Alberta Public Health Disease Management Guidelines

Coronavirus, COVID-19

Alberta

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Health and Wellness Promotion Branch

Public Health and Compliance Branch

Alberta Health

Coronavirus, COVID-19 Public Health Disease Management Guideline | Alberta Health, Government of Alberta

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Case Definition

NOTE:

- Alberta Health will update this guideline as new information becomes available.
- **NOT** all confirmed/probable cases are reportable. Please refer to the reporting requirements section for more information.

Confirmed Case

A person with confirmation of infection with the virus (SARS-CoV-2) that causes COVID-19 by:

- A positive result on a molecular test (i.e. Nucleic acid amplification test (NAATs) such as polymerase chain reaction (PCR), loop-mediated isothermal amplification (LAMP) or rapid molecular test[(A)]) that is Health Canada approved or approved by the lab accreditation body of the jurisdiction in which the test was performed.

OR

- A positive result on a Health Canada approved rapid/point-of-care (POC) antigen test[(C)] in a person with clinical illness[(B)]

OR

- Two positive results on a Health Canada approved rapid/POC antigen test[(C)] completed not less than 24 hours of each other in an asymptomatic person

[(A)] Positive results by the Abbott ID NOW COVID-19, Simplexa®, GeneXpert®, Aptima or BD Max™ nucleic acid amplification test are deemed acceptable to provide a final result (i.e. does not require confirmatory testing). For more information refer to Annex A: Testing Performance.

[(B)] Clinical illness: Any one or more of the following: new or worsening cough, shortness of breath (SOB), sore throat, loss or altered sense of taste/smell, runny nose/nasal congestion, fever/chills, fatigue (significant and unusual), muscle ache/joint pain, headache, nausea/diarrhea

[(C)] Authorized medical devices for uses related to COVID-19: List of authorized testing devices

Probable Case[D] (Outbreak Only)

A person who in the last 7 days had close contact with a confirmed COVID-19 case OR was exposed to a known outbreak of COVID-19 OR had laboratory exposure to biological material (e.g., primary clinical specimens, virus culture isolates) known to contain COVID-19

WITH

- Clinical illness [B] and NO molecular test or rapid antigen test, or the result is inconclusive[E]

  OR

- NO clinical illness[B] and one positive rapid antigen test result with NO second rapid antigen test or molecular test completed

[B] Clinical illness: Any one or more of the following: new or worsening cough, shortness of breath (SOB), sore throat, loss or altered sense of taste/smell, runny nose/nasal congestion, fever/chills, fatigue (significant and unusual), muscle ache/joint pain, headache, nausea/diarrhea

[D] All symptomatic close contacts in high risk settings should be tested where feasible to confirm diagnosis. The probable case definition should only be used in the rare circumstances when molecular test or rapid antigen test cannot be done or is inconclusive but clinical suspicion is high.

[E] An inconclusive result on a real-time PCR assay is defined as:

- an indeterminate result on a single or multiple real-time PCR target(s) without sequencing confirmation or
- a positive result from an assay that has limited performance data available or
- performed by a laboratory that lacks/has not demonstrated accredited status by the College of Physicians & Surgeons of Alberta (CPSA)

Reporting Requirements

Physicians

- Alberta physicians shall notify their Zone MOH (or designate) of all confirmed COVID-19 deaths[F] by mail, fax or electronic transfer within **48 hours** (two business days) and include the following:
  - name;
  - age;
  - date of birth;
  - gender;
  - personal health number;
  - date of death; and
  - other relevant clinical/epidemiological information.

Laboratories

- All positive COVID-19 results, including molecular or rapid antigen test results performed at a hospital or reference laboratory (NML or provincial public health laboratory) or AHS mobile testing units or AHS assessment centres or FNIHB testing sites are reportable within 48 hours (two days) via established secure electronic (or fax) notification systems to:
  - the MOH (or designate) of the zone and
  - the Chief Medical Officer of Health (CMOH) (or designate)

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- The Zone MOH (or designate) shall forward the COVID-19/Seasonal Influenza Death and Hospitalized Case Report Form to the CMOH (or designate) using existing processes (e.g., CDOM or confidential fax).
  - The report form must be submitted within **one week** of notification of hospitalization, discharge from hospital, resolution of the COVID-19 case status; or death.
- The Zone MOH (or designate) shall forward the Alberta Outbreak Report Form (AORF) for any newly confirmed COVID-19 outbreaks to the CMOH (or designate), using existing processes (e.g., CDOM or confidential fax).
  - The initial report form must be submitted within **24 hours** of opening the outbreak investigation and the final report must be submitted within 48 hours of closing the outbreak investigation.
  - Aggregate numbers must be **reported weekly** for outbreaks in continuing care and acute care settings.
- For out-of-province and out-of-country confirmed COVID-19 cases that are reported as hospitalized/deceased, the Zone MOH (or designate) shall forward the following information to the CMOH (or designate) using existing processes (e.g., CDOM) within **48 hours** (two business days):
  - name,
  - date of birth,
  - out-of-province health care number,
  - out-of-province address and phone number,
  - positive laboratory report, and
  - other relevant clinical/epidemiological information.

