Norovirus Outbreak Guidelines

Contents

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Purpose

To provide guidance for staff to prevent and control cross infection of Norovirus gastrointestinal disease.

Scope

All staff involved in the management of Norovirus patients and Norovirus outbreaks.

Associated documents

- CDHB Outbreak Management
- CDHB Transmission-based Precautions Isolation Guidelines
- CDHB Decontamination of the Environment Policy
- CDHB Decontamination of Equipment Policy
- Recommended Cleaning Products poster ref: 2257
- CDHB Laundry Guidelines
- CDHB Infection Prevention & Control considerations for transfer of patients with suspected or confirmed Norovirus from CDHB acute care to LTCF or ARC
- CDHB Norovirus Information Sheet
- Terminal Clean Checklist
- Burwood Hospital OPH&R Norovirus Outbreak Management Flowchart. Ref 238298

Equipment, forms and flowcharts

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- Flowchart for Norovirus Outbreak Management- Appendices C & D
- Isolation equipment and signage (see Appendix A for checklist)
- Line listing form (Appendix B)
- Bristol Stool Chart http://www.sthk.nhs.uk/library/documents/stoolchart.pdf
- Gastroenteritis outbreak posters

Definitions

Case definition

A case is defined by sudden onset of vomiting and/or diarrhoea.

Other symptoms can include nausea, abdominal cramps, myalgia, headache, chills and fever.

These symptoms are not associated with an underlying medical condition or existing illness, prescribed drugs treatments or a reaction to an anaesthetic.

The incubation period for the illness is estimated to be between 10-50 hours and mostly the illness is of short duration (median 36 hours).

Outbreak definition

2 or more cases of suspected or confirmed Norovirus that fit the case definition, within a defined geographical location e.g. ward or unit.

1 Specimens and Laboratory Testing

- Collect faecal specimens as soon as possible for suspected cases of Norovirus.
  - The initial diagnostic process of a patient with acute gastroenteritis must include testing for Microscopy, Culture & Sensitivity (MC&S), Norovirus, other gastro viruses and Clostridium difficile.
  - The specimen should be a non-solid, diarrhoeal faecal specimen. The lab will not process a formed stool sample.
- If faecal specimens are unavailable, specimens of vomitus can be submitted for laboratory identification of Norovirus. However this type of specimen has a lower sensitivity for positivity due to lower detectable viral concentrations.
- The sensitivity of the Polymerase Chain Reaction (PCR) test for Norovirus is influenced by the quality and timing of the specimen as well as the circulation of different genetic strains. Hence, false negative results can occur. A negative test result on a patient meeting the clinical case

definition does not exclude infection with Norovirus, especially in a clinical area with single or multiple confirmed cases.

- A positive Norovirus result and the presence of other patients meeting the case definition would indicate that the causative organism is most likely Norovirus.
- Asymptomatic infection is also possible
- In an outbreak with definite clusters or ward/unit wide spread, limit the number of specimens sent to three cases. There is little value in continued testing (which is expensive) whilst patients are obviously exhibiting Norovirus symptoms. However, the treating clinicians may request testing in a symptomatic patient if needing to rule out other gastrointestinal organisms.
- There is no indication for laboratory testing of faeces for Norovirus in defining viral clearance in patients who have formed stools as viral excretion persists well beyond the symptomatic phase of the illness. Norovirus can be detected in patients for weeks after the initial infection.

2 Hand hygiene

When dealing with patients with suspected or confirmed Norovirus, use soap and water for hand hygiene after providing care or having patient contact.

Continue to use alcohol based hand rub prior to patient contact or procedure to protect against other organisms.

