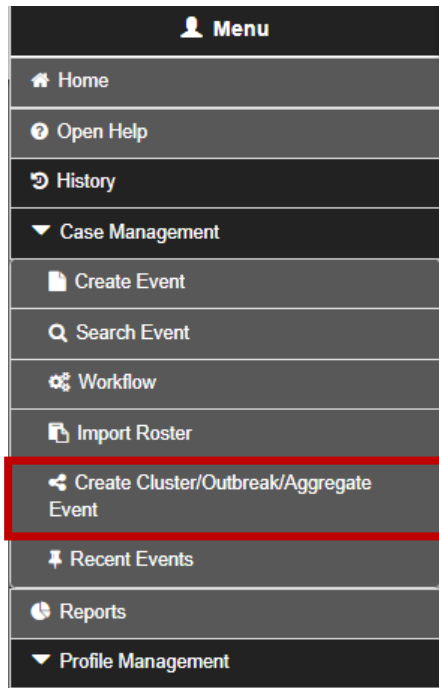
- GI Illness outbreaks in all other settings can be reported via phone or other means to MDPH or the LBOH
 - **Schools**
 - **Daycares**
 - **Camps**
 - **Correctional facilities**
 - **Shelters**
- Clusters reported via phone in non-food establishment settings should be documented in MAVEN as an outbreak/cluster event

Outbreaks associated with food establishments warrant the creation of a Foodborne Illness Complaint Event and notification to the Division of Epidemiology (617) 983.6800 or Food Protection Program (617) 983-6712

Creating MAVEN Cluster/Outbreak Events

If illnesses reported meet the definition of an outbreak, create a MAVEN cluster/outbreak event:

- 1 From the Dashboard, click on “Create Cluster/Outbreak Event” from the left-hand menu



- 2 Use [Cluster Naming Conventions](#) found in MAVEN Help when naming outbreak events: FACILITYTYPE_FACILITYNAME_TOWN

A screenshot of the 'Cluster/Outbreak/Aggregate Event' form. The form has a dark blue header. Below the header, there are two input fields: 'Name' and 'Event'. The 'Name' field contains the text 'DAYC_HAPPYHANDSDAYCARE_FRAMINGHAM'. The 'Event' field is a dropdown menu currently showing 'GI Illness Cluster'. At the bottom of the form are three buttons: 'Save', 'Cancel', and 'Help'.



- 3 If there are **two or more** lab-confirmed norovirus cases associated with the facility, select “Calicivirus/Norovirus” as the Event. Else, use “GI Illness Cluster” if norovirus is suspected.


Creating MAVEN Cluster/Outbreak Events

4 Complete required fields in **GI Illness** Question Package

Required Fields

- Total number of cases
- Total units/wings in facility
 - Number affected
- Total clients
 - Ill clients
- Total staff
 - Ill staff
- First onset date
- Last onset date
- Symptoms

Facility-based Cluster Questions	
Total number of cases:	<input type="text" value="10"/>
Total units/wings in facility:	<input type="text" value="3"/>
Number affected:	<input type="text" value="2"/>
Total clients:	<input type="text" value="100"/>
Ill clients:	<input type="text" value="8"/>
Total staff:	<input type="text" value="60"/>
Ill staff:	<input type="text" value="2"/>
Foodhandlers ill:	<input type="text" value="1"/>
First onset date:	<input type="text" value="11/01/2023"/> 
Last onset date:	<input type="text" value="11/05/2023"/> 

Census date:	<input type="text" value="11/01/2023"/> 
Add New	
Number new clients ill:	<input type="text" value="1"/>
Number new staff ill:	<input type="text" value="0"/>
Number wings/units impacted:	<input type="text" value="1"/>