Rapid/Point of Care Testing (POCT) Reporting:

- The following are **NOT** reportable to Alberta Health:
  - Positive rapid/POCT test results (antigen or molecular) in symptomatic individuals that are done via private testing
  - Individual positive results on rapid antigen tests used for the screening of asymptomatic persons by screening programs in the community (except in congregate settings)
  - At-home rapid antigen test results

[F] Confirmed COVID-19 deaths: deaths where a lab-confirmed COVID-19 infection is the cause or contributing cause that come to the attention of Public Health, including death in the community

Epidemiology

Etiology

Human coronaviruses are enveloped, ribonucleic acid (RNA) viruses that are part of the Coronaviridae Family.[1] There are 7 known human coronaviruses at present:

- Four types that cause generally mild illness- 229E, OC43, NL63 and HKU; and
- Two types that can cause severe illness: Middle East respiratory syndrome coronavirus (MERS-CoV) and severe acute respiratory syndrome coronavirus (SARS-CoV).[1]Refer to the Public Health Disease Management Guideline for Coronavirus – MERS/SARS for more information.
- COVID-19 is an illness caused by a coronavirus (SARS-CoV-2) first identified in December 2019, in Wuhan, China as having caused an outbreak of respiratory infections, including pneumonia.[2,3]

Viruses constantly change through mutation, and new variants of a virus are expected to occur. A variant of concern (VOC) is a variant that has one or more of the following characteristics:

- increased transmissibility,
- evades natural or vaccine-related immunity,
- increased virulence,
- evades detection by available diagnostic tests, or
- is less responsive to treatment[4,5]

For more information including designated VOCs in Canada, refer to the SARS-CoV-2 variants: National definitions, classifications and public health actions.

SARS-CoV-2 VOCs have been reported globally since December 2020. Alberta Health is continuously monitoring and assessing the impact of all circulating variants of concern on viral transmission, disease severity, diagnostic testing, therapeutics, and vaccine effectiveness in the province. For more information refer to the Alberta Health website on COVID-19 variants of concern.

Clinical Presentation

SARS-CoV-2 infection can be asymptomatic, mild, moderate or severe. Symptoms can vary depending on age, frequency and severity, variants of concern and vaccination status. Generally, most patients with asymptomatic infection or mild illness do not need medical care and those with mild to moderate illness can be managed as outpatients.[6,7]

The mean duration of acute illness is 7 days with the Omicron variant of concern that emerged in November 2021. For individuals with three doses of vaccine, duration of illness is shorter, around 4 days. Post COVID-19 condition (i.e. long-COVID) is a wide range of new, returning, or ongoing health problems such as physical and/or psychological symptoms that can be experienced more than 12 weeks after an initial COVID-19 infection.[6–8] For more information refer to Post-COVID condition (long COVID-19).

Children and adolescents infected with SARS-CoV-2 typically have mild symptoms, or are asymptomatic.[9] Although rare, severe illness and death have been reported. Some children and adolescents with recent COVID-19 (several weeks following a SARS-CoV-2 infection or epi linked to COVID-19 cases) may present with acute illness with a hyper inflammatory syndrome termed Multi-System Inflammatory Syndrome in children and adolescents (MIS-C) that can lead to shock and multi-organ failure. For more information on MIS-C in Canada refer to Multisystem inflammatory syndrome in children in Canada and the Alberta Health MIS-C Public Health Disease Management Guideline. Multisystem inflammatory syndrome has also been reported in adults (MIS-A) and can also lead to serious outcomes with multi organ failure.[8]

The Omicron variant is more transmissible than previous variants and the original non-VOC strain and has increased ability to escape immunity from previous infection or vaccines. Overall evidence suggests lower severity compared to the previous Delta variant.[10] All COVID-19 vaccines approved in Canada offer significant protection against severe disease.[11]

