

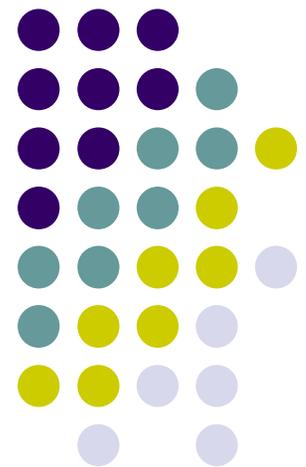
Norovirus

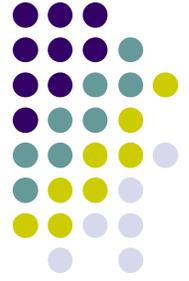
Kristin Waroma

Public Health Inspector

Michelle Luscombe

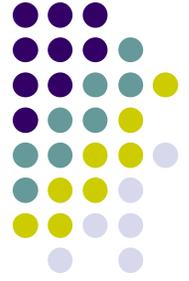
Infection Control Nurse





Objectives of Presentation

- Clinical presentation of Norovirus disease
- Transmission of Norovirus
- Treatment of Norovirus
- When to call Infection Control
- Lab Confirmation of Norovirus
- Limiting Spread of Norovirus in Facilities
- Foodborne Norovirus and Prevention
- Questions



Noroviruses

- Are a group of viruses that cause gastroenteritis in people.
 - Gastroenteritis is an inflammation of the lining of the stomach and intestines which can cause an acute onset of vomiting and diarrhea.
- Sometimes referred to as “stomach flu” or “24 hour flu” although it is not related to the flu or influenza.



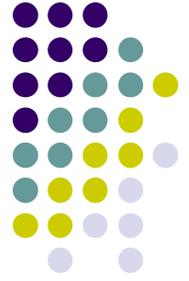
Norovirus

- In 2002 Norovirus was the name officially approved for this group of viruses. Formerly known as Norwalk-like viruses (NLV).
- The first outbreak was identified in Norwalk Ohio in 1972.
- Most common cause of nonbacterial gastroenteritis outbreaks

Noroviruses



- Are commonly found throughout North America.
- They occur throughout the year but are most common during the winter months.
- They can affect all age groups.
 - Young children, the elderly, and people with other illnesses are at the most risk for severe disease or prolonged infection.



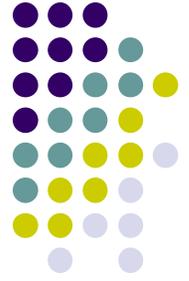
Clinical Presentation

- The average incubation period (the time from exposure to the time signs and symptoms first appear) is 12 to 48 hours with an average of 33 hours.
- The illness is characterized by acute onset of vomiting, watery, non-bloody diarrhea with abdominal cramps and nausea.
 - Fatigue, low grade fever, chills, headache and muscle aches are commonly reported.
 - Symptoms usually last 24 to 60 hours.

Norwalk Virus



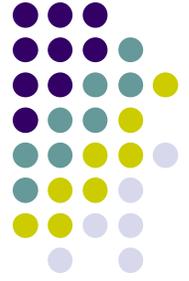
Cowden, J. M BMJ 2002;324:249-250



Transmission

- Norovirus is highly contagious with as little exposure as 10-100 virus particles sufficient to cause infection.
- Norovirus is transmitted in variety of ways but mainly through the fecal-oral route:
 - Through direct contact with another person who is infected;
 - By touching surfaces or objects contaminated with Norovirus;
 - By eating food or drinking water that has been contaminated.
- Norovirus can also spread by the droplet route from vomitus.

Transmission

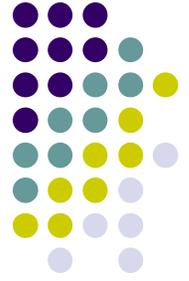


- Period of Communicability
 - People infected with norovirus are contagious from the moment they start feeling ill to at least three days after they recovered.
 - Some people may be contagious for as long as 2 weeks after recovery (immunocompromised individuals).

Treatment for Norovirus Infection



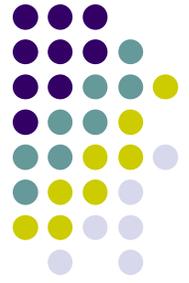
- There is no specific treatment for Norovirus.
 - They can not be treated with antibiotics because antibiotics fight bacteria, not viruses like Norovirus.
- Treatment is focussed on managing symptoms:
 - The very young and the very old are more susceptible to dehydration and may require intravenous fluids.
 - Ensure attention to hydration (drink plenty of fluids) to prevent dehydration.