Abdominal cramps:	<input type="text" value="Most"/>
Chills:	<input type="text" value="Unknown"/>
Diarrhea:	<input type="text" value="Most"/>
Fever:	<input type="text" value="None"/>
General body aches:	<input type="text" value="Some"/>
Headache:	<input type="text" value="Some"/>
Muscle aches/pains (myalgia):	<input type="text" value="Some"/>
Nausea:	<input type="text" value="Most"/>
Vomiting:	<input type="text" value="All"/>
Weakness (paresis):	<input type="text"/>
Other symptoms (specify):	<input type="text"/>
Average duration of symptoms:	<input type="text" value="24-48 hours"/>
Number hospitalized:	<input type="text"/>
Number of deaths:	<input type="text"/>

Creating MAVEN Cluster/Outbreak Events

5 Complete required fields in Standard Question Package

Required Fields

- Exposure setting name
- Exposure setting type

Exposure setting name:	<input type="text" value="Happy Hands Daycare"/>
	<button>+ Add New</button>
Exposure setting type:	<input type="text" value="Daycare"/>
Earliest onset date:	<input type="text" value="mm/dd/yyyy"/> 
Is this the primary exposure setting?	<input type="text"/>
Contact:	<input type="text" value="Mother Goose"/>
Phone:	<input type="text" value="(508) 123-4567"/>
Fax:	<input type="text"/>
Email:	<input type="text" value="mothergoose@happyhan"/>
Address:	<input type="text" value="123 Bo Peep Rd"/>
Town:	<input type="text" value="Framingham"/>
State:	<input type="text" value="MA"/>

Outbreak Investigation Steps

Goals of GI Illness Outbreak Investigation

- Rule out a point source/foodborne outbreak
- Confirm etiology is likely norovirus
- Prevent further transmission

How to tell if outbreak is norovirus without stool testing

- Most reported GI outbreaks do not have any stool testing performed

Kaplan Criteria

1. A mean/ median illness duration of 12-60 hours,
2. A mean/ median incubation period of 24-48 hours
3. More than 50% of people with vomiting and
4. No enteric bacteria found

Lively Criteria

1. A greater proportion of cases with vomiting than with fever,
2. Bloody diarrhea in less than 10% of cases, and
3. Vomiting in greater than 25% cases.

About 30% of Norovirus outbreaks do not meet Kaplan's criteria. If criteria are not met, it does not rule out Norovirus as the cause.

...what if outbreak does not seem like Norovirus?

- Strongly encourage stool testing if it has not been performed yet
 - Discuss possibility of stool testing at the MA State Public Health Laboratory with assigned MDPH epidemiologist
- Hypothesize possible etiology using symptoms, epidemic curve, illness duration, and common exposures among those ill
 - [CDC Guide to Confirming an Etiology in Foodborne Disease Outbreak](#)
- Notify your assigned MDPH epidemiologist

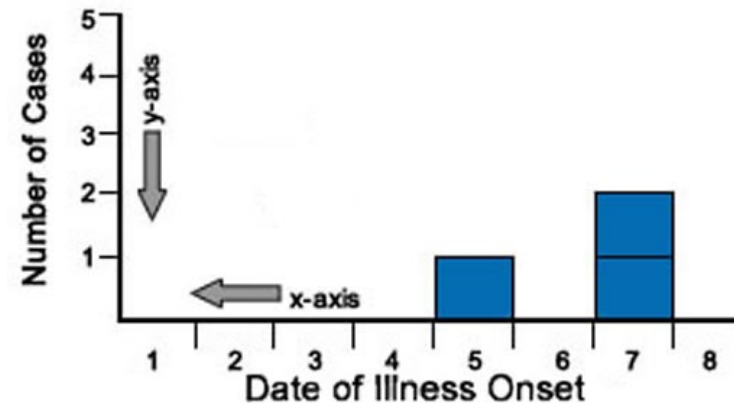
Link diagnosed cases to the Cluster/Outbreak event

- Any outbreak-associated case with a positive lab result for a reportable condition (e.g., result is in MAVEN) should be linked to the cluster/outbreak event.
 - Your assigned MDPH epi can help with linking any events outside of your jurisdiction
 - Make sure to obtain Name, DOB and town/city

Consider the outbreak's epidemic curve

- An epidemic curve, or “epi curve,” is a visual display of the onset of illness among cases associated with an outbreak
- Use census data in the GI Illness question package to roughly evaluate what the outbreak's epi curve looks like