Diagnosis

A diagnosis of SARS-CoV-2 infection is based on testing. Acceptable specimen types for COVID-19 testing include nasopharyngeal (NP) swab, throat swab, nasal swab, NP aspirate, endotracheal tube (ETT) suction/sputum, or bronchoalveolar lavage/bronchial wash (BAL/BW), though specimen selection is dependent on the specific test being used and how the test was validated and/or Health Canada authorization for different specimen types. NP and throat swabs are recommended over nasal swabs for COVID-19 testing. If unable to collect a NP swab or throat swab, a deep nasal swab can be collected instead, though sensitivity may be reduced. It is recommended that hospitalized patients and residents in continuing care with COVID-19 symptoms be tested with an NP swab; this is to enhance sensitivity and to ensure that the sample is appropriate for the testing of other respiratory viruses, if applicable, since NP swabs are the standard for detecting other viruses such as influenza and respiratory syncytial virus. For patients who have a lower respiratory tract infection and are intubated, also submit an ETT suction or BAL/BW.[12]

Treatment

There are different types of treatments that have been authorized for the treatment of COVID-19. For more information, refer to the Outpatient Treatment for COVID-19 website and the following resources.

- Infectious Diseases Society of America (IDSA) Guidelines on the Treatment and Management of Patients with COVID-19
- The World Health Organization's Clinical Management of COVID-19 Patients

Pre-Exposure Prophylaxis

Evusheld has been authorized for the prevention of COVID-19 in individuals ≥12 years of age weighing at least 40 kg who are immunocompromised and unlikely to mount an adequate immune response to COVID-19 vaccination or who cannot be immunized.[13] For more information including current eligibility criteria refer to Outpatient Treatment for COVID-19.

Reservoir

SARS-CoV-2 is thought to have emerged from an animal source although this has not yet been confirmed.

Transmission

SARS-CoV-2 virus (non-VOC and VOCs) is transmitted person-to-person primarily via respiratory droplets that are generated when a person coughs, sneezes, talks, shouts or sings. The droplets range in size from large droplets (defined as >5-10 µm in diameter) that spread at close range (i.e., less than two metres) to smaller droplets (or aerosols) that in certain circumstances, have the potential to be infectious over longer distances and may be suspended for longer periods of time and can play a role in COVID-19 transmission. These circumstances include aerosol-generating medical procedures (AGMP) or specific settings such as indoor locations that may be poorly ventilated, crowded, where gatherings are taking place for prolonged periods or where heavy breathing or exertion is occurring. For more information refer to Considerations for aerosol transmission. Current evidence shows there is an increase in transmissibility with currently known VOCs.[14]

COVID-19 can also spread via direct physical contact with another person (e.g., hand shake) or by touching contaminated objects or surfaces and then touching one's own mouth, nose, or possibly eyes.[15] However, fomites do not appear to be a major source of transmission.[16] Infected individuals can transmit the virus 48 hours before symptom onset (i.e., pre-symptomatic) or even if they have an asymptomatic infection (i.e., never developed symptoms) or when their symptoms went unnoticed.[17,18]

Evidence indicates that Omicron is more transmissible than previous variants and can be transmitted to and result in infection in those previously infected and in those who are immunized with a primary series or have received a booster.[19]

Incubation Period

The incubation period for SARS-CoV-2 may differ depending on the VOC. Pre-Omicron, the incubation period ranged from 2-14 days with median 4-7 days.[6] The incubation period for Omicron is suggested to be shorter with a median of 2-4 days and a range of 0-8 days with the greatest majority falling between 1 and 6 days.[20–22] Given the current context in Alberta, the guidance in this document is based on an incubation period of 7 days.

Period of Communicability

The period of communicability may begin up to 48 hours before symptom onset. Studies have shown that after day eight of illness/symptoms no live virus was recovered from patients with upper respiratory tract disease or limited lower respiratory tract disease. People with more severe disease are likely to be infectious for a few days longer.[23,24] NAAT positivity from respiratory samples can be prolonged to 3-4 weeks after symptom onset even when no viable virus was detected.[25] There have been case reports of persistent RT-PCR results for up to 82 days after symptom onset.[26,27] Experience from other respiratory viral infections suggests that immunocompromised patients with COVID-19 may shed detectable SARS-CoV-2 viral material and potentially infectious virus longer.[28]

