Guide for Outbreak Prevention & Control in Acute Care Sites

Includes viral respiratory & gastrointestinal illness

Alberta Health Services

If you have feedback about this guide email:

CDCResourceFeedback@primarycarealberta.ca

If you have questions about a specific outbreak, or site-specific processes, always direct your questions to your designated site lead or the AHS Public Health Outbreak

Navigating this resource

- The most up-to-date version of the guide is the electronic version on the website. Printed copies of the guide should be considered current only on the date printed.
- Bolded terms are defined in the glossary.

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Land acknowledgement

Our work takes place on historical and contemporary Indigenous lands, including the territories of Treaty 6, Treaty 7 & Treaty 8 and the homeland of the Métis Nation within Alberta and 8 Metis Settlements. We also acknowledge the many Indigenous communities that have been forged in urban centres across Alberta.

Introduction

Acute care sites are high-risk settings for the spread of communicable disease. Early detection of viral respiratory and gastrointestinal illness (GI) is important to reduce the spread of disease and prevent outbreaks.[1] Although infectious disease outbreaks occur year-round, they are more common during fall and winter.

The notification of outbreaks and other infectious disease threats in Alberta is mandated under Section 26 of the provincial Public Health Act. The **Medical Officers of Health** (MOH) is accountable for outbreak investigation and management (under Section 29 of the provincial Public Health Act). Outbreak management uses a multidisciplinary approach.

Appendix A outlines the roles and responsibilities of:

- The Alberta Health Services (AHS) Public Health Outbreak team
  - This includes MOHs, Communicable Disease Control (CDC) Nurses and Safe Healthy Environments (SHE) Public Health Inspectors
- Infection Prevention & Control (IPC) / designate
- Site or unit manager
- Acute Care Operational Leads
- On-site **healthcare workers and staff** (HCW/staff)
- **Workplace Health and Safety** (WHS) / **Occupational Health, and Safety & Wellness** (OHS&W)
- Provincial Laboratory for Public Health (**ProvLab**)

This guide was developed by IPC, CDC and SHE, in collaboration with:

- AHS:
  - Workplace Health and Safety
  - Zone Public Health
- Covenant Health:
  - Infection Prevention & Control
  - Occupational Health, Safety & Wellness

Best practice recommendations

This guide provides evidence-based best practice recommendations and follows the Alberta Health Public Health Disease Management Guidelines. It supports acute care sites to fulfill their obligation to prevent and control outbreaks.

[1] Outbreak: "The occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area or season" (World Health Organization, 2018).

This guide provides general outbreak measures

This guide outlines minimum outbreak management strategies. These may differ depending on:

- The size and staffing at the acute care sites
- The potential impact of outbreak management measures on the well-being of patients and healthcare workers
- Sites are encouraged to implement as many outbreak measures as possible.

Sites are recommended to follow their own policies and protocols to carry out the recommendations in this guide. Consult IPC and/or the AHS Public Health Outbreak team for guidance and support.

Topics that are beyond the scope of this guide

- Best practice for outbreaks due to an unusual, infrequent or emerging/novel infectious disease.
- *Clostridioides difficile*, multi-drug-resistant organisms (such as methicillin-resistant *Staphylococcus aureus*), carbapenem-resistant organisms and rash-causing organisms due to their unique epidemiological properties.

1. Outbreak preparation

This section includes best practice recommendations to prepare for outbreaks. Follow zone and site-specific processes to implement these recommendations.

Key actions

- ➔ Ensure availability of supplies.
- ➔ Ensure operational leads and HCW/staff have access to and are familiar with current outbreak management protocols.

1.1 Site outbreak preparation

It is the responsibility of acute care sites to be prepared for the possibility of a viral respiratory illness (VRI) or gastrointestinal (GI) illness outbreak. For detailed information on roles and responsibilities, refer to the RACI matrix found in Appendix A: Roles and Responsibilities.

Ensure availability of supplies

- Work with key site personnel to ensure adequate availability of supplies for outbreak management including on-site patient specimen collection kits for respiratory and stool specimens.
- Ensure adequate supplies for:
  - Personal protective equipment (PPE)
  - Cleaning and disinfection.

Update HCW/staff

Ensure operational leads and HCW/staff have access to and are familiar with current AHS outbreak management protocols.

- Review routine IPC practices and additional outbreak-related measures with HCW/staff and physicians.
- Review and update internal protocols and procedures for outbreak management, including:
  - Table 2A: Signs and symptoms to monitor for in patients and HCW/staff
  - Appendix B: Case and outbreak definitions
    - Table B.1: COVID-19 illness
    - Table B.2: Viral respiratory illness (VRI)
    - Table B.3: Influenza
    - Table B.4: Mixed pathogen (respiratory)
    - Table B.5: Gastrointestinal illness (GI)
    - Table B.6: Mixed pathogen (GI).

2. Identify and report outbreaks

This section outlines how to identify and report outbreaks of VRI and GI illness, and the initial steps to take once an outbreak is declared. Follow zone and site-specific processes to implement these recommendations.

Key actions

- ➔ Watch for symptoms in patients and HCW/staff.
- ➔ Notify the IPC lead/designate when there are two or more patients or HCW/staff with symptoms or confirmed illness.
- ➔ Assess if the outbreak definition is met.
- ➔ Declare the outbreak.
- ➔ Determine outbreak duration based on pathogen.
- ➔ Complete initial outbreak communication.
- ➔ Convene an OMT meeting.

2.1 Monitor for an outbreak

Watch for symptoms in patients and HCW/staff

Monitor for cases of illness in patients and HCW/staff prior to, during and after outbreaks.

- If patients show signs and symptoms of illness in Table 2A, notify IPC.
  - Isolate patients on appropriate additional precautions.
- If HCW/staff show signs or symptoms of illness in Table 2A, notify WHS/OHS&W.
- IPC and/or WHS/OHS&W will:
  - Complete an investigation
  - Report to the AHS Public Health Outbreak team when indicated.

Table 2A: Signs and symptoms to monitor for in patients and HCW/staff

Patients[2]	HCW/staff

Any new/worsening/unexplained symptoms not associated with preexisting conditions:
• Cough
• Shortness of breath
• Decreased oxygen saturation
• Sore throat
• Runny nose / nasal congestion
• Fever/chills
  ○ Adults: greater than 37.8°C
  ○ Pediatrics: greater than or equal to 38.0°C
• Loss or altered sense of taste/smell.
• Headache
• Conjunctivitis / red eye / chemosis
• Nausea/diarrhea/vomiting
• Muscle ache / joint pain
• Fatigue (significant and unusual)
• Any additional symptoms at clinician's discretion (such as skin manifestations such as COVID toes, altered/change in mental status).
	Any new/worsening/unexplained symptoms not associated with pre-existing conditions:
	• Cough
	• Shortness of breath
	• Sore throat
	• Runny nose / nasal congestion
	• Fever/chills
	• Loss or altered sense of taste/smell
	• Headache
	• Nausea/diarrhea/vomiting
	• Muscle ache / joint pain
	• Fatigue (significant and unusual).

2.2 Case confirmation

- When there are at least two confirmed cases, that contribute to the outbreak definition, the accountable individual that identifies patients or HCW/staff with symptoms notifies the designated OMT Lead/ designate by the fastest means possible (direct voice communication and email).
- The OMT Lead/designate will review case definitions in Appendix B: Case and

[2] Symptoms in patients that are not listed do not require reporting to IPC.

outbreak definitions and assess if the patient and/or HCW/staff are to be included as a case.
    - This assessment is based on patient and/or HCW/staff symptoms and available laboratory results.
    - MOH or OMT may be consulted to determine if acquisition of illness was hospital or occupational, and if there are **epidemiological links**.

Case	Assessment completed
Patient	**IPC will determine and document:** • If the patient case is hospital-acquired and/or epidemiologically linked • If the patient was in the outbreak area during the incubation period for source investigation • Patient movement during the communicable period for contact tracing purposes.
HCW/staff	**WHS/OHS&W will determine and document:** • If the case is workplace-acquired and/or epidemiologically linked • If the HCW/staff was in the outbreak area during the communicable period • HCW/staff immunization status (if applicable) at the time of exposure.

2.3 Assess if the outbreak definition is met

- The OMT Lead/designate will consult with the AHS Public Health Outbreak team to determine if an outbreak definition has been met, and the type of outbreak.
- Refer to Appendix B: Case and outbreak definitions.
    - Table B.1: COVID-19 illness
    - Table B.2: Viral respiratory illness (VRI)
    - Table B.3: Influenza illness
    - Table B.4: Mixed pathogen (respiratory)
    - Table B.5: Gastrointestinal illness
    - Table B.6: Mixed pathogen outbreak (GI).

Declare an outbreak

Once the OMT Lead/designate and the AHS Public Health Outbreak team have confirmed that there is an outbreak they will:

- Declare the outbreak
- Identify outbreak management and control strategies
- MOH and/or OMT will identify the outbreak lead
- Determine the need for an OMT meeting based on the outbreak type and magnitude.