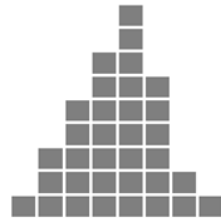
Census date:
11/01/2023
<input type="button" value="Add New"/>
Number new clients ill:
<input type="text" value="1"/>
Number new staff ill:
<input type="text" value="0"/>
Number wings/units impacted:
<input type="text" value="1"/>



[CDC Using an Epi Curve to Determine Mode of Spread](#)

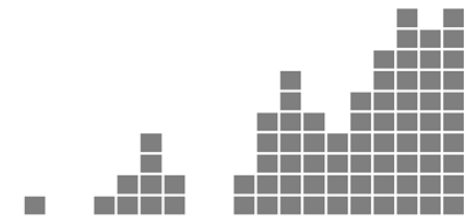
Rule out a point-source outbreak

Point Source




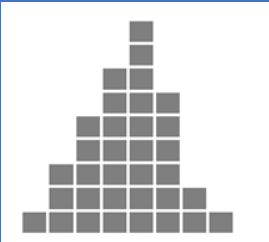
- In a point source outbreak, persons are exposed over a brief time to the same source, such as a single meal or an event. The number of cases rises rapidly to a peak and falls gradually. The majority of cases occur within one incubation period of the disease.

Propagated Source



- In a propagated outbreak, there is no common source because the outbreak spreads from person-to-person. The graph will assume the classic epi curve shape of progressively taller peaks, each being one incubation period apart.

Rule out a point-source outbreak

	How	Who	When	Where
Propagated Source 	Person to person transmission	Illnesses among clients and staff.	Begins with a couple people ill, then 24 hours later (1 incubation period), additional illness onsets observed.	Most illnesses among individuals on the same floor/unit/classroom or part of the same grade.
Point Source 	Foodborne transmission	More illnesses among clients than staff. Kitchen staff may report illness.	Most onsets occur within 24 hours of each other.	Spread across facility (multiple floors/units/classrooms or grades). Individuals share a common exposure (cafeteria, attendance at an event, etc.).

“Client” can include residents, students, or attendees at a facility.

- 1) Hand Hygiene
- 2) Exclusion and Isolation
- 3) Environmental Disinfection
- 4) Reduce transmission opportunities

- Provide education, post signs encouraging proper and frequent hand washing for 20 seconds.
 - Hand sanitizer does not work well against norovirus and is not a substitute for hand washing.



For all settings:

- Cohort ill individuals away from well individuals.
- Ill individuals should be excluded from others while symptomatic.
 - Should continue to be excluded for 72 hours after symptom resolution or special precautions should be taken if they return (depends on setting)
- [Exclude staff who meet the 105 CMR 300 definition of a food handler](#)

A food handler is defined as any person directly preparing or handling food; any person handling clean dishes or utensils; any person who dispenses medications by hand, assists in feeding, or provides mouth care.

- **In healthcare:** this includes those who set up trays for patients to eat, feed or assist patients in eating, give oral medications or give mouth/denture care.
- **In daycare facilities, schools, and community residential programs:** this includes those who prepare food for clients to eat, feed or assist clients in eating, or give oral medications.

Disease	Minimum Period of Isolation of Patient	Minimum Period of Quarantine for Contacts
Noroviruses	Food handlers must be excluded from food handing duties for either 72 hours past the resolution of symptoms or 72 hours past the date the specimen positive for norovirus was produced, which ever occurs last.	Contacts with diarrhea or vomiting who are food handlers shall be excluded from food handling duties for 72 hours past the resolution of symptoms.

Recommended: Food handlers with noro-like symptoms with no lab confirmation should be excluded in the same manner as a lab-confirmed case.