Evidence from VOCs pre-Omicron shows that communicability peaks just before symptom onset and the majority of SARS-CoV-2 transmission occurs early in the course of illness, generally in the 1-2 days prior to onset of symptoms and the 2-3 days after symptom onset. Contact tracing, viral load and viral culture studies showed that the potential for transmission falls rapidly after 2-3 days following symptom onset. Some evidence has shown that little to no transmission occurs five days following symptom onset. Immunized people are shown to have shorter communicability periods and viral load decreases faster in immunized Delta cases. There are some uncertainties about the period of communicability of cases with the Omicron variant,

but the serial interval (i.e. the time from symptom onset in the primary case to symptom onset in the secondary case) seems to be short.[29,30]

Host Susceptibility

Susceptibility is assumed to be universal. COVID-19 vaccines are effective at preventing severe outcomes such as hospitalization and death related to COVID-19 infection. The vaccine effectiveness against symptomatic infection with Omicron is quite low for individuals who are immunized with two doses of mRNA vaccines compared to Delta.[31] A booster dose after an initial primary series offers improved protection against infection with Omicron and greatly reduces risk of severe illness.[11]

Some populations, due to occupational or living conditions, are at increased risk of exposure to SARS-CoV-2 virus. Others are at increased risk of severe disease, hospitalizations and/or death due to the following factors that may intersect: having pre-existing medical conditions, advanced age, lower socioeconomic status, varying access to health care services and/or belonging to a racialized group.[32] For more information on risk factors for severe outcomes from COVID-19 and increased risk of exposure to COVID-19 refer to the National Advisory Committee on Immunization (NACI) recommendations on the use of COVID-19 vaccines.

Understanding of the immune response in COVID-19 disease continues to evolve. There is evidence of increased risk of re-infection with Omicron.[33] Ongoing COVID-19 studies are working to help establish the frequency and severity of reinfection with VOC and non-VOC and who might be at higher risk.

Incidence

For cases reported in Alberta refer to the following link:
https://www.alberta.ca/covid-19-alberta-data.aspx

For cases reported in Canada refer to the following link:
https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html

World Health Organization provides daily updates on global case counts and situation reports:
www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

Johns Hopkins COVID-19 Case Map
Coronavirus COVID-19 (2019-nCoV) (arcgis.com)

Public Health Management (Outbreak Only)

Key Investigation

- Refer to the Management of COVID-19 and Respiratory Outbreaks section.
- COVID-19 outbreaks, respiratory illness Outbreak (RIO) or influenza outbreaks should be managed as per direction from the Zone MOH.
- The Zone MOH will determine the need and extent of outbreak control measures.
- For additional outbreak management measures in different settings refer to AHS guides for outbreak prevention and control.

Management of a Case

- Individuals with symptoms of respiratory illness should stay home and seek care if symptoms worsen. For more information refer to isolation recommendation.
- Hospitalized cases are required to be reported as outlined in the reporting requirements section
- Non-Hospitalized cases are under laboratory surveillance only. No individual investigation or submission of report forms is required.

Management of Contacts

- Individual management of close contacts is **NOT** required and testing through the public health system is **NOT** indicated for close contacts. **NOTE:** close contacts may choose to use at home rapid tests after an exposure. For more information refer to the rapid testing at home website.
  - For recommendations for contacts refer to Information for Close Contacts of a COVID-19 Case website.
- The close contact definition is included below for the purposes of the probable case definition.
- The close contact definition may be used at the discretion of the MOH/designate in certain high-risk settings or under specific circumstances e.g. during an outbreak in congregate or acute care settings.

TABLE 1: DEFINITION OF CLOSE CONTACTS

Definition of Close Contacts
A close contact is someone exposed to a case while they were infectious[G] and is defined as: - An individual who had direct contact with infectious body fluids of a case i.e. was coughed or sneezed on while unprotected[H] or who for example, shared cigarettes, glasses/bottles, eating utensils with a case OR - A HCW[I] who provided unprotected[H] direct care for the case, OR - An individual and/or family member or other care givers who provided direct care to the case or who had other similar direct physical contact (e.g., intimate partner, hug, kiss, handshake) with the case OR - An individual who lived with or otherwise had unprotected[H] prolonged[J] contact with a case for 10 minutes or more over a 24-hour period (may be cumulative, i.e., multiple interactions) and within two metres OR - An individual who had unprotected[H] contact with a case within two meters for one minute or longer ▪ where the case engaged in activities that generate increased aerosols such as speaking, singing, shouting or breathing heavily (e.g., exercise)

- **NOTE:** Transmission can also happen beyond two metres when sharing a confined, crowded and/or poorly ventilated air space with a case while unprotected.[H]The exposures identified in the table carry the highest risk for viral transmission.
- **NOTE:** Household contacts are a type of close contact that have the highest attack rate. A household contact is defined as a person who lives in the same residence as the case OR who has been in frequent, long-duration, close-range interaction with the person who tested positive. For example, someone who is a caregiver, an intimate or sexual partner.