2.4 Determine outbreak duration

VRI outbreak duration (based on pathogen)

- OMT will determine if prevalence testing is recommended.

COVID-19

If the outbreak pathogen is COVID-19

- Outbreak measures remain in place for a minimum of 10 days (one incubation period) following the onset of symptoms of the last patient case.
  - Any measures in place can be lifted on day 11.
- Duration may be modified at the discretion of the IPC Medical Lead and/or MOH if new COVID-19 variant strains are circulating.

Influenza

If the outbreak pathogen is influenza

- Outbreak measures remain in place for a minimum of seven days (two incubation periods) following the onset of symptoms of the last patient case.
  - Any measures in place can be lifted on day eight.

VRI

If the outbreak pathogen is VRI

Non-influenza/non-COVID-19 pathogen outbreak

- Outbreak measures remain in place for two incubation periods for that pathogen.
  - Refer to Appendix C: Pathogens Commonly Associated with VRI for incubation periods for common VRI pathogens.
  - Human metapneumovirus (hMPV) example: incubation period is three to five days, so the outbreak remains open until the 11th day following symptom onset of the last patient case.
- Duration may be modified at the discretion of the IPC Medical Lead and/or MOH.

No pathogen is identified

- Outbreak measures remain in place for a minimum of seven days following the onset of symptoms of the last patient case.
  - Any measures in place can be lifted on day eight.

Mixed respiratory

If there is a mixed respiratory illness outbreak (more than one pathogen)

- Outbreak duration: two incubation periods based on the pathogen with the longest incubation period.
  - Refer to Appendix C: Pathogens Commonly Associated with VRI for incubation periods for common VRI pathogens.
- If COVID-19 is one of the pathogens, follow COVID-19 outbreak duration.

GI Outbreak Duration

- Outbreak duration for GI illness outbreaks is 48 hours from symptom resolution in the last case or 96 hours from onset of symptoms in the last case, whichever occurs first.

2.5 Complete initial communication

- Use zone/site-specific processes to communicate about the outbreak.

Department responsible	What information is communicated

IPC or WHS/OHS&W	• Request an **exposure investigation number (EI number)** from the AHS Public Health Outbreak team. Include the following information:
	  ○ Number of patients with symptoms or confirmed illness
	  ○ Number of HCW/staff with symptoms or confirmed illness
	  ○ Symptom onset date of cases
	  ○ Number of patients at-risk
	  ○ Number of HCW/staff at-risk
	  ○ Name and contact information for unit/area manager
	  ○ Designated IPC contact person.

IPC	• Notify by phone call or email:
	  ○ Environmental Services
	  ○ Bed Management / equivalent
	  ○ Workplace Health & Safety
	  ○ Unit/program/site leadership
	  ○ Pharmacy (to assist with coordinating influenza antiviral chemoprophylaxis). Refer to Appendix D: Antiviral chemoprophylaxis for influenza outbreaks).
	• Enter initial outbreak information into provincial IPC outbreak tracking tool.

IPC / site leadership / communications	• Distribute on-site outbreak memo/email notification.
Outbreak Unit - may be charge nurse, unit manager, assistant head nurse, patient care manager or designate	• Notify patients and Designated Family Support Persons (DFSPs). • Arrange shift huddles ○ Consider initial and ongoing as needed.
Operational/site leadership or IPC	• Send communication to zone leadership.
Site Command Post (SCP)	• Notify Zone Emergency Operations Centre (ZEOC) if Incident Command Structure (ICS) is in place.

2.6 Convene outbreak management team (OMT) meetings

- The OMT Lead/designate convenes a conference call as soon as possible after the initial outbreak notification.
- Regardless of whether a formal meeting is convened, communication and direction must be provided via email to all key partners.
- OMT membership is site-specific.

Required membership	Optional OMT membership
• IPC • WHS/OHS&W • Representatives from the AHS Public Health Outbreak team • Unit Manager and/or Patient Care Manager • Site Manager / Site Operations • Environmental Services • Bed Management / Transition Services • Allied Health • Nutrition & Food Services[3]	• Pharmacy • Laboratory Services • Physician Lead or Program Site Chief for the outbreak unit • Program Executive Director • Site Medical Director • Communications representative
For sites that are combined acute care and congregate care settings, OMT must include representation from both.	

Templates for use in OMT meetings

- Outbreak management team meeting agenda
- Outbreak checklist for discussion at OMT meeting.

[3] Required membership for GI outbreaks; optional for VRI outbreaks.

3. Viral respiratory illness outbreak control

This section includes best practice recommendations for the management of VRI outbreaks. Follow zone and site-specific processes to implement these recommendations. For GI illness outbreak control, refer to Section 4. Gastrointestinal illness outbreak control.

Key actions

- Increase symptom monitoring for all patients on the outbreak unit.
- Place patients with symptoms or confirmed illness on Contact and Droplet precautions.
- Complete patient specimen collection as directed.
- Follow admission, transfer and discharge restrictions.
- Plan for patient activities outside of their bedspace.
- Complete ongoing outbreak communication.
- Complete outbreak environmental cleaning and disinfection.
- Post outbreak signs at entrances.
- Plan for safe visits.
- Implement continuous masking and continuous eye protection for all HCW/staff.
- Coordinate HCW/staff assignments.
- Follow WHS/OHS&W guidelines for HCW/staff work **restrictions**.

Influenza outbreaks:

- Administer influenza antiviral chemoprophylaxis to patients.
- Offer influenza antiviral chemoprophylaxis to HCW/staff.

The following are baseline/minimum recommendations for outbreaks of VRI in an acute care. Additional or more restrictive recommendations may be put in place at the discretion of IPC, WHS/OHS&W, the AHS Public Health Outbreak team and/or the OMT.

For sites that are combined acute care and **congregate settings**, application of acute care outbreak measures to non-acute care areas in the same site will be determined on a case-by-case basis. Considerations include (but are not limited to) physical layout, staffing, and shared spaces and/or activities between patients and residents.

3.1 Patient control measures

3.1.1 Patient symptom monitoring

- Increase symptom monitoring for all patients on the outbreak unit.
  - Monitor symptoms every eight hours (at least three times daily).
  - Document symptoms in Connect Care assessment tool.
  - Refer to COVID-19: Recognizing early symptoms in seniors for patients with altered cognition.
  - Notify IPC of patients with new, changed or worsening symptoms and:
    - Place patient on Contact and Droplet precautions and move to a private room if available.

3.1.2 Additional precautions for patients

- Place patients with symptoms or confirmed illness on Contact and Droplet precautions. Refer to Appendix C: Pathogens Commonly Associated with VRI for duration of precautions.
- Use a fit-tested N95 respirator during an aerosol-generating medical procedure (AGMP).
  - Post AGMP in Progress sign while an AGMP is active.
- Place patient in a private room (if available).
  - If a private room is not available, maintain at least two metres of physical separation between bed/stretcher spaces or use a barrier between patients such as a curtain or screen. Follow Additional Precautions without Walls in Shared Patient Care Space.
- For more information, refer to the Contact and Droplet Precautions in Acute care.
- Consult with IPC prior to cohorting patients.
  - Recommendations depend on outbreak-specific factors. Discuss at OMT.
- IPC and OMT will advise on the management of **close contacts**.

Discontinue additional precautions

- Consult with and/or notify IPC as per site process when discontinuing additional precautions for patients on the outbreak unit.
- Refer to Discontinuation of Contact and Droplet Precautions for Suspected or Confirmed Viral Respiratory Infection [including COVID-19].

3.1.3 Patient specimen collection

- Test patients with new or worsening symptoms or as directed by the most responsible health provider (MRHP) or IPC in consultation with OMT.
- Complete the Respiratory Infection (incl. COVID-19) order form.
  - Include the EI number.
- Check off “outbreak investigation” when ordering tests during an outbreak.
- Request Respiratory Pathogen NAT Panel or RPP.
- Prevalence testing may be requested for COVID-19 by the OMT.

3.1.4 Antiviral chemoprophylaxis and treatment for patients

- Inpatients with viral respiratory symptoms should be empirically treated with oseltamivir for suspected influenza (before the pathogen is identified).
  - Treatment decisions are the responsibility of the MRHP.
  - Initiate treatment within 48 hours of symptom onset. Early treatment is most effective in the reduction of illness duration, severity and complications.
  - Post-exposure antiviral chemoprophylaxis recommendations will be discussed at the time of the outbreak.
  - Reassess and implement treatment according to available laboratory results.

COVID-19

If the outbreak pathogen is COVID-19

- Refer to Therapeutic Management of Hospitalized Adults with COVID-19.
- Treatment is considered after laboratory confirmation in conjunction with clinical presentation and immunization status. Treatment is not based on symptoms only.
- There is currently no post-exposure antiviral chemoprophylaxis for COVID-19.

Influenza

If the outbreak pathogen is influenza.

Post-exposure antiviral chemoprophylaxis (refer to Appendix D: Antiviral chemoprophylaxis for influenza outbreaks).