[Implementing the Exclusion of Food Handlers with Reportable Conditions](#)

Healthcare Facilities

- Cohort symptomatic residents/patients
 - Restrict staff to caring for only ill or well cohort
- Use standard plus contact precautions for the duration of resident/patient illness and remain on precautions until 72 hours after symptom resolution

Childcare/Schools

- Children with norovirus infection who have diarrhea should be excluded until 72 hours after resolution of symptoms.
- Children with norovirus infection who have no diarrhea and are not otherwise ill may remain in childcare/school if special precautions are taken.
- Students who handle food and have norovirus must not prepare food for others for 72 hours after symptom resolution (e.g., home economics).

[Guide to Surveillance and Reporting](#) (MDPH is in the process of updating disease-specific chapters)

- 1) Increase routine cleaning and disinfection to at least twice a day
- 2) Clean and disinfect **immediately** after someone vomits or has diarrhea

Surfaces	<ul style="list-style-type: none">• Chlorine bleach solution or EPA-registered disinfecting product against norovirus, followed by hot water and soap<ul style="list-style-type: none">• Reminder: follow guidance on label for disinfection contact time (5 minutes for bleach)
Laundry	<ul style="list-style-type: none">• Wash with detergent and hot water at maximum available cycle length• Machine dry at the highest heat setting
Carpet and furniture	<ul style="list-style-type: none">• Clean using steam at 158F for five minutes or 212F for one minute, <u>or</u>• Disinfect with an EPA-registered product (hydrogen peroxide products)• Do not vacuum (could aerosolize particles)

Wear PPE while cleaning, wash your hands afterwards!

- Limit movement
 - Limit staff floating between groups
 - Limit sharing of objects/fomites
- Consider notification to visitors, parents/guardians, etc.
- Cancel or reschedule group activities or events
- Review sick worker/sick child policies

When is an investigation complete?

- Complete outbreak investigation goals:
 - The expectations for GI outbreaks is to ensure that facilities implement MDPH infection control measures.
 - LBOHs do not need to monitor the outbreak until it is over.
 - It is possible to complete an investigation with a single phone call to collect data and ensure IC measures have been implemented after initial report to LBOH/MDPH.
- Provide your contact information to the facility to report:
 - Any notable increase in cases
 - Any positive lab results
 - For schools: any school closures or notices that go out to parents

New Tip Sheet!

TIP SHEET for Norovirus Outbreaks in Non-Food Establishment Settings

- **Disease:** Norovirus is the predominant cause of acute gastroenteritis in the United States. Symptoms include abrupt onset of vomiting, diarrhea, abdominal cramps, and nausea that lasts 1 to 3 days. Hospitalization is rarely required by individuals with norovirus infection.
- **Transmission and Incubation Period:** Norovirus is transmitted via fecal-oral or vomitus-oral routes. Transmission can occur directly via person-to-person spread, or indirectly by swallowing contaminated food or water, or having contact with contaminated surfaces then touching the mouth. Infected individuals remain infectious for at least three days after their symptoms resolve. Norovirus is not transmitted by animals. Symptoms begin 12 to 48 hours after exposure.

Individual case investigation guidance: [Norovirus Tip Sheet](#) on MAVEN Help

This guidance is intended for facility-based gastrointestinal illness outbreaks that are suspected or confirmed by laboratory testing to be norovirus (e.g., Noro-like).

Norovirus outbreak definition: An increase in gastrointestinal illness (e.g., diarrhea, vomiting, nausea) above what is expected, by facility, regarding place and time resulting from a common exposure that is either suspected or laboratory-confirmed to be caused by norovirus.

In the absence of laboratory confirmation of norovirus, the following [clinical and epidemiologic criteria](#) can be used to help identify a norovirus outbreak:

Kaplan Criteria ¹	Lively Criteria
1. A mean/median illness duration of 12-60 hours, 2. A mean/median incubation period of 24-48 hours, 3. More than 50% of people with vomiting, and 4. No enteric bacteria found	1. A greater proportion of cases with vomiting than with fever, 2. Bloody diarrhea in less than 10% of cases, and 3. Vomiting in greater than 25% of cases.

¹About 30% of Norovirus outbreaks do not meet Kaplan's criteria. If criteria are not met, it does not rule out Norovirus as the cause.

