



Norovirus Outbreak Control in Skilled Nursing Facilities

Acute Communicable Disease Control Program
Los Angeles County Department of Public Health



- What is norovirus?
- What are the symptoms of norovirus?
- How does norovirus spread?
- Who is affected by norovirus?
- How is norovirus diagnosed?
- How is norovirus treated?
- What can I do to protect myself and others?



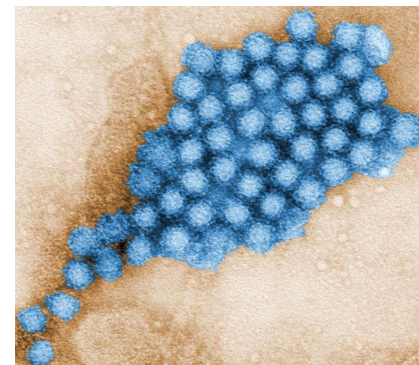


Norovirus Basics



Facts About Norovirus

- What is norovirus?
- They are small, round viruses
- They cause swelling of the stomach and intestines (gastroenteritis– GI)
- Other names commonly used are winter vomiting, stomach flu and food poisoning





Background

- The #1 cause of acute GI cases in the U.S.
 - 19 to 21 million cases annually
 - 109,000 hospitalizations
- Occurs year round with peak activity during winter/early spring months



Background

- Norovirus outbreaks have been linked to:
 - Healthcare settings: acute and subacute
 - Cruise ships
 - Casinos
 - Prisons
 - Any congregate living facility or group living environments such as camps, dorms, assisted care for the elderly

Norovirus in Healthcare Facilities

- Most common reported settings of GI outbreaks in the U.S
- Outbreaks pose risk to patients, healthcare personnel, and the efficient delivery of healthcare services
- Illness from norovirus infection can be severe in the elderly and lead to hospitalization





The Symptoms of Norovirus

In adults, children and babies:

- Nausea
- Vomiting
- Diarrhea
- Stomach cramping

Additional symptoms may include:

- Low-grade fever
- Chills
- Headache
- Muscle aches
- Tiredness
- Loss of appetite or decreased oral intake



Characteristics of Infection

- Symptoms occur 12 to 48 hours after exposure
- Sudden onset of symptoms
 - More vomiting in children
 - Most people experience both diarrhea and vomiting
- Duration of major symptoms is 1 to 3 days
- Infection may occur with no symptoms
- Viral shedding can last longer – up to 3 weeks
- Complete recovery – no long-term effects



Who is affected?



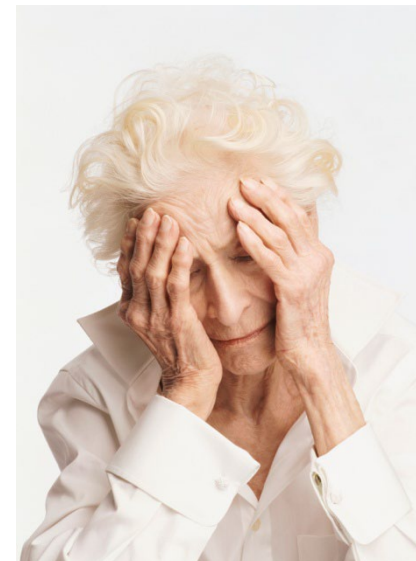
Vulnerability

- Anyone can become infected
- No long-lasting immunity due to many strains
 - Infection may recur throughout one's life



Norovirus in the Elderly

- Prolonged symptoms
 - Diarrhea may lead to fecal incontinence
- Dehydration
- Fevers
- Increased number of hospitalizations





Diagnosis





How Norovirus is Diagnosed

- In Los Angeles County, norovirus is detected in stool using reverse transcription polymerase chain reaction (RT PCR)
- Requires fresh (unfrozen) stool
- Stool should be obtained from ill individuals
 - Ideally within 48-72 hrs. post onset
 - Must be kept refrigerated
 - Kaplan criteria is used as means for diagnosis

Diagnosis

- Test is used for confirmation of outbreak only
 - Individual results will NOT be released
- Testing requires at least 3 specimens per outbreak
 - The H-3021 lab request form
 - Must be coordinated through Public Health