3 Single case of suspected Norovirus

In the event that a patient presents with, or develops, diarrhoea and/or vomiting with no obvious cause, the following actions are taken immediately (refer also Appendices C & D):

3.1 Single Room available

- If the patient is in a multi-room, move the patient into a single room - preferably with an ensuite bathroom
    - If no ensuite available provide a dedicated toilet or commode
- Implement Contact Precautions. Change to Contact & Droplet Precautions if the patient is actively vomiting
    - Ensure the correct isolation sign is placed on the door
    - Maintain precautions until 72 hours after last symptoms
- Provide dedicated equipment to patient

- Maintain an accurate bowel chart until symptoms resolve. The Bristol Stool Chart is recommended (Appendix D).
- If moved from a multi-room, strip and clean bed with 1000 ppm sodium hypochlorite solution and request removal of privacy curtains. Only replace curtains and re-make bed after terminal clean of the entire room.
    - Close the bed space and rest of multi-room to any further admissions
    - Ensure any shared bathroom / toilet is terminally cleaned as above
- Place the patient contacts of the multi-room into Contact Precautions for 72 hours post exposure of the index case. If vomiting develops commence Contact and Droplet Precautions NB: this period will be extended if the contacts become symptomatic.

3.2 No single room available

- Patient to remain in multi-room.
- No further admissions to that room.
- All patients to be placed in Contact Precautions or Contact & Droplet if actively vomiting.
    - Ensure isolation signage is clearly visible on entry to the room
    - Ensure PPE is available at entrance to room (and changed between each patient)
    - Maintain precautions until 72 hours after last symptoms of last case
- Ensure equipment is dedicated to room and cleaned / disinfected between each patient use.
- Dedicated toilet facilities for all occupants.
- If practical allocate different toilets to symptomatic and non-symptomatic patients. If this is not possible have dedicated commodes for asymptomatic patients, ensuring they are thoroughly cleaned after each use.

4 Two or more cases - suspected outbreak

4.1 General management actions (refer also Appendices C & D)

- Notify the Infection Prevention & Control Service immediately. After hours contact is via the microbiologist on call.
    - The IPC Service may advise that a co-ordinated incident management (CIMS) process is implemented as per the CDHB IPC

Outbreak and Incident Management policy. This decision will be made in consultation with key stakeholders e.g. ward management, Duty Manager

- Print off and complete the Outbreak Checklist (Appendix A).
- Commence a line-listing of symptomatic patients and staff (Appendix B).
- Consider closing the ward/unit - refer 4.4.
- Maintain good communication with staff and other stakeholders e.g. Duty Manager, Director of Nursing, IP&C Service, contracted services.

4.2 Patient placement

- Where possible, isolate symptomatic patients in single rooms to protect other patients.
    - The decision to remove a symptomatic patient from a multi-bed room shall take into consideration the extent of exposure to the other occupants, their co-morbidities and the likelihood of them also becoming symptomatic
- If no single rooms available, cohort in a multi-room and follow 3.2 above.
- If two or more multi-rooms are affected consider the implementation of green, yellow and red patient categories.
- Ensure appropriate signage is visible outside each affected room.

4.3 Implementing traffic light categories

In the event of a suspected or confirmed outbreak, where two or more multi-rooms are affected, patient flow, bed management, and other outbreak considerations may be assisted by categorising the patients according to exposure and/or symptoms (refer table).

The implementation of traffic light categories is at the discretion of the nurse-in-charge

Category	Definition
Green	Patients have had no exposure or >72hrs post symptoms
Yellow	Asymptomatic contacts or positive case asymptomatic for ≥48 hours
Red	Symptomatic patient/s in room

- Determine the green, yellow and red categories for patients and rooms within the clinical area:

- Identify the different categories for patients and rooms on the patient board or Flow View.
- On some occasions, e.g. high volume of discharges, a Red room may become a Green room if all occupants are discharged/transferred before they meet the definition for a Yellow category and the room is terminally cleaned.
- Red and/or Yellow rooms must be terminally cleaned prior to changing to Green. Following terminal clean, rooms may be admitted into immediately, i.e. there is no 'stand down' time.
- Terminal cleaning takes place 72-hours post resolution of the last case, when the patient is discharged or when an entire multi-bed room has been vacated.
    - **Do not** remove isolation signage until all equipment and room has been terminally cleaned
- Red rooms may revert to Yellow rooms once all patients in the room have been asymptomatic for 48 hours.
- Red patients may be moved to clean beds (where possible) in Yellow rooms once asymptomatic for 48 hours.