- MOH/IPC physician to direct post-exposure antiviral chemoprophylaxis for outbreak management.
  - The MRHP is responsible for prescribing antiviral chemoprophylaxis.
- For patients who are asymptomatic and at higher risk, offer post-exposure antiviral chemoprophylaxis.
- Include pharmacy in the OMT for suspect and confirmed influenza outbreaks to help coordinate post-exposure antiviral chemoprophylaxis for patients.

Antiviral treatment

- Individuals with symptoms require treatment doses (not antiviral chemoprophylaxis).

3.1.5 Patient admissions and incoming transfers to the outbreak unit

- The OMT determines if:
  - Unit is **restricted** to admissions and incoming transfers, or
  - Unit remains **open** with any restrictions or specific criteria such as closure of surge and/or over-capacity spaces.
- Restrictions are in place for the duration of the outbreak.

3.1.6 Patient discharges and outgoing transfers from the outbreak unit

- Transfers off the unit or repatriation should only occur if medically indicated.
- Notify IPC of:
  - Patient transfers or discharges from the outbreak unit
  - Identified patient close contacts on other units.

Intra-site or inter-site transfers within acute care and acute care tertiary rehabilitation

- Ensure receiving unit/site/facility is made aware of the outbreak and additional precautions.
- The outbreak unit and receiving unit are to notify their respective site IPC.[4]

For transfers/discharges to continuing care homes or other congregate settings

- Refer to Risk Assessment Matrix to determine if Risk Assessment Worksheet is required.
- Advise receiving unit/site/facility of the outbreak and any additional precautions and any direction based on risk assessment.
- The outbreak unit and the receiving unit/site/facility to notify the site IPC.[4]
- For transfers to a congregate care[5] setting, refer to site-specific Guide for Outbreak Prevention and Control for transfer recommendations.

3.1.7 Transfers to another acute care unit/site (medically necessary)

Transfer of patients with symptoms

- Place patient in private room and monitor symptoms.
- Maintain Contact and Droplet precautions until patient meets the discontinuation criteria.

Transfer of patients who are asymptomatic

- Continue to monitor for symptoms.
- Reassess measures as needed.

Influenza

If the outbreak pathogen is influenza.

- Maintain any measures in place including antiviral chemoprophylaxis (refer to Appendix D: Antiviral Chemoprophylaxis for Influenza Outbreaks).

3.1.8 Patient activities

Patients leaving their bedspace

- Patients should only leave their bedspace for essential purposes, including attending medically necessary appointments.
  - Discuss exceptions and/or site-specific processes at OMT and consult with IPC.
- When leaving their bedspace:
  - Patients are to wear clean clothing or hospital gown / housecoat and perform hand hygiene.
  - Patients on contact and droplet precautions are required to wear a clean mask to prevent the spread of illness to others.

[4] IPC at the sending site may also directly notify receiving site IPC/designate.

[5] Congregate care settings include Continuing Care Homes and Supportive Living Accommodations

    - All other patients are recommended to wear a clean mask to protect themselves.
    - HCW/staff to notify receiving unit/site of any additional precautions required.
- Refer to Management Strategies for the Wandering Patient in Acute Care for patients who wander or who have behavioural concerns.

Rehabilitation restrictions

- Complete rehabilitation in the patient room if they are on Contact and Droplet precautions.
    - Complete rehabilitation on the unit for other patients.
- Consult IPC if urgent or required rehabilitation activities are required off unit.

Group activities and therapy

- Cancel group activities for the duration of the outbreak.
- If deemed necessary and safe to proceed by the OMT, patients who are asymptomatic are permitted to attend group therapy on the outbreak unit.
    - Patients will wear a mask or maintain a physical distance of at least two metres from one another.
    - Patients are not to leave the outbreak unit for group therapy.

Limit access to shared spaces and products

- Restrict communal dining.
- Close the nutrition centre to patients and DFSPs/visitors.
    - Allow access by HCW/staff only.
- Post signs to encourage hand hygiene and masking.
- Restrict shared recreational therapy items such as puzzles, games and books.

3.2 Ongoing communication

Use zone and site-specific processes to communicate about the outbreak.

Department responsible	Information to be communicated
Unit	• Notify IPC of patients who are newly symptomatic or who have confirmed illness. • Notify WHS/OHS&W of HCW/staff who are newly symptomatic.
IPC or designate	• Complete and submit the Communicable Disease Outbreak Daily Report (REDCap entry).
IPC	• Update provincial IPC outbreak tracking tool as needed.
WHS/OHS&W	• Notify IPC of new staff cases.

Outbreak Management Team meetings	• Frequency is to be determined by OMT. • Refer to Outbreak checklist for discussion at OMT meeting template.
Communication to zone leadership (daily check-in)	• Use usual site/zone communication processes. • SCP is to notify ZEOC if ICS in place.

3.3 Unit outbreak control measures

3.3.1 Cleaning and disinfection

- Initiate enhanced/outbreak cleaning by Environmental Services.
- Perform frequent cleaning of high touch surfaces such as doorknobs, light switches, handrails and workstations by unit HCW/staff.

3.3.2 Unit/area entrances

- Post the Outbreak Spotlight Sign at entry points.
- Post signs directing individuals to check in at the main desk.
- Provide access to alcohol-based hand rub and PPE at entrances.
- Minimize unnecessary traffic onto the unit by keeping door(s) closed.

3.3.3 DFSPs and visitors

- Follow guidance on the AHS website: Family & Visitors.
- Discuss restrictions to DFSP/visitors access at OMT.
    - OMT may consider restriction exceptions for end-of-life or other extenuating circumstances.
- Ensure site and zone notification process as follows:
    - Policy: Family Presence: Designated Family/Support Person and Visitor Access
    - Procedure: Managing Limits to Designated Family Support Person and Visitor Access.
- Advise DFSPs/visitors:
    - Of potential risk of acquiring illness if they choose to enter the outbreak unit
    - To not visit when symptomatic or feeling unwell.
- DFSPs/visitors who choose to visit during an outbreak will:
    - Follow additional precautions.
        - Wear PPE (unit HCW/staff or PPE coaches can assist with proper donning and doffing).
        - Practice hand hygiene.
    - Wear a mask continuously while in the outbreak-affected unit/area.
        - Use of eye protection is at discretion of OMT.
    - Limit visit to a single patient.
        - Exit the site immediately after the visit.

3.4 HCW/staff outbreak control measures

3.4.1 HCW/staff PPE

- Implement continuous masking and continuous eye protection for all HCW/staff on the outbreak unit.
  - PPE recommendations apply to all HCW/staff regardless of COVID-19 and influenza immunization status.
- Refer to Section 3.1.2 for patients with symptoms or confirmed illness.
- Manager to ensure PPE support is in place.
  - Consider use of PPE coach/equivalent. Refer to Provincial PPE Safety Coach Program.
  - Consider "just in time" training if no unit-based PPE coaches are available.
- Unit/IPC to report back to OMT about issues with PPE, hand hygiene or IPC practices.
- Record PPE breaches and report to unit manager / Clinical Nurse Educator and OMT.

3.4.2 HCW/staff cohorting

- Consider cohorting unit-based HCW/staff on the outbreak unit / affected area for a single shift.
  - HCW/staff may continue to work on other units at the same site or different sites. It is assumed that any HCW/staff at work is asymptomatic.
  - OMT to reassess HCW/staff cohorting as needed.

Influenza

If the outbreak pathogen is influenza.

- HCW/staff working at more than one site/unit must inform the alternate site/unit that an influenza outbreak is in progress in the index site to determine if they are permitted to work at the alternate site/unit.
- Refer to Appendix E: HCW/staff outbreak control measures for influenza outbreaks.

3.4.3 Nonessential personnel

- Limit nonessential personnel in the outbreak unit/area as per OMT recommendations.
  - OMT to discuss the restrictions of nonessential personnel such as students, contractors and volunteers.
- Advise nonessential personnel of the potential risk of acquiring illness during outbreaks.
- Nonessential personnel are to follow the same measures as other HCW/staff.

3.4.4 Break areas / gatherings

- Break areas:
  - Reinforce safe IPC practices in break areas.

- Encourage outdoor breaks when weather permits.
- Use physical distancing during breaks.
- No sharing of food/drinks (including no potlucks or parties).

3.4.5 HCW/staff symptom monitoring

- HCW/staff are to monitor for symptoms regardless of immunization status.
- Advise HCW/staff to not work while symptomatic.
- Direct sick calls to WHS/OHS&W for follow up.
- WHS/OHS&W will provide return-to-work guidance.
- Respiratory virus testing:
  - Testing for respiratory viruses is for individual clinical management only at the discretion of their MRHP.
  - During an outbreak, WHS/OHS&W may provide further direction.
  - Unit to report any HCW/staff with new symptoms and their test results to WHS/OHS&W; WHS/OHS&W to report to IPC.

