Health Protection Scotland

NHS National Services Scotland

General information to prepare for and manage norovirus in care settings

Version: 1.0
Date: September 2016
Status: Final

Contents

1. Introduction

Noroviruses spread very effectively in care and community settings. As immunity is short lived, prevention of all norovirus outbreaks in care settings is impossible. However, it is possible to minimise the incidence of norovirus outbreaks, and when they occur to limit their impact and the disruption to normal care services.

All care staff should be familiar with Standard Infection Control Precautions (SICPs) and Transmission Based Precautions (TBPs) as per the National Infection Prevention and Control Manual (NIPCM). Norovirus Control Measures should be deployed in addition to SICPs and TBPs on the advice of the Infection Prevention Control Team (IPCT)/Health Protection Team (HPT).

To minimise the impact that norovirus can have, care staff must be able to recognise, report and control an outbreak quickly.

2. General information about noroviruses in care settings

Noroviruses	Noroviruses are non-enveloped viruses belonging to the *Caliciviridae* group. Former names for this group include Norwalk-like viruses, Winter Vomiting Disease viruses, and Small Round Structured viruses.
Clinical manifestations	Noroviruses cause a gastrointestinal infection which is characterised by: acute onset of non-bloody watery diarrhoea and/or vomiting – which if present is often 'projectile'. Also present may be: abdominal cramps, myalgia, headache, malaise and a low grade fever in up to 50% of cases.
Incubation period	Usually 12-48 hours. Reported as early as 10 hours post exposure.
Infectious dose	Very small, between 10-100 virus particles.
Duration of illness	Norovirus gastrointestinal symptoms usually resolve within 2-3 days – but 40% of patients can still be symptomatic at 4 days.
Period of infectivity	Patients/residents (and staff) should be considered infectious whilst they are symptomatic and until they are symptom free for a minimum of 48 hours or stools have returned to their normal (pre-infection) pattern for 48 hours. Noroviruses can be detected in stools even after symptoms have resolved and stools have returned to normal. The impact of this on cross-transmission is unknown. Immunocompromised patients can excrete the virus for considerable periods of time.
Diagnosis	Norovirus should be suspected in any patient who develops diarrhoea with or without vomiting without other obvious cause **(See Definitions (Cases) below)**.

Reporting norovirus outbreak	**Hospital Setting**: Inform the IPCT if norovirus infection is suspected as well as the Microbiology laboratory, as testing for norovirus is not routinely conducted on all faecal samples. **Care Setting (care home):** Inform the local Health Board HPT and Care Inspectorate. The HPT will investigate and manage the outbreak in conjunction with the care setting.
Definition (Cases)	**Possible Norovirus Case:** A person (or staff member) who, within a 24 hour period has, 3 or more episodes of non-bloody diarrhoea*, **AND/OR**, 2 or more episodes of vomiting, without having any other obvious cause for symptoms. **Confirmed Norovirus Case:** A person (or staff member) who, within a 24 hour period has, 3 or more episodes of non-bloody diarrhoea*, **AND/OR**, 2 or more episodes of vomiting, without having any other obvious cause for symptoms **AND** who has tested positive for norovirus. *Does not include loose stools induced by laxatives or enemas. In the absence of other causes, projectile vomiting is a diagnosis of norovirus.
Definition (Outbreak)	Two or more linked cases of norovirus associated with the same healthcare setting over a specified time period
Severity of illness	Usually self-limiting and considered mild. Mortality as a consequence of norovirus can occur and does occur, particularly in elderly patients with co-morbidities.
Patient assessment	Patients must be regularly assessed for infection throughout their stay this must be documented in their notes. Norovirus infection can cause rapid dehydration particularly in elderly patients. Therefore symptomatic patients/residents should have their fluid balance monitored and receive rehydration as necessary. Assuming bacterial causes, e.g. *C. difficile*, have been ruled out, anti-emetics may help symptomatic patients.
Specimens	Discuss with local Board IPCT/HPT/GP /Occupational Health regarding faecal specimen collection/testing/results from symptomatic patients/residents (and staff). All specimens should also be sent for bacterial culture, C.*difficile* toxin testing and virology. Use a Norovirus Outbreak Data Record to update specimen collected, awaited or the specimen result