Management of Health Care Workers

Recommendations on Return to Work

- Refer to COVID-19 Return to Work Guide for AHS Healthcare Workers
- HCW who tested positive for COVID-19 should isolate as outlined on the isolation recommendations website.
  - If symptoms such as a lingering cough, loss or altered sense of taste/smell or fatigue persist beyond 5 days, the HCW may return to work as long as other symptoms have improved, and they are afebrile for a period of 24 hours without using fever reducing medications and well enough to go back to work. They should wear a well-fitting mask for the next 5 days while in indoor spaces with other people regardless of immunization status. After these 5 days, the worker should follow the masking requirements applicable to their workplace.
  - If the HCW is immunocompromised they should consult with WHS/OHS/MOH/designate for further direction about returning to work, as the recommendations for when to return may be longer due to the risk of prolonged viral shedding.

[G] For close contact identification purposes, the infectious period is from two days before onset of symptoms in the case (or if asymptomatic, two days before test date) to 7 days after OR for as long as the case has a fever, whichever is longer.

[H] An individual may be considered unprotected if at the time of the exposure they did not consistently and appropriately use personal protective equipment (PPE). Appropriate PPE is defined as a well-fitting surgical/procedure mask OR a well-fitting KN95 facemask, eye protection (e.g., goggles, visor, or face shield), gloves and gown when taking care of symptomatic patients or confirmed/probable cases of COVID-19. For more information, refer to the AHS COVID-19 Personal Protective Equipment website. For close contact assessment for situations where asymptomatic HCW worked with asymptomatic patients, see Management of HCW

[I] HCWs are defined as: all health practitioners and all individuals (including nutrition and food services, housekeeping, recreation etc.) 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 health care environments: hospital, nursing home (facility living), supportive living accommodations, or home care setting, mental health facility, community setting (e.g. paramedics, EMS, firefighters, police officers), office or clinic of a regulated health professional, clinical laboratory.

[J] As part of the individual risk assessment, consider the duration of the contact's exposure (e.g., a longer exposure time likely increases the risk), the case's symptoms (coughing or severe illness likely increases exposure risk) and whether exposure occurred in a health care setting

Considerations for Assessment of Exposures in HCW

- The following would apply if the MOH has determined that a HCW has been identified as a close contact:
  - A well-fitted surgical/procedure mask OR a well-fitting KN95 facemask and good hand hygiene is considered sufficient PPE for asymptomatic HCW working with asymptomatic patients or interacting with asymptomatic co-workers, including within the 48 hours prior to developing symptoms.
    - If HCW becomes symptomatic, all the patients who they cared for or co-workers they interacted with in the ***48 hours prior to symptom onset*** in that HCW will **NOT** be considered close contacts if the HCW wore a well fitted surgical/procedure mask OR a well-fitting KN95 facemask and practiced routine, frequent hand hygiene.
    - If a patient/co-worker becomes symptomatic, all HCW that cared for that patient/interacted with that co-worker in the ***48 hours prior to symptom onset*** in that patient/co-worker, would **NOT** be considered close contacts if they were wearing a well-fitted surgical/procedure mask OR a well-fitting KN95 facemask and practiced good hand hygiene i.e., sufficient PPE.
      - If the time of symptom onset for the patient cannot be reliably ascertained (e.g., patient with cognitive impairment), WHS/OHS/MOH/designate should be consulted regarding period of communicability and its relationship to appropriate PPE use.
- A well-fitted surgical/procedure mask OR a well-fitting KN95 facemask and good hand hygiene is **NOT** considered sufficient protection for HCW caring for symptomatic patients or if they had close interaction with a symptomatic co-worker (i.e. HCW is identified as a close contact of their symptomatic co-worker).
- PPE required for HCW caring for symptomatic patients or confirmed/probable cases of COVID-19 includes: a well-fitted KN95 mask or N95 respirator, eye protection (e.g., goggles, visor, and face shield), gloves and gown. For more information, refer to the AHS COVID-19 Personal Protective Equipment website.
- If a HCW was wearing appropriate PPE with the exception of gloves and a gown it is possible that the HCW may not be considered a close contact but this assessment would have to be done on a case by case basis by WHS/OHS/MOH/designate.
- Immunized HCW should continue to use recommended PPE when caring for patients based on their Point of Care Risk Assessment.