1 Reporting	<p>In accordance with 105CMR300, illnesses believed to be part of a suspected or confirmed outbreak are immediately reportable to the Local Board of Health (LBOH) where the facility is located or to MDPH.</p> <ul style="list-style-type: none">• Norovirus outbreaks associated with healthcare facilities (long term care, hospital, etc.) can be reported directly by the facility through the completion of the MDPH Gastrointestinal Illness Healthcare Cluster Reporting Form<ul style="list-style-type: none">◦ Submission of this form creates a GI illness outbreak event in MAVEN. New outbreak events will not go into any LBOH workflows.◦ An MDPH epidemiologist will notify you of any new GI illness outbreak events in your jurisdiction.◦ Outbreaks in your jurisdiction can be identified at any point in time by running the LBOH Cluster Linelist Report.• Norovirus outbreaks associated with other non-food establishments such as assisted living facilities, daycares, schools, etc. should be reported by phone to the LBOH where the facility is located or to MDPH. The information collected should be documented in a MAVEN outbreak event.• Norovirus outbreaks associated with food establishments (restaurants, catered events, etc.) warrant the creation of a MAVEN foodborne illnesses complaint (FBI) event, followed by a call to the Division of Epidemiology (617) 983-6800 or Food Protection Program (617) 983-6712
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TIP SHEET for Norovirus Outbreaks in Non-Food Establishment Settings (continued)

If needed, create a MAVEN outbreak event:

- From the Dashboard, click on "Create Cluster/Outbreak/Aggregate Event" from the left-hand menu. Use the following [Cluster Naming Conventions](#) when naming outbreaks:

FACILITYTYPE_FACILITYNAME_TOWN

- If there are two or more lab-confirmed norovirus cases associated with the facility, select "Calicivirus/Norovirus" as the Event. Else, use "GI Illness Cluster" if norovirus is suspected.

Complete all required fields:

GI Illness Question Package	Number of clients, patients, students, or attendees	Total in facility Number ill
	Number of staff	Total in facility Number ill Number ill who are food handlers
	Number of wings, units, or classrooms	Total in facility Number with illnesses
	Illness Dates	First onset date Last onset date
Standard Questions	Facility Information	Exposure setting name Exposure setting type

The following steps can be completed by reviewing reported illness information and by calling the facility.

Goal 1: Rule out a point source/ foodborne outbreak	Point source (foodborne) outbreaks:	Propagated (person-to-person) outbreaks:
	<ul style="list-style-type: none">Who: mostly clients/students, may include some kitchen staffWhen: most illness onsets occur within one incubation period (24 hours) of each otherWhere: spread across units/floors of the facilityWhat: most individuals have a shared meal or event exposure <p>→ Create a MAVEN Foodborne Illness Complaint event</p>	<ul style="list-style-type: none">Who: mostly clients/students, may include some staffWhen: may begin with a couple ill, then 24 hours later (1 incubation period), additional illness onsets observedWhere: among individuals who spend time together or are often in the same physical space (e.g., are on same unit/floor)What: No obvious common food or event exposure
	<i>Person-to-person spread is common in facility-based outbreaks. This means it started with one or two people ill, and due to inadequate handwashing, cleaning, etc., in conjunction with how infectious norovirus is, additional people end up getting sick.</i>	
	<ul style="list-style-type: none">Encourage stool testing of ill individuals to identify outbreak etiology.In the absence of stool testing, or prior to availability of stool test results, use Kaplan and/or Lively Criteria to identify if outbreak is likely caused by norovirus.	