Modes of transmission	Contact via the faecal-oral route and airborne via inhalation followed by ingestion of norovirus-contaminated aerosolised vomit. **Direct Contact** Hands come into contact with faecal matter and subsequently touch the mouth. **Indirect Contact** Hands come into contact with contaminated equipment or contaminated surfaces and subsequently touch the mouth. Consumption of faecal contaminated food or water. **By droplet transmission** A person with excessive vomiting can spread large quantities of virus in droplets which can contaminate surfaces. These droplets can remain in the air, travel over a distance and still be infectious. The spread of norovirus can then occur when others inhale and then swallow these droplets.
Environmental survivability	Noroviruses can survive on any surface including equipment for at least a week and even on refrigerated food for up to 10 days.
Discharge and Transfer restrictions	A patient may be discharged from hospital to their own homes providing relatives/carers are aware of the norovirus situation from where they were discharged. If symptoms develop after discharge patients/carers should inform their GP. Avoid transferring any patient from a closed ward, bay or care setting to other hospitals/clinical areas/care homes unless there is a clinical need/priority (the receiving clinical area/care home/hospital must be fully informed of the norovirus situation). If a person requires transport service/ambulance they must be informed of the norovirus situation. Persons who are 48 hours symptom free may travel with others.
Temporary Suspension of Visiting (TSV)	Care settings affected by norovirus outbreaks may consider TSV to all but essential visitors to reduce the risk of further spread. This must be discussed with IPCT/HPT before implementing. If TSV is deemed necessary care settings should ensure this is communicated internally and externally. i.e. public, staff members, visitors.

3. Preparedness for the norovirus season

Norovirus season starts every year usually in October. To ensure care settings within NHS Boards are prepared '*About a month to go to norovirus season'* reminders are issued by Health Protection Scotland (HPS).

Information and resources for staff and visitors can be found at
http://www.nipcm.hps.scot.nhs.uk/a-z-pathogens/

4. Norovirus Outbreak Control measures

The Board IPCT or HPT will undertake a risk assessment of a possible norovirus outbreak and determine whether there should be complete or partial restriction of admissions/transfers to the care setting.

NB The Norovirus Outbreak Daily Checklist and Norovirus Outbreak Data Record enables care workers to keep an up-to-date record of those affected by the outbreak and that the control measures are in place

	Possible room sharing options for patients in a clinical setting	**Patient Management**
1	Bay contains a mixture of symptomatic possible or confirmed norovirus cases and exposed asymptomatic patients	If sufficient single rooms are available, isolate case(s) in a single room(s) leaving exposed asymptomatic patients in the closed bay Do not move out exposed asymptomatic patients to share a bay with non-exposed patients If exposed asymptomatic patients have been discharged or are in alternative accommodation (but not with non-exposed patients), other possible or confirmed cases could be moved in to share the bay.
2	Bay contains exposed asymptomatic patients	Do not move in symptomatic possible or confirmed cases. Can share accommodation with non-exposed patients if it is >=48hours since the exposed asymptomatic patients' last exposure to a possible or confirmed case
3	Bay contains non-exposed patients	Can share accommodation with other non-exposed patients Can share accommodation with exposed asymptomatic patients if >=48 hours since their last exposure to a possible or confirmed case

5. Local Escalation Plan (hospital setting)

When Norovirus Control Measures fail to stop an outbreak, there are likely to be one of two reasons for this:

- The Norovirus Control Measures have not been applied correctly (inability to implement or failure to comply).
- The Norovirus Control Measures are insufficient to prevent outbreaks.

NHS Board IPCTs must investigate if control measures have been implemented correctly and respond accordingly. If the Norovirus control measures are proving to be insufficient the Incident Management Team should consider the following:

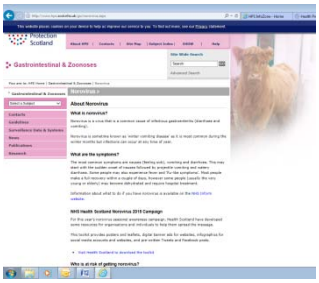
- Undertake an asset assessment of all ward facilities possibly available for reconfiguring wards/care setting.