Regulated Health Professionals[(K)] in Community Healthcare Settings

- In private community healthcare settings, some health professionals are accountable to their regulatory body/colleges and some may have received professional guidance and training on PPE. These professionals are accountable to their college/regulatory body to follow guidance on the appropriate PPE products to use in their practice settings.
- **NOTE:** In certain circumstances, regulated health professionals may be assessed by the MOH/designate regarding their IPC practices to determine if those offered sufficient protection while caring for COVID-19 patients.

[(K)] This includes professionals regulated under the *Health Professions Act* and the *Veterinary Profession Act*.

- In schools, child care settings, congregate care facilities and homeless shelters/temporary housing, the Respiratory Illness (RI) case definition and the Respiratory Illness Outbreak (RIO) definition will be used to identify, report and manage outbreaks that may be caused by a variety of respiratory pathogens, including COVID-19.

Confirmed COVID-19 Outbreak Definitions

TABLE 2: OUTBREAK DEFINITIONS OF COVID-19

Type of Setting	Example	Confirmed COVID-19 Outbreak**
Congregate(L) Care Facility	Licensed supportive living (including lodges), long-term care (nursing homes and auxiliary hospitals), and hospices	2 confirmed resident or HCW/Staff cases$^{\Omega}$
	Acute Care	See AHS Acute Care Outbreak document
Congregate(L) Living Settings	Prisons/Correctional Facilities	2 confirmed patient cases$^{\Omega}$
Other Settings	MOHs can exercise their authority for further investigation in any situation with unusual number of illness	

**Confirmed resident/patient case(s) needs to have been in the setting during their incubation period or infectious period. Staff/HCW cases need to have been symptomatic while attending the setting. For more information refer to the *AHS Outbreak Prevention and Control Guides*

$^{\Omega}$Cases within a 7 day period with an epi link (i.e. an exposure at a common setting, or time spent in a common location or venue, where there is reasonable evidence that transmission could have occurred)

Respiratory Illness Outbreak (RIO) Definition

- Two or more cases with respiratory illness(M) within 7 days with a common epidemiological link;

AND

- NO respiratory pathogen identified OR one case of any respiratory pathogen identified (e.g., Influenza; COVID-19; RSV)

TABLE 3: RIO DEFINITION

Setting	Confirmed Respiratory Illness Outbreak
Schools (K-12)	10% absenteeism due to respiratory illness OR an unusual amount of students with similar respiratory symptoms AND at least two epidemiologically linked individuals within the school setting (who are not from the same household) with respiratory illness symptom onset within a **7 day period**.
**Childcare settings: Daycares, after school care, preschools	At least two epidemiologically linked cases with respiratory illness in individuals in the child care cohort (not from the same household) with symptom onset within a **7 day period**.
Homeless shelters/temporary housing	Unusual number of clients (above baseline) with respiratory illness and at least two epidemiologically linked individuals within the setting with respiratory illness symptom onset within a **7 day period**.

***NOTE:** Administrators/Operators should call AHS COVID-19 Coordinated Early Identification and Response (CEIR) at 1-844-343-0971 to report symptomatic children in childcare setting*

(L) Congregate settings are defined as locations where individuals live, work or are cared for within close quarters in a communal environment

(M) **Respiratory illness definition:** NEW onset of TWO or more symptoms below, at least one must be from List A:

- List A: cough, shortness of breath (SOB), sore throat, loss or altered sense of taste/smell, runny nose/nasal congestion
- List B: fever, fatigue (significant and unusual), muscle ache/joint pain, headache, nausea/diarrhea

TABLE 4: MIXED PATHOGEN OUTBREAK CLASSIFICATION IN CONGREGATE CARE/LIVING FACILITY

Cases Identified*	Outbreak Classification	Outbreak Closed
≥2 confirmed COVID-19 cases with an epi link AND ≥2 confirmed influenza cases with an epi link	COVID-19/influenza	14 days from date of onset of symptoms in the last case*
≥2 confirmed influenza cases with an epi link AND ≤1 confirmed COVID-19 case	Influenza	Outbreak remains open for **7 days** after symptom onset for last Influenza case
≥2 respiratory illness cases with an epi link AND ≤1 confirmed influenza case AND ≤1 confirmed COVID-19 case	Respiratory Illness Outbreak based on the organism identified	Based on the organism identified

**NOTE:* *Outbreaks can be closed 14 days after the last resident case regardless if additional staff cases are found at the end of an outbreak*

Preventative Measures

- For more information on prevention of COVID-19 refer to the following websites:
  - COVID-19 info for Albertans
  - Information for Albertans
  - **COVID-19: Prevention and risks**
  - Get vaccinated

Annex A: Testing Performance

Molecular, antigen and serology tests have been developed and continue to be developed and approved to test for COVID-19. Molecular tests detect the unique genetic sequence of the SARS-CoV-2 virus and antigen tests detect proteins of the virus. Both can be used to diagnose acute infection.

