Viral Respiratory Illness Cluster or Outbreak Management

Site Applicability:

PHC Acute, Long-Term Care (LTC), Assisted Living (AL), and Tertiary Mental Health sites.

Practice Level

Basic: Physicians, NPs, Nursing, Clinical Nurse Leader, Charge Nurse, Clinical Site Coordinator, Bed Placement Coordinator, Care Management Leader, Infection Control Practitioner & Operations Leader

Need to Know

This document provides preliminary guidance for the prevention, detection, and management of probable or confirmed viral respiratory illness (VRI) clusters and outbreaks.

Standards

This document is reviewed annually in September. Moreover, LTC and AL should adhere to Influenza Management in Residential Care: Yearly Preparation and all acute, LTC and AL units should follow the PHC Influenza Immunization for Patients and Residents policy.

Place all patients/residents who are considered a probable VRI case (defined below), initially on Airborne, Droplet and Contact precautions. Precautions should be maintained until an infectious cause is ruled out or changed to the appropriate disease-specific precaution when an infectious cause is confirmed. If only gastrointestinal (GI) symptoms are observed, such as nausea, diarrhea and vomiting, patients should be managed according to the Gastrointestinal Outbreak Protocol instead. See Appendix A for a simplified flowchart to distinguish GI and VRI cluster and outbreak management protocols.

The Outbreak Leader is by default, the Site Leader or the Patient/Resident Care Manager. The position may be delegated to another appropriate operations leader. Responsibilities of the Outbreak Leader include:

- Collaboration with IPAC and the unit care team to expedite & ensure transmission control measures are in place as appropriate
- Establishment of an outbreak management team (OMT). OMT membership will depend upon the facility's location, size and contractual status. IPAC's recommendations for OMT members are listed in Appendix B.

- Scheduling and leading interdisciplinary meetings, daily outbreak meetings and outbreak debrief meeting after the outbreak has been concluded. Outbreak Leader may follow the Acute and LTC Cluster or Outbreak Management Meeting templates available on PHC connect.

Assessment and Definitions

Viral Respiratory Illness (VRI): any new-onset of acute infectious respiratory illness suspected or confirmed to be caused by a viral agent with either upper- or lower-respiratory tract involvement.

Probable Viral Respiratory Illness: acute onset of more than one sign or symptom listed below AND when testing has not yet occurred or results are pending.

Typical signs and symptoms include the following

- New or worsening cough
- Fever** or chills
- Shortness of breath
- Runny or stuffy nose (i.e., congestion) or sneezing
- Sore throat or hoarseness or difficulty swallowing
- Loss of sense of smell or taste
- Tiredness, malaise
- Muscle aches (i.e., myalgia)
- Headache

** Fever may or may not be present, particularly in young children, the elderly, the immuno-compromised, or those taking medications such as steroids, Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), or Acetylsalicylic Acid (ASA). A temperature less than 35.6°C or greater than 37.4° C in the elderly may be an indication of infection.

Confirmed VRI case: is a patient/resident who has a laboratory confirmed pathogen causing VRI, (i.e., influenza, SARS-CoV-2, parainfluenza, RSV, adenovirus, rhinovirus, metapneumovirus).

Healthcare-Associated VRI is a patient who:

- Has developed VRI signs and symptoms after the typical incubation period for that illness (e.g., Seasonal Influenza onset >3-7 days after admission) **AND**
- Had no known exposure to the VRI outside the facility within the incubation period **AND**
- An epidemiological investigation suggests an infection was more likely to have been acquired in the facility/unit than from outside it (e.g., placed in the same room as another patient while the other patient was infectious, direct physical contact with a case or exposure to infectious body fluids).

VRI Cluster

A cluster, defined as more than one case of VRI. A cluster may occur due to a high prevalence of community-associated cases in single facility or localized area **OR** healthcare associated cases where epidemiological links cannot be conclusively determined. Whenever a cluster of VRI occurs, it warrants an investigation and consideration for enhanced surveillance or outbreak measures.

Enhanced Surveillance (ES)

ES is initiated by IPAC and/or the Medical Health Officer (MHO), for clusters with ongoing transmission. When a cluster of VRI on a unit/health-care facility is identified, but does not meet criteria for an outbreak, IPAC may use a phased approach, implementing some additional measures (see interventions) to prevent further transmission or escalation to an outbreak.