- Consider all options for possible ward configurations that would ease pressure and the number of empty beds in closed wards.
- Agree ward configurations for optimal patient safety and maintenance of services. This may include amalgamation of symptomatic cases in a single ward to allow deep cleaning and reopening of some areas more quickly.
- To reduce the number of closed wards, consider opening a ward for all patients with diarrhoea on admission and patients with possible or confirmed norovirus infection.
- Extending the ward closure time to 72 hours after last vomiting/diarrhoea episode.
- Temporarily switching hospital wide detergent to a hypochlorite agent for standard cleaning in non-outbreak wards to cover the duration of the outbreak.
- Contacting HPS for advice.

Weblinks to norovirus materials

HPS Norovirus webpage

http://www.hps.scot.nhs.uk/giz/norovirus.aspx

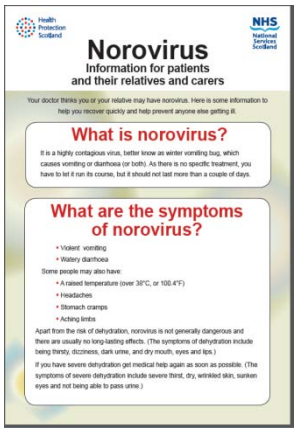


Norovirus frequently asked questions

http://www.hps.scot.nhs.uk/haiic/ic/resourcedetail.aspx?id=593

Norovirus: information for patients and their relatives and carers

https://www.hps.scot.nhs.uk/haiic/ic/resourcedetail.aspx?id=596



Norovirus Poster – Guidance on outbreaks of norovirus in care homes

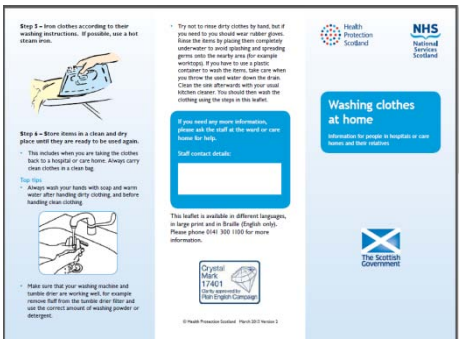
https://www.hps.scot.nhs.uk/giz/resourcedetail.aspx?id=1597

Norovirus – monthly and seasonal tracker

https://www.hps.scot.nhs.uk/pubs/detail.aspx?id=1685

Washing clothes at home: Information for people in hospitals or care homes and their relatives

http://www.hps.scot.nhs.uk/haiic/ic/resourcedetail.aspx?id=945



Guidance for obtaining faecal specimens from patients with diarrhoea

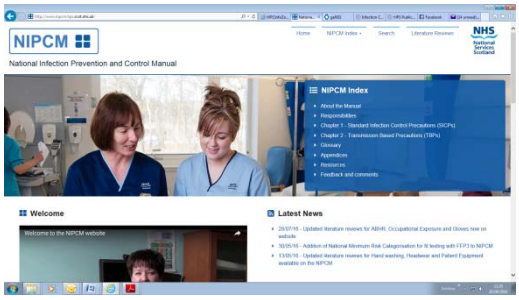
http://www.hps.scot.nhs.uk/haiic/ic/resourcedetail.aspx?id=177