Serology tests do not directly detect the virus but measure antibodies the body produces after infection with the virus. These antibodies can provide evidence of previous or sometimes current infection. Since it can take more than a week for antibodies to be produced following infection, serology tests are generally not recommended for use as a diagnostic tool to confirm acute infection.[34] Currently in Alberta, serology tests are mainly used for population serosurveys. Serology testing is available for clinical use for certain select situations (e.g., to assist in the diagnosis of children with MIS-C) in consultation with APL microbiologists/virologists and rapid serology testing is also used to determine eligibility for specific monoclonal antibody treatments against COVID-19 (e.g., casirivimab and imdevimiab). Serology testing is not recommended and should not be used to determine if an immune response to COVID-19 vaccine has been mounted or to assess whether immunity has waned. It is still unknown what antibody level correlates with protection against COVID-19, and serology testing in some labs may also not detect antibodies developed as a response to vaccine, depending on the methodology used.

Testing Performance:

Molecular Tests

The overall performance of COVID-19 molecular (Nucleic Acid) tests (e.g. polymerase chain reaction (PCR), loop-mediated isothermal amplification [LAMP] or rapid molecular test) to determine or rule out COVID-19 cases depends on sensitivity/specificity of the test, stage of illness and the epidemiology of COVID-19 in the population.[35,36]
False negative rates of molecular tests used to test for SARS Co-V-2 ranges from 1 to 30%. The following may lead to false negative results:

- Low viral load,
- Insufficient virus at the time of specimen collection (i.e., early in the incubation period or later in the course of illness),
- Low analytic sensitivity,
- Variability in viral shedding, or
- Inappropriate specimen type.[37]
- improper specimen collection,
- degradation of nucleic acids due to type of transport media used and transport time and conditions

False negative results pose a challenge in public health management of COVID-19 cases as an individual may still be infected and be infectious to others. If the clinical index of suspicion is high, a negative result should not rule out disease and the test should be repeated.[N]

Although considered extremely rare, false positive results can happen because of non-specific PCR reactions, contamination, or specimen mislabeling or mix-up .The proportion of false positive results increases as the prevalence of COVID-19 in the population decreases.[36] If a test is thought to be a false positive, the test should be repeated. For more information refer to the COVID-19 Scientific Advisory Group Rapid Response Report.

COVID-19 rapid nucleic acid tests (NAT) such as Simplexa®, GeneXpert®, or BD Max™ are available in Alberta and provide test results within six hours of receipt at the laboratory. These kits are considered rapid COVID-19 tests and are referred to as such in the current reporting scheme used by APL and Dynalife. The performance characteristics of these rapid tests are similar to the COVID-19 lab-developed test being used at APL and additional confirmatory testing is not necessary.[37]

The ID NOW™ is a rapid molecular test which detects SARS-CoV-2 from throat swab specimens and approaches the sensitivity and specificity of lab-based molecular testing done by APL. It provides results in approximately 15 minutes and can be used at the point-of-care (for example, at some assessment centres immediately after specimen collection) but may also be used by a laboratory (currently used in many hospital laboratories throughout Alberta). Like other molecular tests, positive results don't require confirmatory testing. Confirmatory lab-based molecular testing is not necessary for symptomatic individuals at assessment centers with a negative ID NOW result but may be necessary in other settings.

[N] While waiting for results of the repeat test, the symptomatic individual should continue to follow isolation recommendations or if hospitalized, continue to be on droplet and contact precautions.