4.4 Ward/Unit closure or partial closure

- Where an outbreak is difficult to control and a significant risk of Norovirus cross infection exists, closure of wards to new admissions may be considered.
- A directive to close is usually made by senior management following the principles of outbreak management and a CIMS response as outlined in the CDHB IPC Outbreak and Incident Management policy .
- In general the criteria for considering closure include:
    - ongoing new cases despite full implementation of outbreak control measures
    - the level of vulnerability among new admissions where there is a considerable risk of severe disease, e.g. elderly
    - the ability to provide an adequate service with reduced bed numbers
- If the ward/unit closes then access restrictions will be implemented and signage posted on the doors – see 5.3.

5 Staffing guidelines in an outbreak

5.1 Staffing of isolation ward/areas/rooms

- Immediately cohort staff into either Red/Yellow or Green rooms/patients (including any Hospital Aide special) to minimise the number of staff exposed to Norovirus. Cohort the staff for at least that shift where possible.
- Exclude all non-essential staff where possible. Permanent staff should work in the affected clinical area and/or Red/Yellow rooms wherever possible.
- If casual/bureau/pool staff are required to fill vacancies in the affected ward/unit they should be allocated to Green patients if possible.
    - If the requirement for casual/pool staff is for multiple days, try and ensure the same nurses are allocated to the outbreak area

5.2 Ward access restrictions for non-essential staff

- In a Norovirus outbreak, support services staff who work in other clinical areas may be restricted from accessing affected areas. This decision will be made in consultation with the outbreak committee and other key stakeholders and may include:
    - Catering staff
    - Orderlies
    - Pharmacy
    - Mail room delivery
    - Allied health staff working across several floors
    - Hospital volunteers / newspaper delivery staff
- Some of these staff may be able to enter the ward/unit after they have attended to all other clinical areas.

5.2.1 Catering staff

- It is unnecessary to use single use or disposable crockery or utensils into for Red and Yellow patients.
- Do not place items/food from meal trays from Red and Yellow patients in the ward/unit kitchen. They must be collected with meal trays directly from the patient rooms and returned to the main kitchen via ward meal trolley.
- Catering staff do not enter Red rooms. Nursing staff are responsible for giving out and collecting in meal trays in these rooms.

5.3 Ward Closure

In the event of a ward /unit closure the following access restrictions will be implemented (NB: these restrictions **ONLY** apply to full ward closure):

- Meal trolleys should be delivered just inside the ward/unit door and catering staff may be excluded from the affected ward/unit as decided by the outbreak committee in consultation with the catering management and unit/ward manager.
- Pharmacy may continue to deliver supplies.
- Allied Health who work across several wards/units should:
    - cohort their staff to Red/Yellow and Green patients whenever possible, or visit non affected wards first
    - Visit patients in the affected ward in the following order: Green followed by Yellow then Red
- Cleaning staff should work from Green rooms → Yellow rooms → Red rooms.
- In/out mail delivery will occur at the ward/unit door

5.4 Suggested duties for extra rostered staff

- Extra staff may be allocated to outbreak wards/units to assist with duties as requested
- The following are examples of the extra duties they may be required to perform.
    - Runner for staff working in Red rooms
    - Answer bells from Red rooms
    - Catering staff duties in Red rooms
    - Deliver meals and cups of tea
    - Sort out menus which will be checked by the kitchen staff
    - Ensure entrance to the ward/unit tidy
    - Assist with extra environmental cleaning – refer 6.2

5.5 Management of infected staff

- All staff (inclusive of casual and bureau) working in an outbreak area and whose symptoms meet the case definition must be **symptom free for 48-hours** before recommencing work anywhere in the hospital

5.6 Use of uniform or scrubs

- When working in an outbreak area, a clean uniform should be worn each day. Where change facilities are available, change out of the uniform at the end of the shift.
- There is no evidence to support the use of uniform scrubs to reduce the transmission risk.
    - On occasions, e.g. >two multi (4 or more bed)-rooms affected; full ward closure, scrubs may be authorised in consultation with the outbreak management committee
    - Refer also any local facility procedures for the use of scrubs in an outbreak.
- If scrubs are introduced, they shall be worn by staff caring for patients in Red and Yellow categories only.
- Aprons / gowns and other appropriate personal protective equipment (PPE), must be used in addition to scrubs when working in Red or Yellow rooms.
- Scrubs must not be worn outside the outbreak ward/unit at any time.

