Interim Guidance Note on Managing Norovirus in Residential Care Settings (November 2023)

1. What is Norovirus?

1.1. Norovirus is a virus that causes infectious vomiting and diarrhoea. It is sometimes called the "winter vomiting bug", although it can occur all year round. Vomiting can be very forceful ('projectile vomiting'). A fever often develops. The infection is usually mild, with symptoms lasting 12-72 hours. A person will become sick within 24 hours (range 12 to 48 hours) of becoming infected. **Norovirus is extremely infectious.** It takes only a tiny number of norovirus particles to produce illness.

1.2. Norovirus infection is very common, and outbreaks occur anywhere people gather together, such as in hospitals, residential care facilities (RCFs), hostels, reception centres or hotels. In enclosed or congregate settings, norovirus can - if not quickly bought under control - spread rapidly to the majority of people in a facility or building. **When two or more people in the same building/area/room/group develop vomiting, within a day or so of one another, there is a high likelihood that this may be due to norovirus.**

1.3. Although norovirus infection is usually mild, vomiting can, very occasionally, be severe or prolonged, especially if accompanied by diarrhoea. If this happens, dehydration can quickly become a problem, leading - in the most severe cases - to kidney failure and other serious complications. This is most likely to happen in young children, elderly people, those with underlying medical conditions, and patients with weakened immune systems.

2. How is it spread?

2.1. Noroviruses are primarily spread by the faecal-oral route – generally person-to-person or by direct or indirect contact with infectious vomit or faeces. Spread can also occur through contaminated food or water.

2.2. **Person-to-person**: is the main method of spread of norovirus. The virus is present in the vomit and stool of an infected person. When a person with norovirus vomits, the vomit can be sprayed over a large area. If a person has norovirus on their hands, they can easily pass it on to another person. If food, water or the environment becomes contaminated with infected vomit

or stool, it can easily spread to other people. Food handlers and other staff members who are sick, or recovering with norovirus can also pass the virus on.

2.3. **Contact, Droplet**: when someone vomits, projected droplets of vomitus will quickly settle on exposed surfaces, contaminating the immediate environment. Transmission is contact (faecal-oral) transmission or by the droplet route if droplets are generated during the symptomatic stage. These contaminated particles droplets and particles will settle on surfaces such as door handles, tables, sideboards etc. If anyone touches the contaminated surfaces, and then touches their mouth with their fingers, they are at risk of becoming infected. For this reason, use of appropriate PPE, as determined by point of care risk assessment (PCRA) essential when managing vomiting patients.

2.4. **Foodborne**: any food item can become contaminated through handling (especially from staff infected with norovirus who handle food) or if the food is exposed to environmental contamination.

3. How is Norovirus prevented?

3.1. The principles of prevention and control of norovirus in acute healthcare settings and RCFs are laid out in the National Guidelines on the Management of Outbreaks of Norovirus Infection in Healthcare Settings (2003). NCEC National Clinical Guideline No. 30 Infection Prevention and Control lays out the governing principles of infection prevention and control.

3.2. Prevention and control of norovirus in RCFs depends on:

1. Ensuring that **appropriate cleaning protocols**, and plans to prevent norovirus, are in place and strictly adhered to
2. Having a **high index of suspicion** that any episode of vomiting may be due to norovirus
3. Assuming that **all vomit is potentially infectious**, even vomit that appears to have a plausible, non-infectious origin such as vomiting associated with medication/chemotherapy, pregnancy, post-operative procedures, trauma, etc.
4. **Immediate cleaning and decontamination** of all vomit and faecal soiling
5. If you are **suspicious that a norovirus outbreak is occurring**, call your local Public Health Area, and seeking advice from them, and your local Community Health Organisation (CHO) Infection Control team, , and
6. Ensuring that **heightened cleaning and disinfection is implemented during outbreaks**, as laid out in the National Guidelines on the Management of Outbreaks of Norovirus Infection in Healthcare Settings.