VRI Outbreak

A VRI outbreak is declared by the MHO/official designate based on their assessment of the following:

- The occurrence or suspicion of epidemiologically linked cases of confirmed health-care-associated VRI within the incubation period for that organism,
  AND
- An investigation indicates that transmission most likely occurred within the same unit/facility rather than prior to admission;
  AND
- the need for additional control measures beyond individual case or cluster management (enhanced surveillance), based on risk factors in the situation and facility OR the number of cases may exceed a pre-determined threshold;
  AND
- Additional measures are considered to have a higher overall benefit than harm.

Interventions

Rapid implementation of infection control measures limit the spread and duration of VRI transmission in healthcare facilities. **Therefore, units should, at minimum, implement the interventions in the table below when more than one patient/resident in one geographic location (i.e. room, unit, neighborhood or floor) are identified with healthcare-associated VRI.** Interventions are listed in order of priority and further categorized by roles and responsibilities.

Intervention	Description	Personnel Responsible
Additional Precautions & Placement	Place symptomatic patients/residents on Airborne, Droplet & Contact precautions (sign on door and Cerner banner bar). • If VRI is laboratory confirmed, refer to PHC Diseases and Conditions Table for guidance specific to the infection identified	CNL, CN or Primary Nurse

	• If negative for all VRI, continue precautions until resolution of fever and symptoms for 24 hours, or consult IPAC Place exposed and lab-confirmed patients/residents on precautions as identified by IPAC or the following algorithms: • COVID-19 Precautions in Acute Care • COVID-19 Response in Long-term Care (LTC) and Assisted Living (AL) • Patient Placement Guideline • Influenza and Other Viral Respiratory Infections	
VRI Testing	Collect specimens as soon as possible on all symptomatic patients/residents. **PCR testing is required for all symptomatic patients/residents,** however a COVID-19 Rapid Antigen Test (RAT) may be used for immediate identification if this changes initial management (e.g. bed placement or treatment) for the patient/resident. Supporting resources: • Viral Respiratory illness – Specimen Collection: Nasopharyngeal Swabs (NPS) • RAT Instructions for Patients/Residents	CNL, CN or Primary Nurse
Treatment	Notify MRP to evaluate need for treatment or prophylaxis for confirmed cases and exposures. • In LTC, Pharmacist initiates Influenza treatment and prophylaxis in the event of an outbreak, assuming pre-influenza management has been completed Resources: • Influenza Management in Residential Care: Yearly Preparation • Long Term Care Influenza Season Workflow in Cerner • BCCDC COVID-19 Treatments	CNL or Primary Nurse
Line List	Initiate line list for symptomatic patients/residents. Email line lists to PHC IPAC at phcinfc@providencehealth.bc.ca • Patient VRI Outbreak Line List Identify patients who have previously tested + for COVID-19 in the last 3 months and/or influenza within the past 12 months, including vaccination status of patient/residents on unit	CNL, CN or Primary Nurse CNL or CN
Staff	Ensure symptomatic staff do not come to work at any healthcare facility and report their symptoms to their manager. • Maintain Line List for all symptomatic staff. Ensure that the Line List is updated and emailed to IPAC when any symptomatic staff are added.	Outbreak Leader, PCM or RCM

	Staff VRI Outbreak Line List Adjustments to break rooms & cohorting staff may be implemented as deemed appropriate by IPAC Seasonal Influenza & COVID-19 vaccinations are strongly recommended for all healthcare workers working on a unit during a cluster or outbreak. In the event of an outbreak, staff should follow Occupational Health and Safety (OH&S) guidelines listed here. • OH&S Policies & Procedures • Influenza Prevention	ICP
Communication	Inform IPAC (working hours) or Medical Microbiologist on-call (after hours and weekends via switchboard) if there is a suspected outbreak • 2 or more patients/residents and/or epidemiologically-linked staff members with symptoms of VRI are identified within a 7-day period, with at least one of the cases identified as a patient/resident. Arrange timely interdisciplinary meetings with key stakeholders to monitor progression of cluster/outbreak. Inform Physician Groups, allied health and all supporting services (EVS, Food Services, Laundry Services, Social Work, PT, OT, SLP, RT etc.) of current status and interventions in place. If enhanced surveillance is decided or outbreak is declared, signage will be placed on all entrances and exits and reports will be provided via email throughout the progression • Outbreak Sign - English • Outbreak Sign - Chinese	CNL or CN Outbreak Leader ICP
Additional Cleaning	Request Housekeeping to perform enhanced cleaning	ICP
Air Handling Unit (AHU) Placement	Request Facilities, Maintenance & Operations (FMO) to place AHUs in locations appropriate to organism • Ensure preventative maintenance & replacement of filters is being performed routinely by FMO. • Once AHU is placed, ensure it is turned on and functioning as intended. Inform patient/resident of its purpose.	ICP PCM, RCM or CNL CNL or Primary Nurse