3.4.6 Work restrictions

- Follow WHS/OHS&W guidelines for work restrictions.
  - Attendance at Work and Respiratory Virus Symptoms Policy
  - Attendance at Work and Respiratory Virus Symptoms FAQ.
- Work restriction may be extended at MOH/WHS/OHS&W Medical Consultant discretion.
- Immunocompromised HCW/staff cases to consult with their physician/specialist regarding duration of work restriction and if additional testing is recommended.
  - WHS/OHS&W Medical Consultant may also be consulted.

Influenza

If the outbreak pathogen is influenza

- Sites must comply with HCW/staff influenza immunization policy.
- There are additional work restrictions based on influenza immunization status regardless of symptoms.
- Refer to Appendix E: HCW/staff control measures for influenza outbreaks and WHS Influenza Outbreak Management guideline.

3.5 Closing an outbreak

- An outbreak may be closed when:
  - Duration criteria are met, including no new patients or HCW/staff under investigation.
    - Refer to Section 2.4 Determine outbreak duration based on pathogen(s).
  - There are no outstanding issues or concerns from IPC, WHS/OHS&W, the AHS Public Health Outbreak team or the outbreak unit/site.
- IPC will consult with WHS/OHS&W and the AHS Public Health Outbreak team prior to closing an outbreak.

- Prior to lifting outbreak restrictions, perform unit-wide enhanced cleaning.
- Following an outbreak:
    - Key program leads review and evaluate their role in outbreak management and revise internal protocols.
    - Any OMT member is encouraged to call a debrief to address any aspect of outbreak management.
    - A summary report including the outbreak background, investigation, results and recommendations may be developed by any OMT member and shared with internal and external partners.
- If additional patients or HCW/staff develop symptoms within seven days of the outbreak being closed, the unit/site will follow steps for assessing a potential outbreak in Section 2: Identify and report outbreaks.

4. Gastrointestinal illness outbreak control

This section includes best practice recommendations for the management of GI illness[6] outbreaks. Follow zone-and site-specific processes to implement these recommendations.

For VRI outbreak control, refer to Section 3. Viral respiratory illness outbreak control.

Key actions

- Increase symptom monitoring for all patients on the outbreak unit.
- Place patients with symptoms or confirmed illness on precautions.
- Complete patient specimen collection as directed.
- Follow admission, transfer and discharge restrictions.
- Plan for patient activities outside of their bedspace.
- Complete ongoing outbreak communication.
- Complete outbreak environmental cleaning and disinfection.
- Post outbreak signs at entrances.
- Plan for safe visits.
- Coordinate HCW/staff assignments.
- Follow WHS/OHS&W guidelines for HCW/staff work restrictions.

The following are baseline/minimum recommendations and considerations for a GI outbreak in an acute care setting. Additional or more restrictive recommendations may be put in place at the discretion of IPC, WHS/OHS&W, Public Health and/or the OMT.

For sites that are combined acute care and congregate settings, application of acute care outbreak measures to non-acute care areas in the same site will be determined on a case-by-case basis. Considerations include (but are not limited to) physical layout, staffing, and shared spaces and/or activities between patients and residents.

[6] *Clostridioides difficile* and multi-drug-resistant organisms such as MRSA and VRE can be responsible for outbreaks. Although some measures outlined in this section may be applicable in preventing or controlling them, it is beyond the scope of this guide to include these organisms due to their unique epidemiological properties.

4.1 Patient control measures

4.1.1 Patient symptom monitoring

- Increase symptom monitoring for all patients on the outbreak unit.
  - Monitor symptoms every eight hours (at least three times daily).
- Document symptoms in the Connect Care assessment tool.
- Document symptoms in the Basic Assessment Flowsheet and I/O Flowsheet.
- Notify IPC and follow 4.1.2 if a patient develops new, changed or worsening symptoms.

4.1.2 Place patients with symptoms on additional precautions

GI symptoms	Prior to pathogen being identified	Known pathogen
Vomiting only	Contact and Droplet	IPC Disease and Conditions Table Recommendations
Diarrhea only	Contact and Droplet + Contact Sporicidal	
Vomiting and diarrhea		

- Place patient in a private room with a dedicated bathroom (if available).
- If a private room is not available:
  - Patients must not share a bathroom.
    - Assign one patient in the room to the bathroom. Dedicate an individual commode to each of the other patients in the room.
  - Maintain at least two metres of physical separation between bed/stretcher spaces or use a barrier between patients such as a curtain or screen.
- Consult with IPC prior to cohorting patients.
  - Cohorting recommendations will depend on outbreak-specific factors. Discuss at OMT.
- Follow Additional Precautions without Walls in Shared Patient Care Space.
- For more information, refer to the Contact and Droplet Precautions and Contact Precautions.

Discontinue additional precautions

- Consult with and/or notify IPC as per site process when discontinuing additional precautions for patients on the outbreak unit.

4.1.3 Management of patient relapse cases

- Monitor for patients with a relapse of vomiting or diarrhea after being asymptomatic for 24 to 48 hours.
  - Relapse is likely due to malabsorption during an existing norovirus or other enteric infection rather than being a new infection.
- Maintain additional precautions for patients with relapse symptoms until they are

free of vomiting and diarrhea for 48 hours, as they may still be communicable.

- Do not include relapse cases on the daily case listing as they are not counted as new outbreak cases.
  - Each patient is only counted once on a line list.
- Relapse case(s) alone do not result in the extension of the outbreak and any related restrictions.
- If a previously identified GI case has onset of GI symptoms after being symptom-free for at least seven days, the patient is a new case.

4.1.4 Patient specimen collection

- Specimen collection for patients with symptoms will be directed by the MRHP, IPC or OMT.
- In Connect Care complete: Gastroenteritis Viral (GVP) NAT Panel--Stool and Bacterial Enteric Panel--Stool
  - Include the outbreak EI number
  - Check off "outbreak investigation"
- Tests to consider:
  - Stool culture (bacterial enteric screen/panel)
  - Gastrointestinal Viral Panel (viruses)
  - C. difficile toxin
  - COVID-19 specimen collection nasopharyngeal (NP) swab.
  - Also consider:
    - Stool for ova and parasites.

4.1.5 Patient admissions and incoming transfers to the outbreak unit

- OMT in consultation with AHS Public Health Outbreak team determines if:
  - Unit is closed to admissions and incoming transfers, or
  - Unit remains open with any restrictions or specific criteria such as closure of surge and/or over-capacity spaces.

4.1.6 Patient discharges and outgoing transfers from the outbreak unit

- Transfers off the unit should only be medically necessary or to return to the patient's home zone rather than transfers of convenience.
- Notify IPC of:
  - Patient transfers or discharges from the outbreak unit
  - Identified patient close contacts on other units.

Intra-site or inter-site transfers within acute care and acute care tertiary rehabilitation

- Ensure receiving unit/site/facility is made aware of outbreak and additional precautions.
  - Refer to Section 4.1.2 Additional precautions for patients with symptoms.

- The outbreak unit and the receiving unit are to notify the respective site IPC.[7]

For transfers/discharges to continuing care homes or other congregate settings

- Discuss with OMT as needed to assist with zone-specific processes.
- Advise receiving unit/site/facility of the outbreak and any additional precautions and any pertinent direction based on risk assessment.
    - Refer to Section 4.1.2 Additional precautions for patients with symptoms.
- The outbreak unit and the receiving unit/site/facility to notify the site IPC.[7]

4.1.7 Transfers to another acute care unit/site (medically necessary)

- For transfers to a congregate care[8] setting, refer to site-specific Guide for Outbreak Prevention and Control for transfer recommendations.

Transfer of patients with symptoms

- Place patient in private room and monitor symptoms.
- Maintain additional precautions until asymptomatic or back to baseline for 48 hours.

Transfer of patients who are asymptomatic

- Continue to monitor for symptoms.
- Ensure receiving site IPC is aware of the transfer.

4.1.8 Patient activities

Patients leaving their bedspace

- Patients should only leave their bedspace for essential purposes, including attending medically necessary appointments.
    - Discuss exceptions and/or site-specific processes at OMT and in consultation with IPC.
- When leaving their bedspace:
    - Patients are to wear clean clothing or hospital gown / housecoat and perform hand hygiene.
    - HCW/staff to notify receiving unit/site of any additional precautions required.
- Refer to Management Strategies for the Wandering Patient in Acute Care for patients who wander or who have behavioural concerns.

Rehabilitation restrictions

- Complete rehabilitation in the patient room if they are on additional precautions for GI symptoms.
- Complete rehabilitation on the unit for other patients.
- Consult IPC if urgent or required rehabilitation activities are required off unit.

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[7] IPC at the sending site may also directly notify receiving site IPC/designate.

[8] Congregate care settings include Continuing Care Homes and Supportive Living Accommodations

Group activities and therapy

- Cancel group activities for the duration of the outbreak.
- If deemed necessary and safe to proceed by the OMT patients who are asymptomatic are permitted to attend group therapy on the outbreak unit.
    - Patients are not to leave the outbreak unit for group therapy.