3.3. In preventing spread of norovirus in a healthcare setting, prelease refer to the NCEC National Clinical Guideline No. 30 Infection Prevention and Control. The following preventive factors are key:

1. Hand Hygiene

When norovirus is suspected/ known to be present and gloves have not been worn, a combination of hand hygiene strategies may be required to reduce transmission. This should include hand washing with soap and water for at least 20 seconds to facilitate the mechanical removal virus.[1] Longer hand washing is likely to be required if visible soiling is present.

If gloves are worn during the care of patients in settings where norovirus is suspected or known to be present, spore/virus contamination of the hands will be minimal and alcohol-based hand rub remains the agent of choice for hand hygiene. Hand hygiene should be performed:

- After using or cleaning the toilet
- After attending to anyone with diarrhoea or vomiting
- After touching anything contaminated by diarrhoea or vomiting
- After handling contaminated clothing or bedding (including incontinence wear)
- Before handling, preparing, serving, or consuming food or drink
- Whenever healthcare is provided, the World Health Organization's 5 Moments for Hand Hygiene apply.

2. Regular, routine environmental cleaning:

- Using warm water and detergent; followed by disinfection with the recommended concentration of 1000ppm of hypochlorite solution.[2]

[1] In the presence of known or suspected *C. difficile* and norovirus, hand hygiene must be performed as follows:

- If gloves are worn and appear intact on removal, then alcohol-based hand rub remains the agent of choice for hand hygiene.
- If gloves have not been worn, if gloves have been breached or if there is visible contamination of the hands despite glove use, use soap and water to facilitate the mechanical removal of spores/virus.

After washing, hands should be dried thoroughly with a single-use towel.

[2] In general, to make a 1000ppm of hypochlorite solution, add 1 part of normal household bleach to 50 parts of tap water. However, the concentration of supermarket domestic bleach solutions can vary and the dilution recommended by the manufacturer for disinfection of surfaces should be used. Always allow sufficient contact time to ensure effective disinfection. The use of sodium hypochlorite disinfection in addition to cleaning with a detergent solution is recommended for terminal disinfection following norovirus outbreaks.

- Noroviruses are very resistant to cleaning and disinfection. Temperatures of a **minimum** of 60˚C, or a 1000ppm hypochlorite solution are required to inactivate the virus.
- When applying 1000ppm of hypochlorite solution, it is important to allow sufficient contact time to ensure effective disinfection.

3. **Strict attention to routine hygiene:** in the kitchen, and in toilets and bathrooms. If a toilet has been used by someone who has vomiting or diarrhoea:
    - Conduct a point of care risk assessment to support appropriate choice of PPE
    - When cleaning the toilet, always wear appropriate vinyl or nitrile gloves and a plastic apron
    - Disinfect the toilet seat with hot water followed by 1000ppm of hypochlorite solution using a disposable cloth.
    - Wash and disinfect with 1000ppm of hypochlorite solution the flush handle, toilet door handle, wash hand basin taps, towel dispenser, light switches/pulls after use, as well as other high touch surfaces
    - Clean the toilet bowl using a toilet brush and a 1000ppm of hypochlorite solution
    - Always flush the toilet with the seat and lid down, and
    - Dispose of PPE appropriately once cleaning is complete,
    - Finally, carry out hand hygiene.

4. **Rapid cleaning/disinfection:** following any episodes of vomiting especially in toilets, communal and food preparation areas. This should be undertaken using a point of care risk assessment. The focus of cleaning should be on the immediate area of contamination, and on surfaces and items regularly touched by hand e.g. door handles, lift buttons, wardrobe/drawer handles, toilet flush handles, hand towel dispensers, taps, anglepoise lamps, light switches, TVs, TV remotes, laptops, bannisters, handrails, drug/food trolley handles, counter tops, work surfaces, etc.
   It is important to be aware of the risk of cross contamination from all surfaces and materials in the near vicinity of bathrooms, where virus may have been aerosolised e.g. laundry storage, food trolleys in the proximity of bathrooms etc. This is essential to prevent cross contamination. Food handlers must **never** be allowed to be involved in cleaning or decontamination following episodes of vomiting.

