



DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH

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To: North Carolina Health Department Communicable Disease Nurses

From: Communicable Disease Branch

Subject: **Norovirus Outbreaks in Healthcare Facilities**

The North Carolina Division of Public Health, Communicable Disease Branch Enterics Team would like to remind you that the norovirus season has begun. We have put together this short memo to provide you with a quick reference when dealing with this disease in a healthcare facility.

Background: Noroviruses are a very contagious group of caliciviruses that cause acute gastroenteritis of short duration. In NC during 2013-2016, there were 759 outbreaks reported. During those years, 361 (48%) of those reported outbreaks were caused by norovirus or noro-like illness. Of the 460 gastrointestinal outbreaks reported during those years, 78% were caused by norovirus or noro-like illness. Humans are the only known reservoir for norovirus.

Average Incubation Period: 12 to 48 hours, with a median of approximately 33 hours.

Symptoms: Range from asymptomatic to acute-onset vomiting, watery, non-bloody diarrhea with abdominal cramps, and nausea. Myalgia, malaise, and headache may also be present, lasting 24 to 60 hours. These symptoms can cause severe illness in the elderly due to pre-existing conditions and/or progression towards dehydration. When it is not possible to get laboratory confirmation of norovirus, health departments can use Kaplan Criteria to determine if the outbreak was likely caused by norovirus. To view the Kaplan Criteria follow this link:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4284304/>

Outbreak control measures:

Control measures should never be delayed while awaiting laboratory confirmation.

- **Strict hand hygiene:**
 - Staff, residents and visitors should wash with soap and water for at least 15 seconds
 - Discontinue use of alcohol-based hand sanitizers; **not** effective against norovirus as they do not have a lipid-rich envelope
- **Exclude** ill staff from work until 48 hours after last symptom resolves
 - Remind ill staff they should not report to work in any other facility during this period
- **Disinfect:**
 - Utilize a bleach-based disinfectant for non-porous surfaces
 - Minimum concentration effective against norovirus is 1000 parts per million (ppm)

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- Maximum concentration effective against norovirus is 5000 parts per million (ppm) and should be considered when surfaces are more porous and or difficult to clean
 - Specific disinfection guidance can be located here:
http://epi.publichealth.nc.gov/cd/norovirus/NORO_LTCF_Oct2015.pdf
- **Restrict admissions and transfers** until outbreak is over (i.e., no new cases for at least 96 hours).

Additional control measures to decrease spread of illness include:

- **Cohort** ill persons away from well persons
 - Restrict ill patients to private rooms when possible
 - Observe contact isolation precautions
- **Post notice of illness for visitors**
 - Visitors should be aware of illness in the facility and should avoid visiting while symptomatic
 - Consider restricting visitors to a single-entry point, and monitor compliance with contact isolation precautions
- **Consider canceling group activities** until 96 hours after last case started feeling ill
 - Norovirus can cause illness with a very small infectious dose
 - The virus survives well in the environment
 - High risk population are more susceptible
- Environmental health should **review food service/disinfection practices**
 - Pay particular attention to staff hand washing and ice machines
 - Norovirus can be transmitted through food
 - Food employees must maintain good hand hygiene and not work while ill

Outbreak control measures can stop once the outbreak is declared over. The outbreak is declared over after 96 hours have passed with no new illnesses. The local health department will clear facilities to discontinue outbreak control measures. Additional infection control information can be located on the CDC website:
: <https://www.cdc.gov/hai/pdfs/norovirus/229110a-noroviruscontrolrecomm508a.pdf>

Laboratory Testing:

- Testing for norovirus using reverse-transcription polymerase chain reaction (RT-PCR) available through the North Carolina State Laboratory for Public Health (NC SLPH)
- Testing for outbreaks **ONLY**, not individual diagnosis
- Requests for norovirus testing must be approved by the Communicable Disease Branch, 919-733-3419.
- Specimens from at least five patients must be submitted for testing to begin
- Specific guidance for specimen collection and shipping are available from SLPH at <http://slph.state.nc.us>

Additional Information

Centers for Disease Control and Prevention at:

<https://www.cdc.gov/infectioncontrol/guidelines/norovirus/index.html>