Limit access to shared spaces and products

- Restrict communal dining.
- Close the nutrition centre to patients and DFSPs/visitors.
    - Allow access by HCW/staff only.
- Post signs to encourage washing hands with soap.
- Restrict shared recreational therapy items such as puzzles, games and books.

4.2 Ongoing communication

Use zone and site-specific processes to communicate about the outbreak.

Department responsible	What information is communicated
Unit	• Notify IPC of patients with new symptoms or confirmed illness. • Notify WHS/OHS&W of HCW/staff with new symptoms.
IPC or designate	• Complete and submit the Communicable Disease Outbreak Daily Report (REDCap entry).
IPC	• Update provincial IPC outbreak tracking tool as needed.
WHS/OHS&W	• Notify IPC of new staff cases.
Outbreak Management Team meetings	• Frequency is to be determined by OMT. • Refer to Outbreak checklist for discussion at OMT meeting template.
Communication to zone leadership (daily check-in)	• Use usual site/zone communication processes. • SCP to notify ZEOC if ICS in place.
SCP	• Notify ZEOC if ICS is in place.

4.3 Unit outbreak control measures

Outbreak duration for GI illness outbreaks is 48 hours from symptom resolution in the last case or 96 hours from onset of symptoms in the last case, whichever occurs first.

4.3.1 Cleaning and disinfection

- Initiate enhanced/outbreak cleaning by Environmental Services.
- Perform frequent cleaning of high touch surfaces such as doorknobs, light switches, handrails and workstations by unit HCW/staff.
- Refer to Key Points for Ready-to-Use (RTU) Pre-moistened Disinfectant Wipes.
- OMT to discuss recommended cleaning product change if required.

4.3.2 Unit/area entrances

- Post the Outbreak Spotlight Sign at entry points.
- Post signs directing that anyone that enters the unit must check in at the main desk.
    - Consider screening HCW/staff at area/unit entrance to cue hand hygiene for anyone entering the unit.
- Provide access to alcohol-based hand rub (ABHR) and PPE at entrances.
- Minimize unnecessary traffic onto unit by keeping door closed.

4.3.3 DFSPs and visitors

- Follow guidance on the AHS website: Family & Visitors.
- Discuss restrictions to DFSP/visitors access at OMT.
- OMT may consider restriction exceptions for end-of-life or other extenuating circumstances.
- Ensure site and zone notification process as follows:
    - Policy: Family Presence: Designated Family/Support Person and Visitor Access
    - Procedure: Managing Limits to Designated Family Support Person and Visitor Access.
- Advise DFSPs/visitors:
    - Of potential risk of acquiring illness if they choose to enter the outbreak unit
    - To not visit when symptomatic or feeling unwell.
- DFSPs/visitors who choose to visit during an outbreak will:
    - Follow additional precautions.
    - Wear PPE (unit HCW/staff or PPE coaches can assist with donning and doffing).
        - Staff PPE safety coach may be able to assist DFSPs and visitors on the proper use of PPE.
    - Practice hand washing with soap and water.
    - Limit visit to one patient only.
    - Exit the site immediately after the visit.
    - Monitor for symptoms if advised by IPC.

4.4 HCW/staff outbreak control measures

4.4.1 HCW/staff personal protective equipment (PPE)

- Refer to Section 4.1.2 Additional precautions for patients with symptoms.
- Manager to ensure PPE support is in place

    - Consider use of PPE coach/equivalent. Refer to Provincial PPE Safety Coach Program
    - Consider "just in time" training if no unit-based PPE coaches are available.
- Unit/IPC to report back to OMT about issues with PPE, hand hygiene or IPC practices.
- Record PPE breaches and report to unit manager / Clinical Nurse Educator and OMT.

4.4.2 HCW/staff cohorting

- Consider cohorting unit-based HCW/staff on the outbreak unit/affected area for a single shift.
- HCW/staff may continue to work on other units at the same site or different sites.
- It is assumed that any HCW/staff at work is asymptomatic.
- OMT to reassess HCW/staff cohorting as needed.

4.4.3 Nonessential personnel

- Limit nonessential personnel in the outbreak unit/area as per OMT recommendations.
    - OMT to discuss the restrictions of nonessential personnel such as students, contractors and volunteers.
- Advise nonessential personnel of the potential risk of acquiring illness during outbreaks.
- Nonessential personnel are to follow the same measures as HCW/staff.

4.4.4 Break areas / gatherings

- Reinforce safe IPC practices in break areas.
- Encourage outdoor breaks when weather permits.
- No shared food/drinks (including no potlucks or parties).

4.4.5 HCW/staff symptom monitoring and testing

Monitor for symptoms

- Advise HCW/staff with symptoms not to work.
- Direct sick calls to WHS/OHS&W for follow up.
- WHS/OHS&W will provide return-to-work guidance.

HCW/staff testing

- HCW/staff with symptoms may see their MRHP for testing if needed.
- WHS/OHS&W will provide direction about return-to-work guidance for HCW/staff with symptoms and/or those with a laboratory-confirmed illness.
- Unit to report any HCW/staff with new symptoms and their test results to WHS/OHS&W. WHS/OHS&W to report to IPC.
- No routine asymptomatic testing for GI outbreaks.

4.4.6 Work restrictions

- Any HCW/staff that fits the GI illness case definition is to be excluded from work at all sites until 48 hours following the last episode of vomiting and/or diarrhea.
    - Work restriction may be extended at the discretion of the MOH/WHS/OHS&W Medical Consultant.
- Immunocompromised HCW/staff cases should consult their physician/specialist regarding the duration of their work restriction period and if any additional testing is recommended.
    - WHS/OHS&W Medical Consultant may also be consulted.

4.5 Closing an outbreak

- An outbreak may be closed when:
    - Duration criteria are met, including no new patients or HCW/staff under investigation.
        - Outbreak duration for GI illness outbreaks is 48 hours from symptom resolution in the last case or 96 hours from onset of symptoms in the last case, whichever occurs first.
    - There are no outstanding issues or concerns from IPC, WHS/OHS&W, the AHS Public Health Outbreak team or the Outbreak unit/site.
- IPC will consult with WHS/OHS&W and the AHS Public Health Outbreak team prior to closing an outbreak.
- Prior to lifting outbreak restrictions, perform unit-wide enhanced cleaning.
- Following an outbreak:
    - Key program leads will review and evaluate their role in outbreak management and revise internal protocols.
    - Any OMT member is encouraged to call a debrief to address any aspect of outbreak management.
    - A summary report including the outbreak background, investigation, results and recommendations may be developed by any OMT member and shared with internal and external partners.
- If additional patients or HCW/staff develop symptoms within seven days of the outbreak being closed, the unit/site will follow steps for assessing a potential outbreak in Section 2: Identify and report outbreaks.

Glossary

Acute care: Includes all urban and rural hospitals, psychiatric sites and urgent care sites where inpatient care is provided.

Admission and transfer status: Determined in consultation with the OMT and categorized as follows:

- **Open:** The site/unit remains open to patient admissions, transfers and discharges.
- **Restricted:** Admission and transfer status may range from NO admission to selected patient admissions, transfers and discharges as permitted under the direction of the zone MOH and in consultation with the OMT. This allows for individual assessments to be made based on established criteria without undue risk to patients, programs, or the system in general.

AHS Public Health Outbreak team: This team is made up of Medical Officers of Health (MOH), the Communicable Disease Control Nurses and Safe Healthy Environments Public Health Inspectors. It provides consultation and leadership in outbreak investigations in sites and reports outbreaks to Alberta Health.

Cohorting: Controlling the movement of HCW/staff and patients for the purpose of limiting an outbreak to a specific unit/floor/area within a larger site.

Close contact: Any person suspected to have been exposed to an infected person or a contaminated environment to a sufficient degree to have had the opportunity to become infected or colonized with a pathogen.

Congregate setting: Locations where individuals live, work or are cared for within close quarters in a communal environment**.**

Continuing care home (CCH): A facility or part of a facility where facility-based care is provided to residents, some of whom must be eligible residents. CCHs are publicly funded facility-based accommodations that provide care (health and support services) appropriate to meet the resident's assessed needs. The type of care needed is determined through a standardized assessment and single point of entry process and consists of Type A, Type B and Type C. Individuals admitted into CCH Care Homes Type A and B are required to pay accommodation fees (room and board and other costs associated) as set by Alberta Health.

Epidemiological link: Cases were acquired in the same location or from the same person in the workplace setting/site (during their incubation period or period of communicability), and there is evidence of healthcare-associated transmission within the site.

Exposure investigation (EI) number: a number assigned by the Alberta Precision Laboratory for Public Health for the purpose of tracking laboratory specimens associated to a specific event / potential outbreak at a specific location and time.

Healthcare worker / staff (HCW/staff): As defined by Alberta Health (AH) includes **all** individuals at increased risk for exposure to, and/or transmission of, a communicable disease because they work, study, or volunteer in one or more of the following healthcare environments: hospital, nursing home (facility living), supportive living accommodations, or home care setting, mental health facility, community setting, office or clinic of a health practitioner, clinical laboratory. This includes students, resident physicians, midwives, physicians as well as nonessential personnel such as volunteers and contractors.