5. **Cohort/isolate ill residents** and keep them separate from other residents. Residents can mix as normal, but only 48 hours after their vomiting and diarrhoea has stopped. Public Health will advise in relation to necessary exclusion times.

6. **Exclude ill staff** from work for 48 hours after their vomiting and diarrhoea has stopped. People who have been ill will pass norovirus out of their bodies (shedding) for at least two days after they have recovered from their vomiting and diarrhoea. Allowing staff to return to work within 48 hours is very likely to reintroduce infection into the RCF. **Strict exclusion is especially important in the case of food handlers** (see NCEC National Clinical Guideline No. 30 Infection Prevention and Control Section 3.7.2 Exclusion periods for health care workers with acute infections, for more details)**.**

7. **Early recognition of norovirus outbreaks:** If two or more residents or members of staff develop sudden onset vomiting within a day or so of one another, it is very likely to be a norovirus outbreak. If this happens, immediately call your local Public Health Area and ask for advice.

4. What to do if someone vomits in a residential care facility

4.1. In general, if a resident in a RCF vomits once and subsequently feels well, they may not necessarily have norovirus – but the **vomit should be treated as potentially infectious**, and disposed of properly. However, if the resident continues to feel unwell, or vomits repeatedly, norovirus illness must be suspected.

4.2. If any resident vomits, the staff member who witnesses, or is called to deal with the episode, should immediately:

- **Cover** the area of vomit
- **Clear** other residents away
- **Cordon** off the immediate area, and
- **Clean** and decontaminate the area **wearing appropriate PPE**.[3] When cleaning, pay special attention to the area where the person vomited, and all hand-touch surfaces (counter tops, toilet flush handles, TV remote controls, door handles, call bell cords/buttons, light switches, etc) that the person may have touched. You will find comprehensive advice and guidance here on how to clean up and decontaminate after

[3] See HSE Infection Prevention and Control Point of Care Risk Assessment

someone has vomited. For full information see NCEC National Clinical Guideline No. 30 Infection Prevention and Control.

4.3. In the event that other residents develop vomiting – at the same time or within a day or so – assume that an outbreak is occurring, and urgently inform your local Public Health Area – they will advise you on the immediate steps you need to take.

NB: if any person who develops vomiting, becomes very unwell, call their GP or Emergency Department by telephone for advice. Suspected outbreaks of norovirus must be notified to your Regional Department of Public Health and reported to your local Infection Control Team.

5. Managing a norovirus outbreak

5.1. Following episodes of vomiting, Public Health staff may - depending on the situation - decide that an outbreak is occurring. If an outbreak of norovirus is identified, Public Health staff will review the situation, and provide advice as to what should be done. They may also undertake a risk assessment to inform admission/visiting policy while the outbreak is ongoing.

5.2. It may be decided that effective control can be achieved by the early closure (within three days of onset of illness of index case to minimise contamination) of affected bays rather than closing an entire ward or unit. Management staff of RCFs should ensure that they contact CHO Infection Control teams to receive advice and support. Strict cleaning and disinfection regimes must be put in place immediately an outbreak is identified (see NCEC National Clinical Guideline No. 30 Infection Prevention and Control for further details of outbreak management and prevention).

5.3. There is a statutory requirement for clinicians and directors of clinical laboratories to notify any outbreaks of infectious disease, and individual cases of notifiable infections the Medical Officer of Health (in the relevant Department of Public Health).

5.4. In an outbreak of viral gastroenteritis, health care workers must not return to work until diarrhoea and vomiting have ceased for 2 days. It is extremely important that health care workers comply with appropriate hand hygiene methods and IPC practices upon return to work

5.5. If Public Health staff decide that an outbreak is occurring, they will take advise on the steps necessary to prevent the outbreak from spreading further and bringing it under control. See NCEC National Clinical Guideline No. 30 Infection Prevention and Control for further details of outbreak management and prevention. The essential early steps in control of an outbreak will include:

- Immediate cleaning and environmental decontamination of soiled areas,
- Frequent hand washing with warm water and soap for all staff and patients,
- Segregation of those who are ill from those who are not (cohorting), with limitation of movement of staff and patients,
- Strict exclusion of ill staff from work for 48 hours after their last episode of vomiting and/or diarrhoea
- Effective terminal cleaning (which can begin as soon as an affected area has been vacated), and
- Sensible management of visiting. If warranted by circumstances, a decision may be required to limit visiting for the duration of the outbreak.

