

SUMMARY OF GUIDELINES FOR INVESTIGATION AND MANAGEMENT OF NOROVIRUS OUTBREAKS IN LONG TERM CARE FACILITIES

Colorado Department of Public Health and Environment
Communicable Disease Epidemiology Program

Agent: Noroviruses cause acute viral gastroenteritis. In long-term care facilities (LTCFs), outbreaks of gastroenteritis caused by noroviruses are fairly common (especially in the winter), but require immediate attention to prevent prolonged spread of the virus in residents and staff.

Incubation period: 12 - 48 hours

Duration of symptoms: 12 - 60 hours

Symptoms: Onset of symptoms is sudden, consisting of nausea, vomiting, diarrhea (not bloody), abdominal cramps, low-grade fever, headache, chills, muscle aches and malaise. Severe dehydration can be fatal, especially among older persons with debilitating health conditions.

Transmission/Communicability: Noroviruses are extremely infectious, and are highly concentrated in the stool and/or vomit of infected people. Transmission is primarily person-to-person via the fecal-oral route, although airborne and fomite transmission may occur during outbreaks. Noroviruses can also cause foodborne and waterborne outbreaks. People are most contagious from the moment they begin feeling ill until diarrhea subsides; however they can remain contagious until at least 2 days after recovery. This reinforces the need for good hygienic practices.

Treatment: There is no antiviral medication for treatment nor is there a vaccine for prevention. Supportive therapy consists of replacing fluids and electrolytes to prevent dehydration.

Investigation: In the event of an outbreak, the following steps should be taken:

- **CDPHE or the local public health agency should be notified within 24 hours.** CDPHE (303-692-2700) is available to assist LTCFs and local public health agencies investigate these outbreaks and review appropriate control measures.
- Stool specimens may be submitted to a commercial laboratory or to CDPHE for norovirus testing on a fee for service basis. Specimens should be collected during the first 48 hours of illness while stool is still liquid; one specimen from two to six different ill individuals should be collected.
- **Outbreak control measures should not be delayed while waiting for test results.**
- At the minimum, the following information should be documented for each ill resident and staff member:
 - Illness onset date and time
 - Symptoms
 - Duration of illness
 - Hospitalizations/deaths
 - Wing/room number (residents)
 - Job duties, work location, dates worked (staff)
- Based on the data collected above, the local public health agency and/or CDPHE will determine if the outbreak is likely from a common source or due to person-to-person spread. Additional information will be collected as needed to determine the source of the outbreak.

Control: If a LTCF is experiencing an outbreak of gastroenteritis, the following control measures should be implemented. Enhanced precautions need to be in place for at least two weeks following the last case of illness.

HANDWASHING:

- Staff, residents, volunteers and visitors must be more conscientious about handwashing and infection control. Everyone in the facility should wash their hands more frequently.
- Hand sanitizing gels and lotions can be used in addition to proper handwashing.

STAFF:

- Ill staff and volunteers, especially food handlers, should be excluded from work until 2 days after diarrhea and vomiting cease, even if they are feeling well sooner.
- Ill staff members employed at other healthcare facilities or LTCFs should be instructed not to work at those sites until 2 days after diarrhea and vomiting have ceased.
- Staff should not “float” from affected areas to non-affected areas of the facility.
- Non-essential staff should be excluded from the affected areas.
- Staff should use disposable single-use gloves and gowns when caring for ill residents.
- Staff may want to consider wearing masks/respiratory protection when cleaning areas contaminated with feces or vomit, or when caring for a resident who is vomiting.
- A meeting should be scheduled with staff to review infection control procedures.

RESIDENTS:

- Group activities should not occur among affected residents/units until the outbreak is over.
- Ill residents should be placed on contact precautions and should be restricted to their rooms as much as possible until at least 2 days after cessation of vomiting and diarrhea.
- Staff should make an effort to decrease feelings of isolation among ill residents. Consider encouraging family members to make more frequent telephone calls to ill residents.
- Residents should not be moved from an affected area to an unaffected area.
- Maintain the same staff-to-resident assignments.
- Consider the use of antiemetics (anti-vomiting medication) for residents with vomiting.
- If a resident is transferred to the hospital, notify the hospital that the resident is coming from a facility at which an outbreak is occurring.

FACILITY:

- The facility, in conjunction with the state or local public health agency, should consider halting new admissions until the outbreak is over (until at least 2 incubation periods have elapsed since the onset of the last case).
- Cleaning and disinfecting should occur more frequently than usual, especially bathroom, bathtub and toilet cleaning, and areas of the facility commonly touched, such as handrails and doorknobs. Using a 10% solution of household chlorine bleach (a cup of bleach per nine cups of water) or a hospital grade disinfectant is acceptable.
- Any area that becomes soiled with feces or vomit should be cleaned and disinfected promptly with a hospital grade disinfectant. Flush any vomit or feces in toilets immediately.
- Soiled linens and clothing should be handled as little as possible. They should be laundered with detergent at the maximum available cycle length and then machine dried.
- Any food handled by an ill person should be properly discarded.
- Common medical equipment should be adequately cleaned and disinfected between residents. Consider dedicating pieces of commonly used equipment for use in affected areas.
- The use of disposable dishes and utensils is not necessary as regular dishwashing practices effectively removes any pathogens.
- Post signs that the facility is experiencing an increase in gastrointestinal illness.
- Visits from elderly persons, young children and persons with underlying medical conditions should be postponed until the outbreak is over.
- Ill family members and friends should be asked to avoid visitation until symptoms subside.