5.6.1 Scrubs availability:

- Ashburton - available at the onsite laundry in the first instance and then from Canterbury Linen Service
- Burwood - available through the Duty Manager (back of house linen supply).
- Christchurch Campus and CWH - located in cupboards in the Seminar room 4th floor Riverside. Refer to instructions on the cupboard door. Keys are accessed from the Department of Nursing or out of hours via the Duty Manager.

6 Visitor Restrictions

- Use signage on the ward/unit door to advise visitors of an outbreak. See IP&C Intranet site / posters and forms.
- Children are discouraged from visiting as they can easily become infected and shed the virus for longer, so can be a source for spreading vomiting and diarrhoea.
- Visitors are NOT routinely required to use PPE.
- Visitors should be discouraged from providing hands-on care whilst patients are acutely unwell. However where care **cannot be avoided** for cultural, religious or practical reasons, visitors should be provided with the correct PPE and instructions on use and safe removal

- Visitors should be made aware that:
  - Norovirus is highly infectious and everyone is susceptible
  - If any visitor develops vomiting and/or diarrhoea they are to stay away for 2 days (a full 48 hours) after the last symptom of vomiting and/or diarrhoea and until they feel well
  - Perform hand hygiene when leaving the isolation room and the ward/unit
  - Reduce the number of visits they make to the patient where possible
- Visitors are to be reminded **not to**:
  - use the ward/unit kitchen
  - use the ward/unit toilets
  - enter any staff areas such as the sluice room
  - eat or drink on the ward/unit
  - visit elsewhere in this hospital or any other hospital after leaving this ward/unit
  - visit a residential care or long term care facility

7 Environmental Cleaning and Disinfection

7.1 General Points

- Additional cleaning/disinfection should be implemented – refer 6.2
- Cleaning with a detergent must always precede disinfection.
- Cleaning should always occur from the unaffected or least contaminated area to the affected or most likely contaminated area.
- Use disposable cloths if available, otherwise use cleaning cloths once and send to laundry.
  - Change cloths frequently and between each bed space
  - Use a new clean cloth for each item in the toilet area i.e. one for hand basin, one for toilet
- Use a sodium hypochlorite 1,000ppm solution (2x0.5g Presept tabs in 500ml water) for environmental disinfection - this is the approved disinfectant for Norovirus. Make up a fresh solution every 24 hours.
- Vomiting poses a significant risk for cross infection as Norovirus particles can stay suspended in the air for approximately one hour after vomiting has occurred. If vomiting occurs:
  - Cordon off areas were vomiting has occurred

- All non-essential staff should exit the area
- All essential staff in the room as well as those entering the area must wear a gown and surgical mask

- Shared patient care equipment MUST be cleaned and disinfected after use with the approved cleaning agent and disinfectant.
- An un-resourced empty bed in a Red or Yellow multi bed room shall be stripped, cleaned and disinfected on discharge or transfer of the patient but **not remade** until after the room has undergone a full terminal clean.
    - Do not steam clean a bed space within a multi bed room while the room is still occupied because of risk of aerosolisation of Norovirus particles
- If staff are symptomatic at work, a terminal clean of staff toilets is required. Close toilet and contact Cleaning Services

7.2 Additional cleaning

- Additional cleaning/disinfection should be implemented in the event of an outbreak.
    - The nurse-in-charge is responsible for requesting additional cleaning from the cleaning contractors
- Use an approved disinfectant **daily** after cleaning in Yellow and Red rooms.
- Attention should be given to frequently touched points such as, taps, door handles, soap dispensers, call bells, bed rails, bedside tables and toilet/shower rails.
- All patient and staff toilet areas including flush button, hand rails, call bells, light switches, and door handles are cleaned at least 3 times per day during an outbreak.
    - One of these cleans shall be undertaken using a steam cleaner
- Ward staff are responsible for additional cleaning of ‘touch points’ and other high risk areas:
    - Staff areas and equipment including computer keyboards / ipads, notes trolleys, telephones etc should be cleaned / disinfected daily and as required. (Refer to CDHB IPC policy Decontamination of Equipment)
    - All door handles
    - Hand rails
    - Dirty Utility (sluice) room including, sanitizer handles, benches, sluice sink and anything else in dirty utility room not mentioned