Medical Officer of Health (MOH): Physician appointed as Executive Officer under the Public Health Act with focus on the health of the population, reports the health status of the population, controls and manages infectious and communicable diseases, gives direction to other members of the AHS Public Health Outbreak team (including Communicable Disease Control and Safe Healthy Environment) service programs, and to chronic disease and injury prevention

Medical Officer of Health (MOH) Designate: Public Health staff designated by the Zone Medical Officer of Health to assist with decision making regarding outbreak management in the zone.

Outbreak Management Team (OMT): A group of key individuals, including but not limited to, representatives from the AHS Public Health Outbreak team, Infection Prevention and Control (IPC/ICD), WHS//OHS&W, Site Administration/Site Management or their Designate who work cooperatively to ensure a timely and coordinated response to a suspect or confirmed outbreak. Composition of the OMT will depend on disease and site type.

ProvLab: Alberta Precision Laboratory for Public Health

Restriction: A measure that prevents HCW/staff with new symptoms / positive test results / or who deemed to be susceptible from working, until the risk for patients or HCW/staff is low or minimal. These recommendations are made by the AHS Public Health Outbreak team, or WHS/OHS&W.

Unit: May refer to a single acute care unit or area, but some units/areas may be viewed as contiguous and considered as though they are one unit for the purposes of this definition due to the flow of HCW/staff (such as obstetrical assessment, labour and delivery, and postpartum care). In some settings, a unit may refer to those HCW/staff who during the 10 days preceding the infections were sharing breakrooms or meeting spaces or work spaces.

Workplace/Occupational Health and Safety (WHS/OHS&W): Designated personnel responsible for HCW/staff health and safety in sites. In some sites, Employee Health or the Site Management or the Site Medical Leader may fill this role.

Appendix A: Roles and Responsibilities

The RACI matrix outlines the specific responsibilities of the key partners roles by function and task for the major actions associated with outbreak preparation and management. Refer to Table A.1 RACI outbreak matrix.

RACI	
R	**Responsible**: Does the work.
A	**Accountable**: Delegates the work.
C	**Consulted**: Provides input.
I	**Informed**: Needs to be told.

Table A.1: RACI outbreak matrix

Functions	Context	Partners						
		OMT Lead[9] and/or MOH	IPC	WHS /OHS&W	Public Health (CDC[10] or SHE/EPH[11])	Site or Unit Manager	Site Leadership	ProvLab
Surveillance/ Case Finding (Investigate)	HCW/staff (acquired at work)	A	C	R/A	C/I	C	I	
	HCW/staff (acquired in community)	A		R/A	C/I			
	HCW/staff (at work while communicable)	A	C	R/A	C/I	C	I	
	Patient (inpatient unit)	A	R/A	C	C/I	C	I	
	Patient (outpatient unit)	A	R/A	C	C/I	C	I	
	Visitor to unit	A	C	C	C/I	C	I	
Outbreak declaration		A	C	C	R/A	C	I	I
Notify AH		A			R/A			
Notify AHS (Zone Leads)		A	R				R	
Communicate with affected units	Patients	A	A	C	C/I	R	I	
	HCW/staff	A	C	A	C/I	R	I	
	Visitors	A	C	C	C/I	R	I	
Implementation of IPC measures		A	C	C	C	R		
Patient testing strategy		A	R/A	I	R/A		I	C
Monitoring outbreak control strategies		A	R	R	C	R		
Reporting outbreak status (tracking and communication)		A	R	R	R/A	R	I	R
Declaring outbreak over		A	C	C	R/A	C	I	I

[9] The Outbreak Management Team (OMT) Lead:

- Should be an expert in outbreak management such as a MOH or IPC physician.
- Alternatively, a co-lead model could be used in which an IPC physician/MOH and site operations/medical lead are partnered.
- OMT Lead is an independent role, separate from usual functions and responsibilities.

[10] CDC = Communicable Disease Control

[11] SHE = Safe Healthy Environments; EPH = Environmental Public Health

Appendix B: Case and Outbreak Definitions

Table B.1: COVID-19 illness

Refer to Table 2A: Signs and symptoms to monitor for in patients and HCW/staff

COVID-19 illness case definition[12]	COVID-19 illness outbreak definition
A person with confirmation of infection with the virus (SARS-CoV-2) that causes COVID-19 by: • A positive result on a molecular test[13] regardless of whether symptoms are present OR • One positive result on a Health Canada approved rapid/point-of-care (POC) antigen test in a person with COVID-19 symptoms OR • Two positive results on a Health Canada approved rapid/POC antigen test completed at least 24 hours apart in a person who is asymptomatic.	Two or more confirmed hospital-acquired[14] COVID-19 patient case(s) with a common epidemiological link within a 10-day period. OR Two or more confirmed[12] COVID-19 cases in HCW/staff assigned/linked to a unit within a 10-day time period AND where at least one of the HCW/staff was in the workplace during the communicable phase of illness[15] AND/OR it is suspected there has been work site transmission as cause for one or more of the infections. The transmission could have been: • Patient to HCW/staff transmission; or • HCW/staff to HCW/staff transmission; or • Visitor to HCW/staff transmission; or • If after detailed review it is clear there was no community risk for infection acquisition for either HCW/staff then even if the transmission link remains unknown, outbreak criteria may be met. Note: If variant testing results are available and are discordant, then re-assess outbreak status.

[12] Refer to Alberta Health Public Health Disease Management Guidelines: Coronavirus, COVID-19.

[13] A molecular test is a nucleic acid amplification test (NAAT) such as polymerase chain reaction (PCR), loop-mediated isothermal amplification (LAMP) or rapid molecular test.

[14] Laboratory-confirmed COVID-19 infection in a patient admitted to hospital at least four calendar days before symptom onset; OR who had a swab test positive when collected least four calendar days after admission; OR a patient admitted to hospital for less than four calendar days who is deemed to have a confirmed hospital-acquired COVID-19 infection for any reason.

[15] The communicable phase of illness includes the pre-symptomatic phase (48 hours before first symptom onset) and the 10 days after symptom onset or until symptoms have improved AND afebrile for 24 hours without the use of antipyretic medication, whichever is longer.

Table B.2: Viral respiratory illness (VRI)

<table>
<tr><th colspan="2">Patient VRI case definition[16]</th><th>VRI outbreak definition</th></tr>
<tr><td colspan="2">New/acute onset of viral respiratory illness with TWO or more symptoms below, at least ONE of which MUST be respiratory:</td><td rowspan="2">Two or more hospital-acquired patient VRI cases within a 10-day period with a common epidemiological link
OR
Two or more HCW/staff VRI cases[17] within a 10-day period with a common epidemiological link
Note:
• VRI case or outbreak includes any non-influenza, non-COVID-19 pathogen.
• Where laboratory confirmation is available, a VRI outbreak would be called if at least two VRI cases are due to the same confirmed pathogen.
• Patient cases must be hospital-acquired.[18].
• HCW/staff cases must have a common occupational link.</td></tr>
<tr><th>Respiratory</th><th>Other</th></tr>
<tr><td>• Cough
• Shortness of breath/ difficulty breathing/dyspnea
• Decreased O_2 saturation or increased O_2 requirement
• Sore throat/painful swallowing/hoarse voice
• Runny nose/nasal congestion/sneezing
• Loss of/change to sense of taste or smell.</td><td>• Fever
○ Adults: greater than 37.8 °C
○ Pediatrics: greater than or equal to 38 °C
• Headache
• Myalgia (muscle ache) or arthralgia (joint pain)
• Fatigue (significant and unusual)
• Nausea/vomiting/diarrhea</td></tr>
</table>

[16] It is recognized that the definitions for viral respiratory illness (VRI) may differ slightly between this document and the Connect Care Communicable Disease Screen for patients with suspected VRI or COVID-19. These definitions serve different purposes. This definition is for population surveillance whereas the screening tool is a means for HCW/staff to assess the infectious risk of patients to themselves and others and implement appropriate preventive measures.

[17] Use symptom list in Table 2A: Symptoms to monitor for in patients and HCW/staff.

[18] Symptom onset in a patient admitted to hospital at least 48 hours OR symptom onset in a patient who has been admitted to hospital for less than 48 hours who was discharged from an acute care site within the previous 48 hours prior to symptom onset OR a patient who is re-admitted with symptoms which started less than 48 hours after discharge. Use COVID-19 definitions if patient tests positive for COVID-19.

Table B.3: Influenza illness

Influenza illness case definition	Influenza illness outbreak definition
Clinical illness (as defined by VRI above) with laboratory confirmation of infection by: • Detection of influenza RNA **OR** • Demonstration of influenza virus antigen in an appropriate clinical specimen **OR** • Isolation of influenza virus from an appropriate clinical specimen **OR** • Significant rise (fourfold or greater) in influenza IgG titre between acute and convalescent sera.	Two or more confirmed hospital-acquired[18] patient influenza cases within a 7-day period with a common epidemiological link **OR** Two or more confirmed HCW/staff influenza cases within a 7-day period with a common epidemiological link.