Norovirus Stay at Home Campaign

http://www.healthscotland.com/resources/campaigns/norovirus.aspx

National Infection Prevention and Control Manual

http://www.nipcm.hps.scot.nhs.uk/



Norovirus Outbreak Daily Checklist

Hospital/Care Setting _____ Ward/Area:_____ IPCT/HPT informed date:	Shift/day							
Care area/setting closed to admissions and transfers – until **48** hours after last new case and **48** hours after last diarrhoea/vomiting incident. The ICD may extend the closure time.								
Care area/ single rooms/ bay doors are closed; there is an approved notice on the entrance of the care area door advising visitors what to do.								
IPCT/HPT /IMT and Ward team to consider the need for a Temporary Suspension of Visiting (TSV)								
All care workers in the care setting are: • Aware of the status of the care area and how norovirus is transmitted • Aware that unless deemed clinically necessary, non-essential staff (e.g. physiotherapists, occupational therapists) should avoid visiting affected areas – or at the very least avoid symptomatic persons. • Allocated (if possible) to care for either affected or non affected areas of the care setting • Are not allocated to work in affected care areas unless they are to remain so allocated for the duration of the closure • Aware of their duty to report when they have symptoms of gastrointestinal infection and not return or continue to work until they are **symptom free for 48 hours** • Aware that they should contact their Occupational Health Department for advice Consideration should be undertaken allocating bank and agency staff in affected areas. These staff members should be informed prior to commencement of shift. **NB. Any care worker reporting symptoms of gastrointestinal infection must be sent home and not be permitted to return to work until they are symptom free for 48 hours.**								
All persons (and relatives) in the care area are aware of the norovirus situation and have been given information leaflets on norovirus and the need for hand hygiene, and safe handling of personal laundry.								
All persons with symptoms of norovirus have been assessed today for symptom severity and assessed for signs of possible dehydration (Stool and Fluid Balance charts).								
Norovirus Outbreak Data Record (overleaf) The outbreak data collection record has been updated – including any new cases, the symptoms persons are experiencing today and laboratory data. (Stool samples have been requested from all symptomatic persons).								
Patient Placement Assessment: A patient placement assessment and any advised / suggested moves have been made.								

Personal Protective Equipment (PPE) –gloves, apron, surgical (mask/visor – if risk of facial contamination with aerosols). There are sufficient supplies of PPE in the ward/care area and staff are using it appropriately							
Hand hygiene: Hand hygiene is being carried out with liquid soap and warm water – this can be followed by alcohol based hand rub. Everyone is encouraged and given assistance to perform hand hygiene before meals and after attending the toilet. NB. All staff must follow the WHO 5 moments for hand hygiene							
Environment: There is increased cleaning of the environment including frequently touched surfaces, with neutral detergent combined with/followed by 1,000ppm av cl. [Cleaning records are up to date.]							
Equipment: Where possible single patient use equipment is used and communal patient equipment avoided. All reusable equipment is decontaminated after use (See Appendix 7 of the NIPCM). There are sufficient other sundries for effective control measure implementation.							
Linen: Whilst the care setting/care area remains closed, categorise all discarded linen as "infectious". See Appendix 8 of the NIPCM for further information.							
Spillages: All faecal and vomit spillages are decontaminated by staff wearing PPE. The spillage is removed with paper towels, and then the area (include a 3 metre circumference) is decontaminated with an agent containing 1,000 ppm av cl. All waste arising is discarded as healthcare waste. PPE is then removed and hands washed with liquid soap and warm water. See Appendix 9 of the NIPCM for further information.							
Today the IPCT/HPT has made an assessment of the continuing need for ward closure. The earliest possible date for reopening has been communicated to the clinical team, bed management staff and to those listed in the Outbreak Policy.							
In preparation for reopening – empty beds have been cleaned but left unmade.							
In preparation for reopening – the curtains in empty rooms have been taken down.							
In preparation for reopening – consider requirement for pre-booking a terminal clean and curtain change.							
Before reopening: a terminal clean has been performed following advice of IPCT/HPT and national guidance	n/a	n/a					

Norovirus Outbreak Data Record

Name of ward/care area:

Possible Norovirus Infection:

A person who, within a 24 hour period has 3 or more episodes of non-bloody diarrhoea*, **OR,** 2 or more episodes of vomiting, without having any other obvious cause for symptoms.

Confirmed Norovirus Infection:

A person who, within a 24 hour period has 3 or more episodes of non-bloody diarrhoea*, **OR,** 2 or more episodes of vomiting, without having any other obvious cause for symptoms **AND** who has tested positive for norovirus.

	Tick if symptom present (Antibiotics is abbreviated as [Abx])						Date and time					
Names numbers of all symptomatic persons (diarrhoea and or vomiting)	D = diarrhoea V = vomiting	Abx Y or N	Laxatives / enemas Y or N	Specimen date	Possible or Confirmed *	Other Info						

* Does the patient meet the definition of a Possible or Confirmed case?

Date (agree a time of day to be done)									Comment
No. of patients symptomatic									
No. of patients <48 hrs symptom free									
No. of empty beds									
No. of new care workers off duty with symptoms									
No. of bays with symptomatic patients									