Supplies	Ensure there is an adequate supply of: gowns, gloves, masks, eye protection, disinfectant wipes and alcohol-based hand rub. Alert stores as needed that additional supplies may be required. Ensure frequency and responsibility for stocking, cleaning and disinfection of the PPE cart is clearly established and communicated Resources: Low Level Cleaning and Disinfection	Outbreak Leader, PCM or RCM CNL or CNE
Admissions & transfers	Do not admit or move asymptomatic patients/residents into rooms on precautions unless they have recently recovered from the specific lab confirmed VRI (e.g., COVID-19/influenza). • Only cohort patients/residents with the same lab confirmed organism External transfers and internal bed moves should be reviewed with IPAC on a case-by-case basis, as guidance varies depending on case and cluster numbers Resources: • Patient Placement Guideline • COVID-19 Response in Long-term Care (LTC) and Assisted Living (AL) • Influenza and Other Viral Respiratory Infections	CNL, CML or CSC CNL or CML
Group Activities	Patients/residents on precautions should not attend group activities. Meals should be in their room. Further restriction of group activities is at the discretion of IPAC or the MHO.	CNL or Primary Nurse
Visitors	Symptomatic visitors should not enter the facility unless for compassionate or exceptional circumstances. • Signage will inform visitors of a VRI cluster or outbreak. PPE signage in rooms/areas required. Provide PPE support as required • Any adjustments to visitor protocols are at the discretion of IPAC or the MHO	Outbreak Leader, PCM, RCM, CNL or Screener Outbreak Leader, PCM, RCM, CNL Primary nurse

Personnel Responsible Abbreviations

- CML - Care Management Leader
- CN - Charge Nurse
- CNE - Clinical Nurse Educator
- CNL - Clinical Nurse Leader
- CSC - Clinical Site Coordinator
- ICP - Infection Control Practitioner
- PCM - Patient Care Manager
- RCM - Resident Care Manager

Conclusion of Outbreak & Enhanced Surveillance

The MHO is responsible for declaring the outbreak over. Evaluation of enhanced surveillance conclusion may be performed by IPAC. The length of time from the onset of symptoms of the last case until

measures can be lifted may vary due to the incubation period of the causative agent, whether the last case was a patient or HCW, the adequacy of ongoing surveillance for new cases at the outbreak or cluster unit/facility, and the epidemic curve of the outbreak or cluster. Typically, VRI outbreaks have been concluded when two incubation periods (based on the suspected/confirmed causative agent) have passed without transmission, from the last case identified.

IPAC will provide additional tools, resources and communicate about the discontinuation of measures upon conclusion. Moreover, the unit should continue vigilant observation for new cases even after the outbreak is declared over.

Related Documents

- B-00-07-13028 - Airborne Precautions - Infection Control
- B-00-07-13079 - Droplet and Contact Precautions - Infection Control
- B-00-11-10186 - Influenza Prevention
- B-00-07-13017 - Viral Respiratory illness - Specimen Collection: Nasopharyngeal Swabs (NPS)
- B-00-11-10195 - Influenza Immunization for Patients and Residents
- B-00-07-13068 - Influenza and Other Viral Respiratory Infections
- B-00-07-13007 - Influenza Management in Residential Care: Yearly Preparation