5.6. Once an outbreak is declared by Public Health, a series of conditions will have to be met, before the outbreak can be declared over, and new patients admitted to the bay/ward/unit. These will normally include, at a minimum:

- A period of at least 48 hours having elapsed since the resolution of vomiting and/or diarrhoea in the last known case, and at least 72 hours after the initial onset of the last new case (whether a resident or staff member), **AND**
- The satisfactory of completion of terminal cleaning.

5.7. A return to normal activity may be possible, even if a small number of residents with persistent symptoms remain, if these are effectively segregated from the main body of residents. Public Health will advise in relation to this.

NB: See NCEC National Clinical Guideline No. 30 Infection Prevention and Control for further details of outbreak management and prevention). A necessary control measures checklist in a healthcare setting is available in Appendix 1. **Strict adherence to these principles is necessary to ensure control of outbreaks of norovirus in healthcare settings**.

Appendix 1 – Norovirus Outbreak Control Measures Checklist

1. Cohort nurse or isolate symptomatic individuals in a designated ward if possible.
2. Take faecal specimens (not vomitus) if at least 2 or more people (patients or staff) have suggestive symptoms in a unit, ward or defined area.
3. In general, a maximum of five specimens should be taken from affected patients – this is generally sufficient to determine the diagnosis
4. Immediate placing of Alert Notices around the hospital and emphasise hand hygiene by use of large posters in all toilet areas
5. Sensible management of visiting
6. As soon as an area or unit has an outbreak, the frequency of cleaning of the affected area must be increased to twice daily
7. Wear gloves and apron for contact with an affected patient or environment
8. Wash hands with soap and water and dry thoroughly after contact with an affected patient or environment, after removing gloves and apron
9. Staff should be advised that if they become unwell on duty that they should go off duty immediately
10. Strictly exclude affected staff from duty immediately and until 48 hours after their last episode of vomiting or diarrhoea
11. Consider ward closure to prevent the introduction of new susceptible individuals
12. Avoid transfer to unaffected wards/departments (unless medically urgent and after consultation with infection control staff) or to residential/nursing institutions. Patients can be discharged home providing that they are medically fit for discharge. The priority is to stop spread of the virus to other vulnerable areas
13. It is important to minimise the circulation of staff between affected and unaffected areas
14. Remove any exposed food, such as fruit
15. Clean and disinfect vomit and faeces spillages promptly
16. Regular cleaning of key areas such as communal toilets and the kitchen areas with increased frequency if norovirus is suspected or confirmed
17. Increase the frequency of routine ward, bathroom and toilet cleaning to a minimum of twice daily, and provide adequate hand-drying facilities
18. Use freshly prepared 1000ppm hypochlorite solution to disinfect hard surfaces after cleaning
19. Implement any other measures as determined necessary by an Outbreak/incident Control Team

20. The ward should not be re-opened until 48 hours after the last episode of vomiting and/or diarrhoea in the last known case, and at least 72 hours after the initial onset of the last new case.

Appendix 2 – Case Study

A useful case study on norovirus is included in Section 7.7.9 — Table 55 - Risk-management: Case study for norovirus outbreak in a long-term care facility (NCEC National Clinical Guideline No. 30 Infection Prevention and Control).

Further information on norovirus can be found below:

HPSC: Factsheets on norovirus

HPSC: Norovirus

HPSC: National Guidelines on the Management of Outbreaks of Norovirus Infection in Healthcare Settings (2003)

HPSC: Other norovirus guidance

Department of Health: NCEC National Clinical Guideline No. 30 Infection Prevention and Control

HSE - Norovirus Patient information leaflet

HSE: Norovirus