Clinical Criteria

- Kaplan's Criteria- developed in 1982 when norovirus testing was not as accessible as now
- Criteria used to classify gastroenteritis outbreaks (OB) due to norovirus (NV)
 - Vomiting in more than half of affected persons
 - Mean (or median) incubation period of 24-48 hours
 - Mean (or median) duration of illness of 12-60 hours
 - No bacterial pathogen in stool culture
- Sensitivity of correctly identifying a NV OB: 68%
- Specificity 99% correctly saying OB not due to NV



Current Public Health Activities in Norovirus Outbreak Management

- Countywide surveillance for outbreaks
- Polymerase chain reaction (PCR) based testing at Public Health Laboratory
 - Noro specimens provided to California Department of Public Health to calicinet



Current Public Health Activities in Norovirus Outbreak Management

- Outbreak investigation and control measures
 - Community Field Services (CFS)
 - Public Health nurse is the main contact
 - ACDC can collaborate with the investigation, but all communication goes through the nurse
 - Ensure norovirus prevention guidelines are followed
 - Assess need for facility closure to new admissions
- Web-based educational materials available at Acute Communicable Disease Control (ACDC) web site
- Collaboration with ACDC Foodborne Team when norovirus is implicated in food handlers



Treatment



How Norovirus is Treated

- Antibiotics **don't work**
- No antivirals
- No vaccine
- Drink fluids to prevent dehydration





True or False?

Prescription antibiotic medication **is not** recommended for the treatment of norovirus.



True or False?

Prescription antibiotic medication **is not** recommended for the treatment of norovirus.

TRUE



Prevention





How Norovirus Spreads

- Highly contagious
- Person-to-person
 - Found in the stool (feces) or vomit of infected people
 - Transferred to food, water or surfaces by the hands of infected people
 - People are contagious when they have symptoms and up to 3 days after recovery



Airborne vs. Aerosolized

- Norovirus is **not** airborne – it cannot be spread through coughing or sneezing like the flu
- Can become aerosolized through forceful vomiting
- Infectious particles can stay in the air for as long as 120 minutes after vomiting

How You Can Prevent the Spread of Norovirus

- Wash your hands **frequently** with warm, soapy water for 20 seconds
- Wash your hands after using the bathroom, changing diapers and before preparing foods
- Do not rely on hand sanitizers alone to prevent norovirus infection





It's NOT Just the Hands

- Increase frequency of cleaning of unit, bathroom and toilet
- Immediately wash clothing or linens that may be contaminated
- Disinfect any shared equipment
- Clean carpets or furnishings with hot water and detergent or steam clean
- Dispose of any food that may have been contaminated by staff or residents

Environmental Cleaning

- Clean up vomit and fecal spillages promptly
 - Wear a gown, mask, and gloves during outbreak season
- Clean up vomit and fecal spillages promptly
- Flush any vomit and/or stool in the toilet and disinfect the area
- Double-clean using EPA approved disinfectants or a fresh solution of sodium hypochlorite
 - Chlorine bleach to water ratio should follow manufacturer's instructions for use and should be mixture should be discarded within 24 hrs.





Wear PPE

- Gloves required for all patient/environmental contact
- Long sleeved gown required for all patient/environmental contact
- Hand washing after all patient/environmental contact and glove removal



Key IPC Reminders

- Staff should know about patient's norovirus infection and use appropriate precautions
- Gowns and gloves should be used when in contact with an infected patient or contaminated environment
- Nonessential staff should not enter affected areas





Roles for Public Health Department

- Perform a site visit
- Review the facility's policies and procedures
- Ensure that the facility is following the appropriate infection control guidelines
- Determine the source of the outbreak



Roles for Skilled Nursing Facility Direct Patient-Care Staff

- Key infection control activities
 - Rapid identification and isolation of suspected cases
 - Staff cohorting
 - Consider if your staff works at other locations or handles food
 - Communicate the presence of suspected cases to management and DPH
 - Promote increased adherence to hand hygiene
 - Enhance environmental cleaning and disinfection
- Promptly initiate investigations
 - Collection of clinical and epidemiological information with line lists
 - Obtain clinical samples

Surveillance

- Use a “line list” to track symptomatic staff and patients
- Suggested line list items:
 - Case (staff/patient) identifier
 - Case location
 - Symptoms
 - Outcome/Date of Resolution
 - Diagnostics submitted