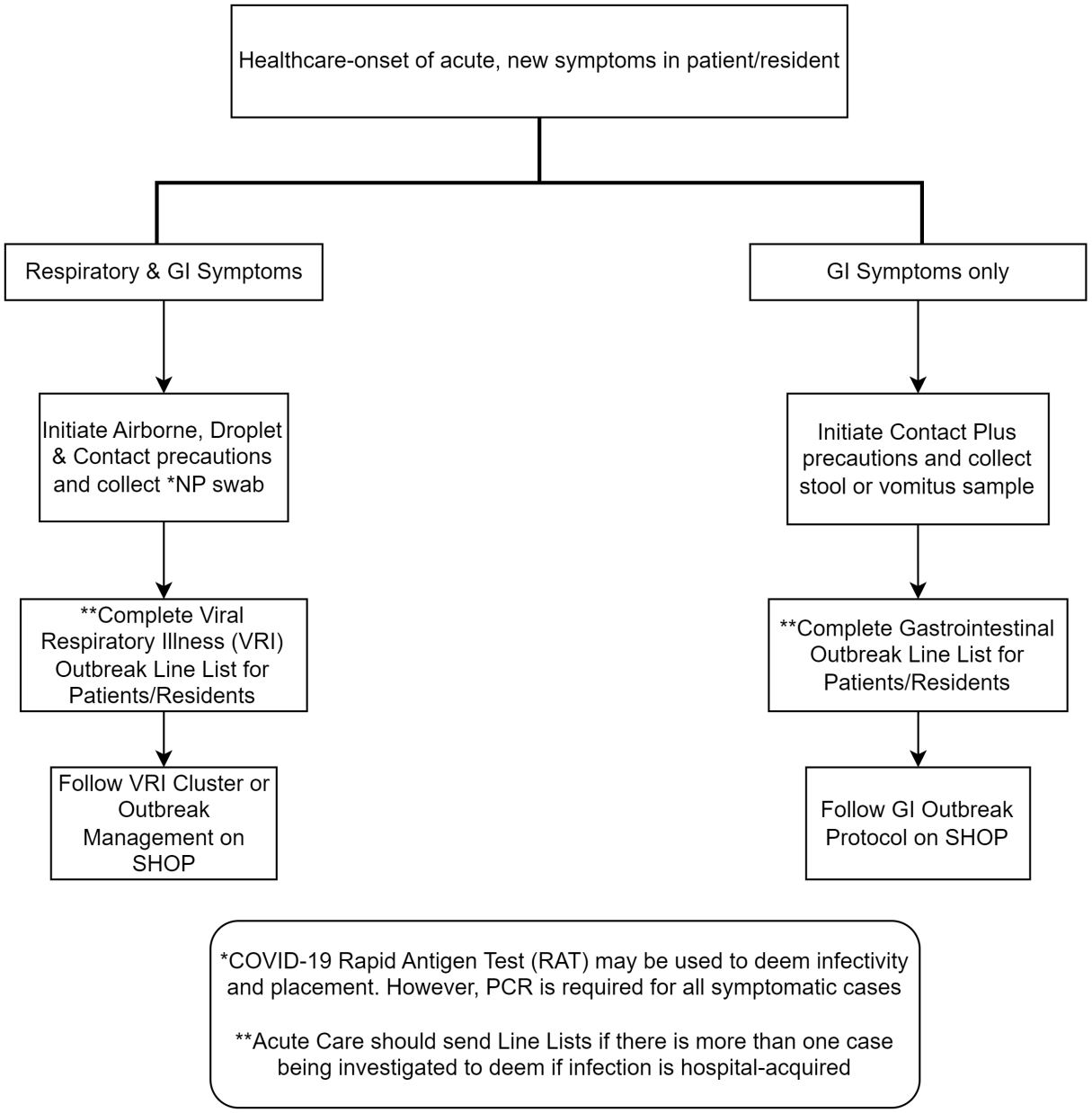
References

Provincial Infection Control Network of British Columbia. (2022). Viral Respiratory Infection Outbreak Guidelines for Health-care Facilities. Available from https://www.picnet.ca/guidelines/respiratory-illness/

Vancouver Coastal Health. (2022). Acute Care VRI Case and Cluster Containment Toolkit. http://ipac.vch.ca/Documents/Outbreak/VRI_Acute/Acute%20VRI%20Cases%20Toolkit.pdf

Vancouver Coastal Health. (2022). LTC VRI Cases & Cluster Containment Toolkit. http://ipac.vch.ca/Documents/Outbreak/VRI_LTC/LTC%20VRI%20Cases%20Toolkit.pdf

Appendix A: VRI or GI Cluster/Outbreak Process Flow



Appendix B: Recommended Membership for the Outbreak Management Team

- Site Leader
- PCM or RCM for facility
- Site Physician Lead
- Clinical Nurse Leader or Charge Nurse
- Clinical Nurse Educator
- Infection control physician
- Infection Control Practitioner (ICP)
- Medical Health Officer (MHO) or delegate
- Occupational Health & Safety (OH&S) Personnel
- Manager or representative from Pharmacy
- Persons responsible for support services such as FMO, housekeeping, laundry & food services
- Leader or Manager of applicable Allied Health services (e.g. PT, OT, SLP, RT, Spiritual Health & Social Work etc.)

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