7.3 Terminal cleaning

- On discharge of a patient or the complete vacation of a multi room request a terminal clean of the room and ensure any previously cleaned beds are cleaned again.
- Print out and follow the Terminal Clean Checklist on IP&C intranet site / Environmental Cleaning Terminal Clean Checklist

8 Patient Laundry

- If clothing from symptomatic patients is returned to relatives or carers for laundering they should be verbally given the following instructions on how to safely launder items in the home setting:
    - Wear domestic gloves
    - Where possible rinse away any faecal matter first
    - Soak in a product such as Napisan if available
    - Wash separately in a hot wash where possible
    - Hang in the sun to dry or tumble dry
    - Wash hands well after removing gloves or contact with the soiled items
    - Disinfect the laundry tub and any soiled areas in the laundry using dilute bleach – a tablespoon of household bleach per litre of water
    - For CDHB Residential and LTCF, refer to: Domestic Laundry Guidelines poster

9 Discharge and Transfer

- Discharge of patients in green and yellow categories is encouraged with notification to family, GP and receiving facility of the outbreak status.
- Symptomatic patients who are assessed as clinically well, may be discharged home by the attending team.
- Receiving healthcare facilities **must be notified** of the outbreak so they can undertake infection prevention and control measures

9.1 Transfer to aged residential care or long term care facilities

- Refer to CDHB Guidelines Infection Prevention & Control considerations for transfer of patients with suspected or confirmed Norovirus from CDHB acute care to LTCF or ARC
- In the event of LTC facilities refusing admission due to a Norovirus outbreak contact the IP&C Service for further advice

References

1. New Zealand Ministry of Health (2009) Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly care Institutions
2. HICPAC & CDC (2011). Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings.
3. Australian Government Department of Health and Ageing (2010), Guidelines for the public health management of gastroenteritis outbreaks due to Norovirus or suspected viral agents in Australia. Australian Government Communicable Diseases Network.

Appendix A: Checklists

Checklists are meant as a guide for staff managing outbreak and are not exhaustive

1. Immediate action checklist

Confirmed outbreak –Tick when completed	✓
Contact the IP&C Service for your area	
Commence line listing (Appendix B)	
Determine traffic light categories for patients or rooms as appropriate	
Implement appropriate precautions with signage	
If required cohort nursing & allied health staff	
Dedicate equipment to affected rooms	
Allocate toilet and bathrooms with signage	
Remind nursing staff to complete stool charts	
- request additional cleaning	
Locate scrubs as authorised and allocate dedicated change area. See section 5.6	
Restrict non-essential traffic as appropriate. See section 5.2	
Extra staffing as required	

2. Signage & communication checklist

Signage -Tick when completed	✓
Inform Duty manager	
Indicate patient/room traffic light categories on whiteboard/flowview	
Contact and Droplet Precautions signs	
Visitors sign & instructions outside ward/unit door	
Norovirus Patient Information leaflets available (download from IPC intranet site)	
Information at main entrance and Hospital/lift if required	