Goal 2: Identify outbreak etiology	<ul style="list-style-type: none">Encourage stool testing of ill individuals to identify outbreak etiology.In the absence of stool testing, or prior to availability of stool test results, use Kaplan and/or Lively Criteria to identify if outbreak is likely caused by norovirus.	
Goal 3: Prevent further transmission	<ul style="list-style-type: none">Limit exposure by isolating symptomatic individuals, excluding ill attendees and staffRestrict floating to other units/ classroomsRe-educate staff on hand hygiene and proper donning/doffing of PPEIncrease enhanced environmental cleaning using an EPA-approved disinfectant (List G)Limit the sharing of objects to prevent fomite contaminationNotify visitors, parent/ guardians of the ongoing outbreakReview sick worker and sick child policies	

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TIP SHEET for Norovirus Outbreaks in Non-Food Establishment Settings (continued)

Across Settings	<p>A food handler is defined as any person directly preparing or handling food; any person handling clean dishes or utensils; any person who dispenses medications by hand, assists in feeding, or provides mouth care.</p> <ul style="list-style-type: none">• In healthcare settings: this includes those who set up trays for patients to eat, feed or assist patients with eating, give oral medications or mouth/denture care.• In daycare facilities, schools, and community residential programs: this includes those who prepare food for clients to eat, feed or assist clients in eating, or give oral medications. <p>Food handlers who test positive for norovirus should be excluded until 72 hours past the resolution of symptoms, or 72 hours past the date the norovirus positive specimen was produced, whichever occurs last.</p> <p>Food handlers with Noro-like symptoms without lab confirmation, should be restricted from food handling duties.</p>
Exclude/ Restrict	
Schools/ Childcare	<ul style="list-style-type: none">• Most staff in childcare settings are considered food handlers. Staff should be excluded following food handler criteria above.• Children in childcare settings and K-12 schools diagnosed with Norovirus should be excluded until 72 hours post symptom resolution.<ul style="list-style-type: none">◦ Non-food handling staff/children with no/mild diarrhea, and are not otherwise sick may remain in school if special precautions are taken.
Healthcare Facilities	<p>Residents/patients should be placed on standard plus contact precautions for the duration of their illness and remain on precautions until 48 hours after their diarrhea has resolved.</p>
Additional Resources	<p>MDPH Division of Epidemiology: (617) 983-6800 Guide to Surveillance and Reporting (MDPH is in the process of updating disease-specific chapters) MDPH Infection Prevention in Long Term Care: Gastrointestinal Disease CDC Healthcare-Associated Infections: General Information about Norovirus MDPH Implementing the Exclusion of Food Handlers with Reportable Conditions DPH School Health Manual:<ul style="list-style-type: none">◦ Diseases Spread Through the Intestinal Tract: page 8-27◦ Norovirus: page 8-34◦ Sample letter for parent/guardian: page 8-101 Disinfection & Sanitization in Childcare Environments</p>

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[MAVEN TIP SHEET for Noro-like Outbreaks in Non-Food Establishment Settings](#)

Resources

MDPH Division of Epidemiology: (617) 983-6800

[Guide to Surveillance and Reporting](#) (MDPH is in the process of updating disease-specific chapters)

[MDPH Infection Prevention in Long Term Care: Gastrointestinal Disease](#)

[CDC Healthcare-associated Infections: General Information about Norovirus](#)

[MDPH Implementing the Exclusion of Food Handlers with Reportable Conditions](#)

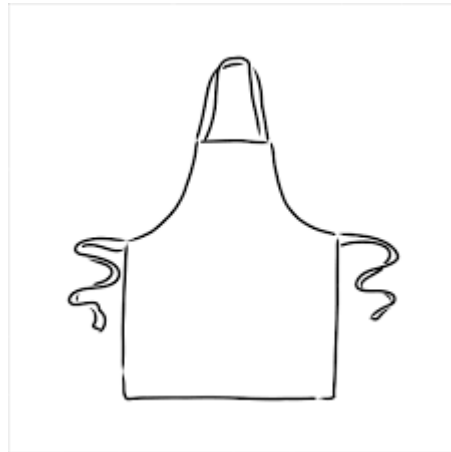
[DPH School Health Manual:](#)

- **Diseases Spread Through the Intestinal Tract: page 8-27**
- **Norovirus: page 8-34**
- **Sample letter for parent/guardian: page 8-101**

[Disinfection & Sanitization in Childcare Environments](#)

Norovirus Kit Supplies

Effective



Not Effective



Thank you
esther.j.rei@mass.gov

Connect with DPH



@MassDPH



Massachusetts Department of Public Health



mass.gov/dph