**To report an outbreak or for assistance, please contact your local health department or the
CDPHE Communicable Disease Epidemiology Program at (303) 692-2700
(after hours number: (303) 370-9395)**

Outbreak ID: _____
(if known)

NOROVIRUS OUTBREAK REPORT FORM FOR LONG TERM CARE FACILITIES

Outbreaks should be reported to the local or state health department within 24 hours of when the outbreak is identified. Complete and forward this form to CDPHE when the outbreak has ended. Please attach additional comments, epi-curve, and outbreak report if available.

Outbreak investigator: _____
Agency: _____ **Title:** _____

Facility name: _____
Address: _____ **County:** _____
City: _____ **State:** _____ **Zip code:** _____
Phone: _____ **Fax:** _____

Facility contact person: _____
Title: _____ **Phone:** _____
Type of facility: Skilled nursing facility Assisted living Rehabilitation facility
 Other: _____

Date of first onset: _____ **Date of last onset:** _____

Specimens submitted to a lab: Yes No **Date submitted:** _____
If yes – CDPHE lab Commercial lab: _____
Number of specimens: _____ Number norovirus positive: _____

Total number of residents in facility at time of outbreak: _____
Total number of staff in facility at time of outbreak: _____

Total number of *ill* residents: _____
Total number of *ill* staff: _____
Number of residents hospitalized: _____ **Number of deaths:** _____

Symptoms	Residents	Staff
Abdominal Cramps		
Fever		
Diarrhea		
Vomiting		
Nausea		
Headache		
Other:		
Total people for whom this information was collected		

Mail or fax completed form to: Colorado Department of Public Health and Environment
Attn: DCEED-DSI-A3-3630
4300 Cherry Creek Drive South
Denver, CO 80246-1530
Phone: (303) 692-2700 Fax: (303) 782-0338

STOOL/VOMITUS COLLECTION INSTRUCTIONS FOR NOROVIRUS TESTING AT THE CDPHE LABORATORY

**For specimen submission questions, please call the CDPHE lab at 303-692-3494
To order laboratory requisition forms or specimen collection supplies, call: (303) 692-3086**

- Specimens should be collected as soon as possible after the onset of illness.
 - Collect one specimen from two to six different ill individuals.
 - Stool may be collected in bulk specimen containers issued by the CDPHE laboratory or in other clean plastic containers with screw tops lids. In LTCFs, sterile urine cups are ideal containers. **Be certain the lid makes a tight seal with the cup.**
 - Specimens must be refrigerated until delivered to the laboratory.
 - **Acceptable specimens: stool, vomitus**
 - **Specimens will NOT be accepted if they leak in transit; are received more than 72 hours after collection; or have missing, incomplete or illegible labeling or documentation.**
1. **STOOL SPECIMENS:** Stool can be passed directly into the specimen container if possible. Only 3-4 teaspoons is needed. Stool can also be collected in the following manner:
 - a. Wash hands
 - b. Urinate into toilet and flush.
 - c. Place two pages of newspaper or one sheet of plastic wrap across the toilet seat.
 - d. Make a slight depression in the center of the newspaper or plastic wrap.
 - e. Pass stool onto newspaper or plastic wrap.
 - f. Use the plastic spoon to transfer 3-4 teaspoons of stool into the specimen container.
 - g. Throw the plastic spoon away.
 - h. Wash hands again.
 2. **VOMITUS SPECIMENS:** Vomitus can be collected directly into the specimen container if possible (only 3-4 teaspoons is needed). Vomitus can also be collected in the manner described in step 1, or the plastic spoon can be used to transfer vomitus from a different container into the specimen container.
 3. Place the cap **securely** on the container.
 4. Label the container clearly with the patient's name and date of birth.
 5. Place the container in the zip-top biohazard bag and seal the bag.
 6. Complete Requisition Form #270. These forms can be ordered at the number above. **Check the "Norovirus PCR" box in the Virology section. Complete a lab request form for each specimen and be sure to include name, DOB, and collection date.**
 7. Fold and place the completed lab request form in the side pocket of the biohazard bag.
 8. Keep the specimen refrigerated (do not freeze) until delivered to the lab.
 9. Shipping (if courier service is not available): Place the specimen, lab request form, and biohazard bag into an insulated shipping container with a cold pack, an itemized list of contents, and packing material for padding. Seal the box with packing tape and attach a biohazard sticker and shipping label.
 10. Specimens must be received at the laboratory as soon as possible after collection. Ship by the most rapid means possible to: **CDPHE Laboratory Services Division – Molecular Science Laboratory, 8100 Lowry Blvd., Denver, CO 80230-6928**

OUTBREAK SURVEILLANCE FORM – STAFF

Facility: _____

NAME	SEX	AGE	ONSET		SYMPTOMS (SEE BELOW)	JOB TITLE	JOB LOCATION	ILLNESS DURATION	STOOL COLLECTED
			DATE	TIME					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					
				AM					
				PM					

Symptoms: **V** = Vomiting **D** = Diarrhea **F** = Fever (provide temperature) **A** = Abdominal Cramps **H** = Headache **N** = Nausea
M = Muscle Aches **C** = Chills **O** = Other (please list)

OUTBREAK SURVEILLANCE FORM – RESIDENTS

Facility: _____

NAME	SEX	AGE	ONSET DATE TIME	SYMPTOMS (SEE BELOW)	ROOM #	UNIT/ WING	HOSPITAL- IZED	ILLNESS DURATION	STOOL COLLECTED
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						
			AM						
			PM						

Symptoms: V = Vomiting D = Diarrhea F = Fever (provide temperature) A = Abdominal Cramps H = Headache N = Nausea
M = Muscle Aches C = Chills O = Other (please list)