3. Equipment Order Checklist

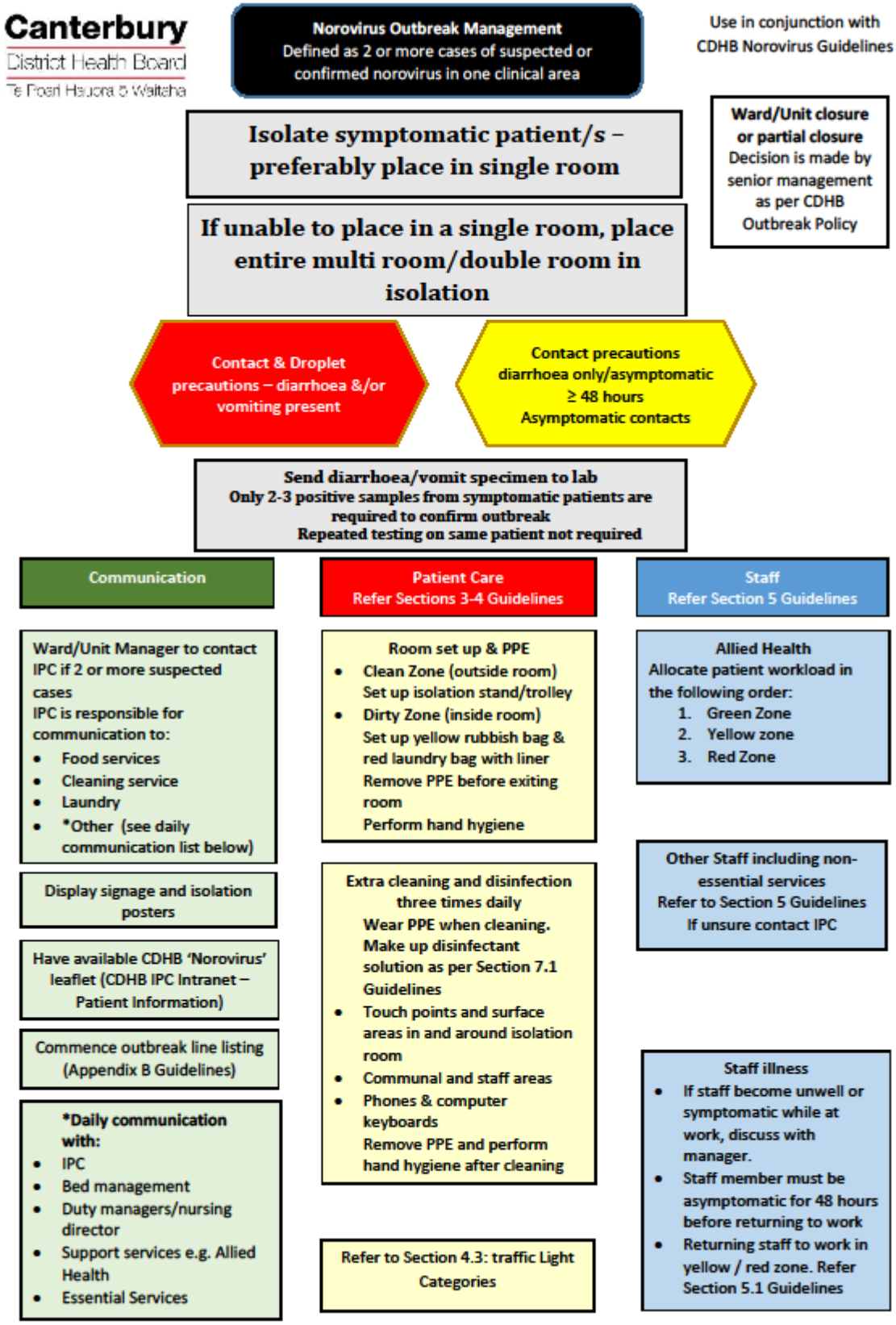
Equipment order -Tick when completed	✓
Scrubs as authorised see section 5.6	
Surgical masks with ear loops	
Aprons/gowns	
Gloves	
Liquid soap	
Alcohol- based hand rub -	
Paper towels	
Sodium hypochlorite diluted to 1000ppm	
Disposable cloths if available.	
Bottles for diluted sodium hypochlorite (Oracle 181062)	
Infectious/medical waste bags	
Cable ties	
Red linen bags	
Hot water-soluble liners	
Vomit cartons	
Tissues	
Nilodor	

Appendix B: Line listing template

Line Listing Norovirus Ward/Unit: Date: (D=Diarrhoea, V=Vomiting, N= Nausea)

Case No.	Name and Hospital No.	Admission & discharge dates	Room No	Date/Time of onset of symptoms (D, V, N)	Date/Time of ongoing symptoms (D, V, N)	Antibiotics Y or N	Laxatives /Enema Y or N	Stool Specimen Date & /result
1.								
2.								
3.								
4.								
5.								