Other Info on Norovirus

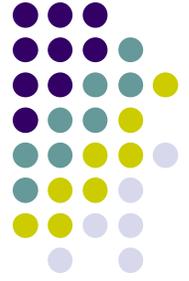
- There are no vaccines that prevent Norovirus.
 - The influenza vaccine will not protect you from Norovirus.
- You can be re-infected with norovirus throughout your lifetime.

When to Call Infection Control



- Refer to your Facility' s Orange Outbreak Manual – Gastric Outbreak Protocol
- Healthcare Facilities must report suspected enteric outbreaks to Infection Control and/or Medical Health Officer, within one working day or sooner.
- An enteric outbreak is defined as follows:
 - 2 or more residents/clients and/or staff members exhibiting signs and symptoms of gastrointestinal illness over a 24 hour period.

When to Call Infection Control



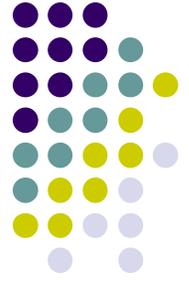
- Gastrointestinal illness is defined as (case definition):
 - 2 or more episodes of loose watery stool, above what are considered normal for the patient/resident/staff member, or
 - 2 episodes of vomiting in a 24 hour period, or
 - 1 episode of vomiting and 1 episode of loose watery stool in a 24 hour period, or
 - 1 episode of bloody diarrhea in a 24 hour period, or
 - 1 episode of explosive diarrhea in a 24 hour period.

When to Call Infection Control



- It is possible that an outbreak may be present that does not fit the definition of a gastrointestinal outbreak or the usual case definitions.
 - If you are concerned or are second guessing yourself it is better to err on the side of caution and discuss the situation with Infection Control and/or the MHO.
 - Incremental outbreak measures can be introduced to prevent the progression to an outbreak.

When to Call Infection Control



- Surveillance is a key element in preventing and controlling outbreaks.
- Facilities should maintain an ongoing surveillance for enteric illness.
- Often before outbreaks occur in our health care facilities there is usually significant illness occurring in our community.



Lab Confirmation

- If the facility is experiencing an outbreak, Infection Control/MHO will provide the facility with an outbreak number to speed up the processing of the specimen at SDCL.
- Stool specimens should be collected within 48 hours of onset of symptoms in the patient/resident.
- Norovirus is detected in stool specimens collected and sent to the Saskatchewan Disease Control Laboratory (SDCL).
 - Please refer to the Orange Outbreak Manual for stool collection samples needed.

Limiting the Spread in Health Care Facilities



- Please refer to the Orange Outbreak Binder in your facility and reread the Gastric Outbreak Protocol.
- Patients/Residents with unexplained or a potentially infectious enteric illness should be placed on Contact Precautions immediately without waiting for laboratory confirmation.

Limiting the Spread in Health Care Facilities

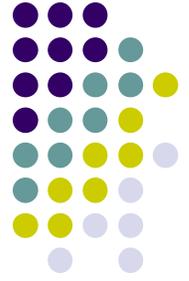


- Hand hygiene is most important measure we can do to prevent the spread of organisms. Use ABHR when hands are not visibly soiled and soap and water when hands are visibly soiled.
- Use gowns and gloves when in contact with or caring for patients/residents who are symptomatic with gastric symptoms.
- Use a procedure or surgical mask and protective eye wear if cleaning up projectile vomiting or explosive diarrhea.

Limiting the Spread in Health Care Facilities



- During outbreaks ill staff reporting symptoms similar to the case definition are excluded for a time period determined by the MHO or Infection Control.
- During outbreaks the facility will be closed to all admissions, transfers and visitors.
- As in any gastric outbreak, a Public Health Inspector will visit the facility to review food handling procedures.



Cleaning and Disinfecting:

- Noroviruses are relatively stable in the environment and survive in high levels of chlorine and temperatures.
 - They can survive on practically any surface including door handles, side rails, sink faucets and toilets.
- Routinely clean and disinfect the high touch surfaces and equipment that patient and staff use.



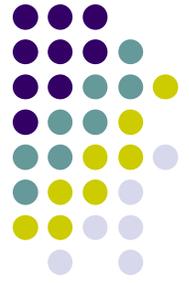
Cleaning and Disinfection

- Different cleaning solutions are recommended with either accelerated hydrogen peroxide or water and bleach (1:50).
- It is important to remember if bleach is used then the room/area must be cleaned first with the normal germicidal product (Enviro Chem) then cleaned a second time with diluted bleach.
 - Bleach is not a cleaner – it is a disinfectant.