Table B.4: Mixed pathogen outbreak (respiratory)

Mixed pathogen outbreak (respiratory) definition
A mixed pathogen outbreak (respiratory) could result when a combination of infections with different respiratory pathogens/viruses are identified on a unit or in a site. This could result in a combination of: • Influenza and COVID-19 cases • Influenza and VRI cases • COVID-19 and VRI cases • VRI outbreak with two different VRI pathogens. Virus-specific outbreak definition must be met for each of the pathogens in the mixed pathogen outbreak (respiratory). Where a pathogen is not identified, the criteria for a VRI outbreak definition must be met. **Note:** • The IPC and/or WHS/OHS&W teams, in discussion with the AHS Public Heath Outbreak team, will advise which recommendations are applied where there is a discrepancy due to a mixed pathogen outbreak (viral respiratory). The general principle of applying the more conservative recommendation will be followed. • If there are concurrent viral respiratory and GI outbreaks (refer to Table B.5: Gastrointestinal Illness), the AHS Public Health Outbreak team will provide guidance on a situation-specific basis, and provide support along with IPC and/or WHS/OHS&W.

Table B.5: Gastrointestinal illness

Gastrointestinal (GI) illness case definition	GI illness outbreak definition
At least ONE of the following criteria must be met and not be attributed to another cause (such as *Clostridioides difficile* diarrhea, medication, laxatives, diet or prior medical condition): • Two or more episodes of diarrhea (loose or watery stools) in a 24-hour period, above what is normally expected for that individual **OR** • Two or more episodes of vomiting in a 24-hour period **OR** • One or more episodes of vomiting AND diarrhea in a 24-hour period **OR** • One episode of bloody diarrhea **OR** • Laboratory confirmation of a known enteric pathogen AND at least one symptom compatible with a GI infection (nausea, vomiting, diarrhea, abdominal pain or tenderness).	Two or more hospital-acquired.[18] patient GI cases with initial symptom onset within a 48-hour period with a common epidemiological link **OR** Two or more HCW/staff GI cases with initial symptom onset within a 48-hour period with a common epidemiological link. Note: Where laboratory confirmation is available, GI outbreak would be called if at least two GI cases due to the same confirmed pathogen. Discuss with MOH/designate. Consider pathogen and incubation period.

Table B.6: Mixed pathogen outbreak (GI)

Mixed pathogen outbreak (GI) definition
A mixed pathogen outbreak (GI) could result when a combination of infections with different GI pathogens are identified on a unit or in a site. Pathogen-specific outbreak definition must be met for each of the pathogens in the mixed pathogen outbreak (GI). Where a pathogen is not identified, the criteria for a GI outbreak definition must be met. **Note:** • The IPC and/or WHS/OHS&W teams, in discussion with the AHS Public Health Outbreak team, will advise which recommendations are applied where there is a discrepancy due to a mixed pathogen outbreak (GI). The general principle of applying the more conservative recommendation will be followed. • If there are concurrent viral respiratory (refer to Tables 3A, 3B and 3C) and GI outbreaks: The AHS Public Health Outbreak team will provide guidance on a situation-specific basis, and provide support along with IPC and/or WHS/OHS&W.

Appendix C: Pathogens Commonly Associated with VRI

Table C.1: Pathogens commonly associated with VRI

(Reference: IPC Diseases and Conditions Table for Management of Patients in Acute Care)

Pathogen	Adenovirus
Common symptoms / clinical presentation	Sore throat, runny nose, coughing, increase O_2 requirement, decrease, O_2 saturation, sneezing
Infectious substance / transmission	Respiratory secretions are transmitted person-to-person by: • Large respiratory droplets • Aerosols (AGMP) • Direct/indirect contact with surfaces, equipment, or body parts recently contaminated with respiratory secretions.
Incubation period	2 to 14 days
Period of communicability	• Communicable for duration of symptoms. • Maintain precautions until symptom resolution/improvement/ stabilization for at least 48 hours. • For patients who are immunocompromised: consult with IPC on a case-by-case basis due to prolonged viral shedding.
Outbreak restrictions / recommendations for acute care[19]	Refer to Section 3: Viral respiratory illness outbreak control.
Pathogen	**COVID-19**
Common symptoms / clinical presentation	• Refer to Table 2A • All symptoms listed are possible COVID-19 symptoms
Infectious substance / transmission	Respiratory secretions transmitted person-to-person by: • Large respiratory droplets • Aerosols (AGMP) • Direct/indirect contact with surfaces, equipment, or body parts recently contaminated with respiratory secretions.

[19] First day is designated as Day 0; after the first 24 hours is day 1. If IPC or the AHS Public Health Outbreak team or WHS/OHS&W declares the outbreak to be over 7 days after onset of symptoms in the last case, then outbreak closes on the morning of day 8.

Incubation period	1 to 10 days
Period of communicability	• Begins up to 48 hours prior to symptom onset. • Continues until patient is considered to be recovered. • Maintain Contact and Droplet precautions for 10 days after the last exposure date **and** 48 hours symptom resolution/ improvement, whichever is longer unless otherwise directed by IPC. ○ Depending on the patient's clinical presentation and medical history/co-morbidities, this can be up to 21 days (or more if severely immunocompromised) from symptom onset (or from the original COVID-19 positive test if symptom onset unknown) and symptoms have improved/stabilized for at least 48 hours, whichever is longer. • Refer to Discontinuation of Contact and Droplet Precautions for Suspected or Confirmed Viral Respiratory Infection [including COVID-19].
Outbreak restrictions / recommendations for acute care[19]	Refer to Section 3: Viral respiratory illness outbreak control.
Pathogen	**Enterovirus/Rhinovirus**
Common symptoms / clinical presentation	Sore throat, runny nose, coughing, increase O_2 requirement, decrease O_2 saturation, sneezing
Infectious substance / transmission	Respiratory secretions are transmitted person-to-person by: • Large respiratory droplets • Aerosols (AGMP) • Direct/indirect contact with surfaces, equipment, or body parts recently contaminated with respiratory secretions.
Incubation period	2 to 5 days
Period of communicability	• Communicable for duration of symptoms. • Maintain precautions until symptom resolution/improvement/ stabilization for at least 48 hours. • For patients who are immunocompromised: consult with IPC on a case-by-case basis due to prolonged viral shedding.
Outbreak restrictions / recommendations for acute care[19]	Refer to Section 3: Viral respiratory illness outbreak control.

Pathogen	Human Metapneumovirus (hMPV)
Common symptoms / clinical presentation	Cough, increase O_2 requirement, decrease O_2 saturation, fever, muscle or joint aches, fatigue, sore throat, nasal congestion, shortness of breath
Infectious substance / transmission	Respiratory secretions transmitted person-to-person by: • Large respiratory droplets • Aerosols (AGMP) • Direct/indirect contact with surfaces, equipment, or body parts recently contaminated with respiratory secretions.
Incubation period	3 to 5 days
Period of communicability	• Communicable for duration of symptoms • Maintain precautions until symptom resolution/improvement/ stabilization for at least 48 hours. • For patients who are immunocompromised: consult with IPC on a case-by-case basis due to prolonged viral shedding.
Outbreak restrictions / recommendations for acute care[1919]	Refer to Section 3: Viral respiratory illness outbreak control.
Pathogen	**Influenza A / Influenza B**
Common symptoms / clinical presentation	• Sudden onset of cough, increase O_2 requirement, decrease O_2 saturation, fever, muscle or joint aches, fatigue, sore throat • In children under age 5, GI symptoms may also be present. • In patients younger than 5 years of age or older than 65 years of age fever may not be prominent.
Infectious substance / transmission	Respiratory secretions transmitted person-to-person by: • Large respiratory droplets • Aerosols (AGMP) • Direct/indirect contact with surfaces, equipment, or body parts recently contaminated with respiratory secretions.
Incubation period	1 to 4 days
Period of communicability	• Communicable for duration of symptoms • Maintain precautions until symptom resolution or improvement for at least 48 hours • For patients who are immunocompromised: consult with IPC on a case-by-case basis due to prolonged viral shedding.
Outbreak restrictions / recommendations for acute care[19]	Refer to Section 3: Viral respiratory illness outbreak control.