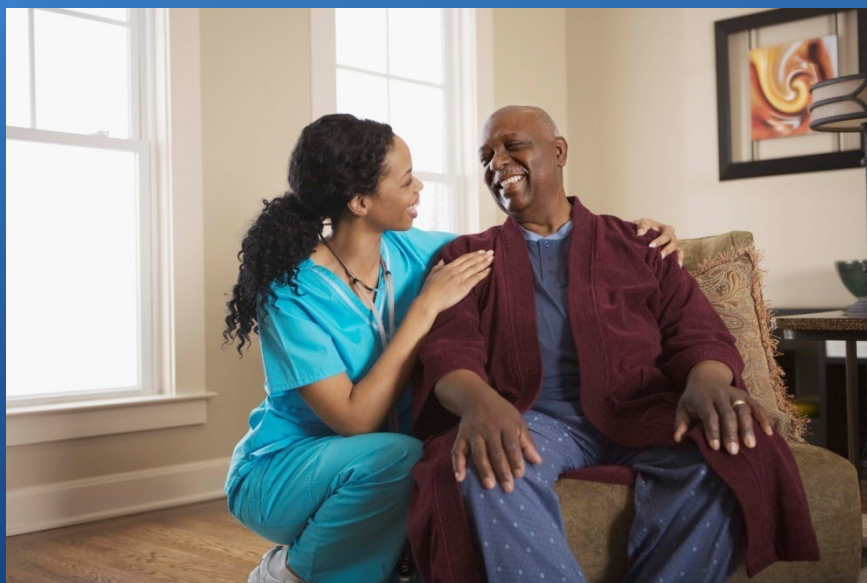
A Collaborative Project

- LAC Community Field Services (CFS)
 - “boots on the ground”
- LAC - DPH Acute Communicable Disease Control
 - Epidemiologic Support and Surveillance



A Collaborative Project

- LAC - DPH Laboratory
 - diagnostic testing
- LAC – DPH Health Education
 - Norovirus education “tool kit”
- Health Facilities Inspection Division



Review





Gastroenteritis Outbreak Scenario

What would your actions be?

- It is Friday morning, 2 residents in adjoining rooms become abruptly ill with vomiting and loose stools, without fever
- 7 additional residents, in the same wing but several doors down, started to vomit between 3PM-5PM
- By Saturday at 5 PM, one CNA must leave work due to vomiting
- What are your next actions?



Actions to consider

- Summarize the situation
- Consider: what is the incubation period between cases?
- Where are the cases located?
- What should you tell you direct patient care staff?
- What infection control procedures would you carry out?
- What cleaning recommendations would you recommend to your cleaning staff?
- Who would you call to report?
- What other actions would you consider?



It's a norovirus outbreak!

- The Situation:
 - 9 residents w/ abrupt onset of n/v and one CNA w/ n/v on one wing
- Incubation period between cases- approximately 36 hours
- Suspect- Norovirus Outbreak!
- Direct care staff- go home and don't come back to work until symptom free for least 48 hours
 - Alert direct patient care and cleaning staff that has contact with patient's rooms, bathroom facilities, high touch surfaces that they may come down w/ NV infection
 - Collect specimens for laboratory confirmation



It's a norovirus outbreak!

- Institute contact precautions
- Call the LAC Public Health Department to report this outbreak as well as the Health Facilities Inspection Division
- Start line list for patients and staff with symptom onset, symptoms, facility location
- Advise cleaning staff to enhance cleaning and disinfection of all surfaces
 - Bleach for cleaning and disinfection
 - Emphasize high touch surfaces
 - Cleaning staff should wear mask and gown and gloves



Review of Recommended Steps for Prevention

- Wash your hands frequently with warm, soapy water for at least 20 seconds
- Immediately clean vomit and fecal spillages with EPA approved disinfectants or a fresh solution of sodium hypochlorite
- Immediately report norovirus cases at your facility to DPH
- Practice good hygiene habits:
 - Keep your hands clean
 - Wear protective gear when in contact with patients (long sleeved gowns and gloves)
 - Keep all surfaces clean
 - Wash all linens and curtains



For More Information

- CDPH:
 - <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Norovirus.aspx>
- LACDPH:
 - <http://www.ph.lacounty.gov/acd/Norovirus.htm>
- Public Health Lab Test Request Form:
 - <http://www.publichealth.lacounty.gov/lab/docs/H-3021%20Test%20Request%20Form.pdf>
- CDC:
 - <https://www.cdc.gov/norovirus/index.html>



Questions





Thank you!