Foodborne Transmission

- Most foodborne outbreaks likely occur when food is contaminated by a food handler who has the virus, especially if they do not wash their hands properly after using the washroom.
- Some foods can be contaminated at the source for example – oysters may be contaminated by sewage in water before they are harvested.
- Drinking water can become contaminated by sewage (for instance during floods).



Food handler precautions

- Wash hands with soap and warm water after toilet visits and before preparing or eating food.
- Cook all shellfish thoroughly before eating.
- Wash raw vegetables before eating.
- Food handlers with symptoms of Norovirus-like illness should not prepare or touch food.
- Remember that humans are the only known hosts and food handlers are a common source of infection.

Other Methods to Prevent Norovirus Infections at Home:



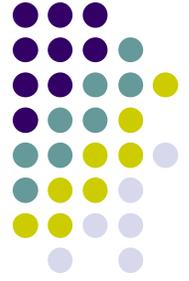
- Wash hands frequently, especially after using the washroom, changing diapers, and before eating or preparing food.
- Do not eat raw or undercooked oysters or other shellfish.
- Wash fruits and vegetables thoroughly before eating.
- Thoroughly clean contaminated surfaces immediately with hot soapy water and then disinfect the area using a household disinfectant.

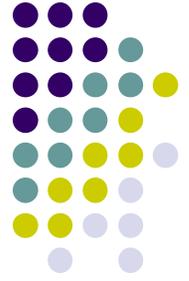
Other Methods to Prevent Norovirus Infections at Home:



- Immediately remove and wash clothing that may be contaminated with stool or vomit.
- Flush or discard any vomit and/or stool in the toilet and make sure the surrounding area is kept clean.
- If you do become infected, avoid contact with others until you are well again and avoid preparing food while you have symptoms and for 3 days after you recover.

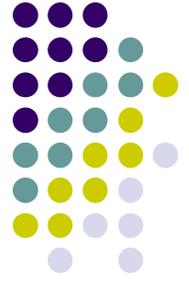
Questions?





References:

- CDC Norovirus in Healthcare Facilities Fact Sheet:
 - <http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus-factsheet.htm>
- PHAC Norwalk Virus MSDS
 - <http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/msds112e-eng.php>



References

- PHAC – Noroviruses Fact Sheet
 - <http://www.phac-aspc.gc.ca/id-mi/norovirus-eng.php>
- CDC Norovirus in Healthcare Settings:
 - <http://www.cdc.gov/ncidod/dvrd/revb/gastro/downloads/nor-o-hc-facilities-fs-508.pdf>
- SCHR Gastric Outbreak Protocol:
 - <R:\SCHR - Policies & Procedures\E - Environment\E-05 - Infection Control\E5-10-60-10 Gastric Outbreak Protocol 2008.pdf>



Media Reports

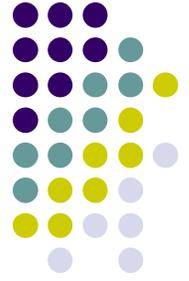
- Recent media reports based on a CMAJ news article about an original article published in the American Journal of Infection Control (AJIC) Volume 39 Number 4 reported LTC facilities were more likely to see outbreaks of norovirus if staff used hand sanitizers for routine hand cleaning of soap and water.
- The full CMAJ article can be found at the following website:
http://www.cmaj.ca/site/earlyreleases/10aug11_hand-sanitizers-may-increase-norovirus-risk.pdf
- If anyone is wanting to review the original article published in the AJIC, I can provide you a copy of the article.



Media Reports

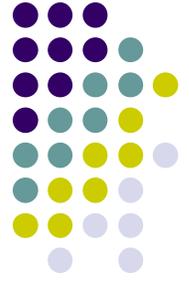
- It is important to point out the full article indicates: “No objectively measured data could be collected to confirm staff use of ABHS or soap and water and reporting of these practices was subject to the IP observation of routine activities and recall bias.”
- “The results of this study indicate that the use of ABHS relative to soap and water handwashing should be further evaluated to determine the relative efficacies at preventing and controlling norovirus outbreaks in LTCFs.”

CMAJ May 2011



- States “Effective infection control practices such as consistent hand hygiene practices, appropriate environmental cleaning procedures, institution of contact precautions (such as use of gowns and gloves when working in rooms with symptomatic patients), and ward closures as appropriate are critical to prevent morbidity resulting from such gastrointestinal viruses in these facilities”.

World Health Organization (WHO)



- “Norovirus: the efficacy of ABHR against noroviruses varies with type and concentration of alcohol in the formulation, with a minimum 60% concentration of ethanol required for good activity.
 - WHO experts recommend the use of ABHR during outbreaks of norovirus gastroenteritis.
 - http://www.who.int/gpsc/tools/faqs/system_change/en/index.html#