Pathogen	Non-COVID-19 Coronaviruses
Common symptoms / clinical presentation	Sore throat, runny nose, coughing, increase O_2 requirement, decrease O_2 saturation, sneezing
Infectious substance / transmission	Respiratory secretions are transmitted person-to-person by: • Large respiratory droplets • Aerosols (AGMP) • Direct/indirect contact with surfaces, equipment, or body parts recently contaminated with respiratory secretions.
Incubation period	Usually 2 to 4 days
Period of communicability	• Communicable for duration of symptoms. • Maintain precautions until symptom resolution/improvement/stabilization for at least 48 hours. • For patients who are immunocompromised: consult with IPC on a case-by-case basis due to prolonged viral shedding.
Outbreak restrictions / recommendations for acute care[19]	Refer to Section 3: Viral respiratory illness outbreak control.
Pathogen	**Parainfluenza Type 1, 2, 3, 4**
Common symptoms / clinical presentation	Cough, increase O_2 requirement, decrease O_2 saturation, fever, muscle or joint aches, fatigue, sore throat, runny nose, sneezing, wheezing, croup, bronchitis
Infectious substance / transmission	Respiratory secretions transmitted person-to-person by: • Large respiratory droplets • Aerosols (AGMP) • Direct/indirect contact with surfaces, equipment, or body parts recently contaminated with respiratory secretions.
Incubation period	2 to 6 days
Period of communicability	• Communicable for duration of symptoms; however, cough may persist for 1 to 3 weeks post-acute infection. • Maintain precautions until symptom resolution/improvement/ stabilization for at least 48 hours. • For patients who are immunocompromised: consult with IPC on a case-by-case basis due to prolonged viral shedding.
Outbreak restrictions / recommendations for acute care[19]	Refer to Section 3: Viral respiratory illness outbreak control.

Pathogen	Respiratory Syncytial Virus (RSV)
Common symptoms / clinical presentation	Cough, increase O_2 requirement, decrease O_2 saturation, fever, muscle or joint aches, fatigue, sore throat, runny nose, sneezing, wheezing
Infectious substance / transmission	Respiratory secretions transmitted person-to-person by: • Large respiratory droplets • Aerosols (AGMP) • Direct/indirect contact with surfaces, equipment, or body parts recently contaminated with respiratory secretions.
Incubation period	2 to 8 days
Period of communicability	• Communicable for duration of symptoms. • Maintain precautions until symptom resolution/improvement/ stabilization for at least 48 hours. • For patients who are immunocompromised: consult with IPC on a case-by-case basis due to prolonged viral shedding.
Outbreak restrictions / recommendations for acute care[19]	Refer to Section 3: Viral respiratory illness outbreak control.

Appendix D: Antiviral Chemoprophylaxis for Influenza Outbreaks

Alberta Health Services (AHS) supports the National Advisory Committee on Immunization (NACI) recommendations for influenza control published annually in the Canada Communicable Disease Report.

Influenza immunization is the primary strategy for prevention of influenza infection and illness. **Antiviral chemoprophylaxis should not replace annual influenza immunization.** Instead, it should be used as an adjunct to immunization during influenza outbreaks. When antiviral chemoprophylaxis is administered at the same time as an outbreak is confirmed, the number of new cases usually decreases quickly.

Both oseltamivir and zanamivir can be used for the prevention of influenza A and B. The mechanism of action of these neuraminidase inhibitors is to prevent release of influenza virus from infected cells. Due to high levels of amantadine resistance in recent years, amantadine is not recommended for antiviral chemoprophylaxis against influenza. In addition to increasing resistance of influenza A, influenza B is inherently resistant to it. Neither oseltamivir nor zanamivir are effective for antiviral chemoprophylaxis in preventing viral respiratory infections other than influenza, such as RSV and parainfluenza.

The recommendation to implement antiviral chemoprophylaxis for outbreak management is made by IPC, WHS/OHS&W and/or the AHS Public Health Outbreak team.

Patients

- During an influenza outbreak, antiviral chemoprophylaxis should be considered for all patients based on risk and irrespective of immunization status.
- Each unit/site should develop a process for how antiviral chemoprophylaxis will be ordered for patients.

HCW/staff

- Antiviral chemoprophylaxis is also recommended for HCW/staff who are unimmunized unless a contraindication is present.
- During outbreaks caused by influenza strains that are not well matched by the vaccine, antiviral chemoprophylaxis should also be considered for exposed, HCW/staff who are asymptomatic regardless of their immunization status.
- HCW/staff who require antiviral chemoprophylaxis should consult with their WHS/OHS&W or designate, or their own family physician/prescribing pharmacist for prescriptions and monitoring.

Duration of antiviral chemoprophylaxis:

- The recommended duration of antiviral chemoprophylaxis is 10 days.
- If the outbreak continues past 10 days, antiviral chemoprophylaxis should be extended until the outbreak is declared over.
- Antiviral prophylaxis for influenza outbreaks can be discontinued as soon as the outbreak is declared over, as long as a minimum of 10 days of prophylaxis has been received. Otherwise, continue until 10 days of antiviral prophylaxis has occurred.
- If cases continue beyond the first 72 hours after initiating antiviral chemoprophylaxis, this should be discussed by the OMT promptly for further direction.

Symptomatic individuals – early treatment

- Use early treatment with antiviral medication for any patients or HCW/staff who have had symptoms for less than 48 hours.
- Each attending physician is responsible for prescribing antiviral medication for treatment of individual patients.

Reference:

Aoki FY *et al.* 2021–2022 AMMI Canada guidance on the use of antiviral drugs for influenza in the COVID-19 pandemic setting in Canada. JAMMI 2022 March;7(1):1-7. doi:10.3138/jammi-2022-01-31.

Appendix E: HCW/staff Measures for Influenza Outbreaks

The AHS Public Health Outbreak team will provide best practice recommendations for immunization, antiviral chemoprophylaxis and/or work restrictions during influenza outbreaks. Antiviral chemoprophylaxis is recommended according to the Alberta Health Influenza Antiviral Drug Policy. Sites are to identify HCW/staff who are recommended to take antiviral chemoprophylaxis and advise them how to access it.

- It is recommended that HCW/staff who continue to work on an influenza outbreak unit/area should have received the current season's influenza vaccine more than 14 days ago or are receiving oseltamivir chemoprophylaxis.
    - Consult with OMT (including Zone MOH) if HCW/staff restrictions create extreme staffing challenges that affect service delivery.
- The affected unit/area should escalate any critical staffing shortage concerns to their Program/Site/Zone leadership.

Note: These measures are to be considered within the broader picture of staffing availability, and decisions regarding work requirements during staffing shortages will be made and/or escalated to program/site/zone leadership by the OMT Lead.

Assessment to determine if HCW/staff who are asymptomatic symptoms may work on the outbreak unit

HCW/staff are considered as **adequately protected** against influenza if:

- They have had the annual influenza vaccine AND
- It has been at least 14 days since influenza immunization.

HCW/staff who are asymptomatic and were immunized at least 14 days prior

- HCW/staff immunized 14 days prior are considered to have adequate protection against influenza.
- There is no work restriction. HCW/staff may work on the outbreak unit/site.
- Antiviral chemoprophylaxis is not recommended.

HCW/staff who are asymptomatic without adequate protection against influenza

Refer to the table below for work restriction and antiviral chemoprophylaxis recommendations for HCW/staff who are:

- Immunized with annual influenza vaccine less than 14 days ago OR
- Not immunized with annual influenza vaccine
    - Offer influenza vaccine immediately to HCW/staff who are unimmunized.

Table E.1: Antiviral chemoprophylaxis and work restrictions

HCW/staff who are asymptomatic	Accepts antiviral chemoprophylaxis	Does not accept antiviral chemoprophylaxis

Immunized with annual influenza vaccine **less than 14 days ago**	• May continue to work on the outbreak unit/site **AND**
	• Take antiviral chemoprophylaxis until at least 14 days since immunization or until the outbreak is over (whichever is shorter).
	• There is no waiting period between starting antiviral chemoprophylaxis and working.
		First 3 days (72 hours)
		• Restricted from working at any site and will monitor for symptoms for 3 days (72 hours) from last day worked on outbreak unit/site.
		Day 4 to end of outbreak if remains asymptomatic
		• **May be reassigned** to a non-outbreak unit/site for at least 14 days since immunization or until the outbreak is over (whichever is shorter).
		  ○ May then return to home unit/site.
		• **If reassignment is not possible** restrict from work for at least 14 days since immunization or until outbreak is over (whichever is shorter).
		  ○ May then return to work.

Not immunized with annual influenza vaccine	• May continue to work on the outbreak unit/ site if they take antiviral chemoprophylaxis until the outbreak is over.
	• There is no waiting period between starting antiviral chemoprophylaxis and working.
		First 3 days (72 hours)
		• Restricted from working at any site and will monitor for symptoms for 3 days (72 hours) from last day worked on outbreak unit/site.
		Day 4 to end of outbreak if remains asymptomatic
		• **May be reassigned** to a non-outbreak unit/site for the duration of the outbreak.
		  ○ May then return to home unit/site.
		• **If reassignment is not possible** restrict from work until outbreak is over.
		  ○ May then return to work.

Management of HCW/staff with symptoms

- If HCW/staff on antiviral chemoprophylaxis develop symptoms, they should stay home and contact WHS/OHS&W or designate for instructions about next steps.
  - In addition to WHS/OHS&W, HCW/staff must also contact their manager or supervisor to let them know that they are off work.
- Time that HCW/staff with symptoms should stay off work will be recommended by WHS/OHS&W / the AHS Public Health Outbreak team at time of the outbreak.
- Refer to Sections 3.4.5 and 3.46.