Appendix C: Flow chart for Norovirus Outbreak Management (excl. Burwood)



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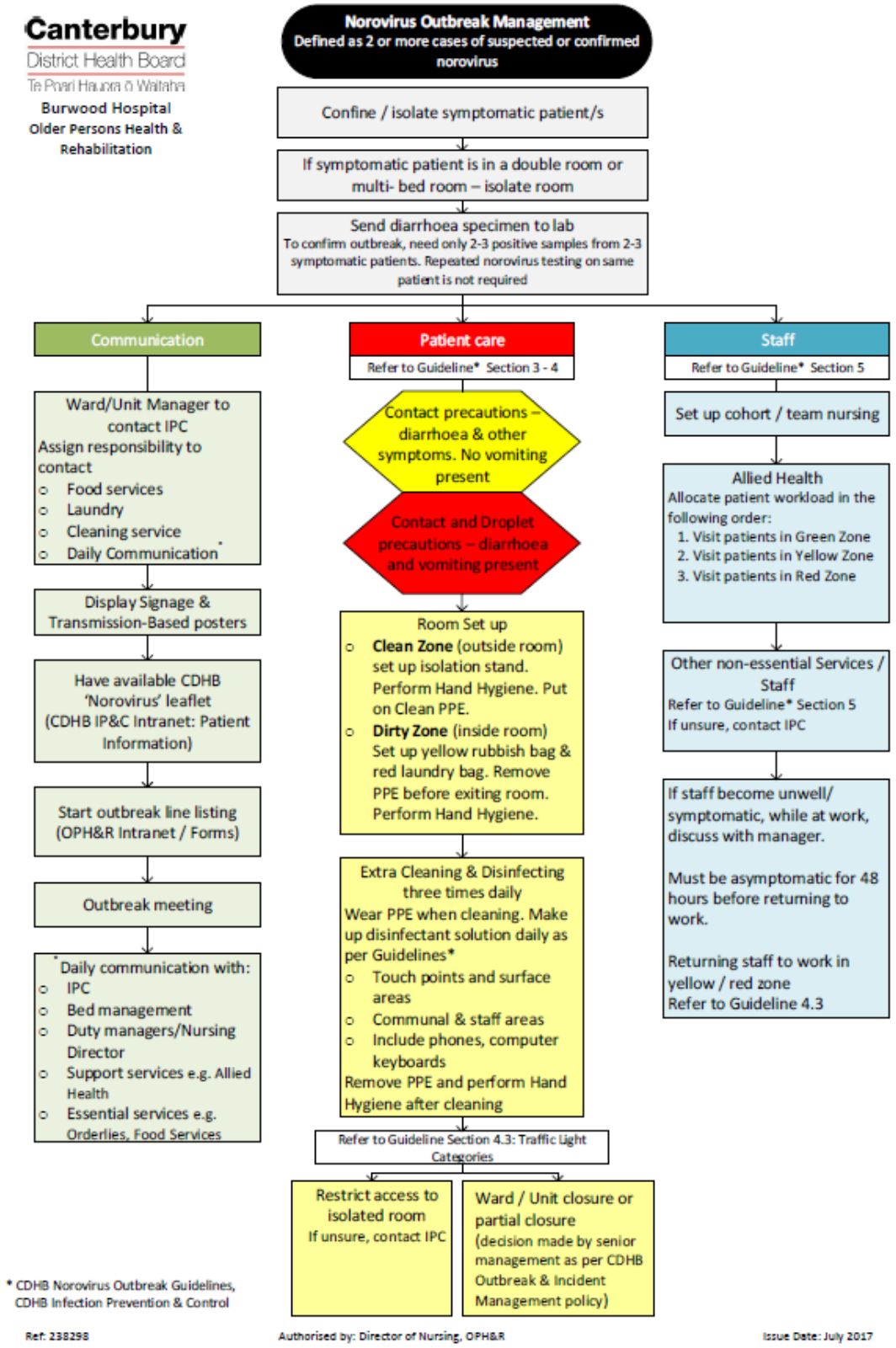
Appendix D: Flow chart for Burwood Hospital



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