Ct Values

There is considerable interest in using cycle threshold (Ct) values produced by molecular assays to help guide interpretation of tests and patient management. While Ct values provide a general sense of the level of viral nucleic acid in a given sample, they are raw values generated by the testing instruments and are not meant to be interpreted in a quantitative manner. Ct values are not routinely reported by the laboratory and APL discourages requests to disclose Ct values and the use of Ct values to guide patient management or assessment of reinfection. If Ct values are disclosed, caution must be exercised in the interpretation with the following being taken into account:

- Ct values are not viral loads – all tests used in Alberta are qualitative tests and therefore do not provide viral loads.
- No COVID-19 PCR assays are FDA or Health Canada authorized as quantitative tests.
- Ct values are imprecise measurements due to the heterogeneous nature of respiratory specimens.
- Ct values are also dependent on collection quality, sample type, transport medium, transport conditions, and shipping time.
- Ct values are not suitable predictors of transmissibility, which is dependent on numerous clinical factors as well. Ct values for the same samples will vary widely depending on the instrument and assay used – they are not comparable from assay-to-assay.[38]

Serology Testing

Limitations of serology tests include the following:

- They are not useful in the diagnosis of acute COVID-19 infection (see above for more information).
- The relationship of various antibody types, amounts and timing of appearance to immunity is currently unknown.
- The sensitivity of serology testing in immunocompromised individuals or the elderly is currently not known.

Serological assays may be useful in targeted sampling studies in the population to model the spread of the virus and the immune response dynamics to inform the risk of further epidemic waves. They may also be used for retrospective case identification, diagnosing post-infectious complications, and to more accurately determine the prevalence of COVID-19 infection.[36] They are also being used to identify patients who qualify for monoclonal antibody therapy.[36]

Rapid/Point-of-Care COVID-19 Antigen Tests

Health Canada has approved a number of rapid antigen tests for diagnostic use in symptomatic individuals that have the potential to be run outside of the laboratory as point-of-care tests, including PanBio™ (manufactured by Abbott), which are available in certain sites in Alberta. The PanBio™ is an antigen test which has high specificity but reduced sensitivity (higher rate of false negative results) that detects SARS-CoV-2 from nasopharyngeal or nasal specimens. The BD Veritor™ is another point-of-care antigen test in Alberta. BTNX rapid response kits are also being distributed to the public for at-home use.

These rapid antigen tests provide results in approximately 15 minutes. For best performance, it is recommended that these tests be used in individuals who have been symptomatic for less than seven days.[39,40] A positive rapid antigen test in a symptomatic individual does not require a confirmatory test. A negative rapid antigen test in a symptomatic individual or a positive rapid antigen test in an asymptomatic individual should be repeated at least 24 hours later in order to confirm the results. Individuals who are eligible for publicly funded molecular testing should book a test using the AHS online assessment tool.

Annex B: Recommendations for COVID-19 Cases in Specific Populations

Immunocompromised Case

- There is currently little information on viral shedding in confirmed COVID-19 cases who are immunocompromised.
- However based on experience from other respiratory viruses, especially influenza virus, immunocompromised confirmed cases may shed SARS-CoV2 for a longer period of time.[28]
  - These cases (regardless of immunization status) should be isolated for 14 days from onset of symptoms or until symptoms have improved AND they are afebrile for 24 hours, without the use of fever-reducing medications, whichever is longer.
    - Absence of cough is not required for those known to have chronic cough or who are experiencing reactive airways post-infection.
    - Symptoms such as loss or altered sense of taste/smell or fatigue may last longer than 14 days, but do not require a longer isolation period.
  - Duration of isolation for those hospitalized should be decided in consultation with hospital IPC.
- **NOTE:** If a patient has been given additional instructions by their physician/specialist they should follow the instructions of their physician/specialist.

Resolved Case[O]

- Cases of reinfection with SARS-CoV-2 virus have been reported globally and there is some evidence indicating there is higher risk of reinfection with Omicron variant compared to previous variants.[33] Available evidence suggests that most individuals would have some increased protection for a period of time after diagnosis of COVID-19.
- Studies have demonstrated prolonged detection of SARS-CoV-2 RNA in COVID-19 cases even after symptoms have resolved; however in most cases, prolonged RNA detection does not reflect infectious virus. The median range of viral shedding has been reported to be 3-4 weeks after symptom onset, with case reports of persistent molecular test results for up to 82 days after symptom onset.[26,27]
- The strength and duration of protection from infection-acquired immunity is not fully known at this time, therefore resolved cases should be advised to be immunized. It is recommended that resolved cases wait eight weeks before receiving doses in their primary series and three months before receiving booster doses. Previous infection currently is not recommended as a substitute for immunization to meet vaccine requirements such as workplace vaccine mandates.
- Generally, asymptomatic resolved cases should NOT be re-tested with a molecular test for COVID-19 within 90 days of the initial positive test result or by rapid antigen test within 21 days of the initial positive test result.
- If the resolved case develops NEW COVID-19 symptoms after three weeks have passed since the initial positive test, rapid antigen testing can be done. Testing for other pathogens should be considered depending on symptoms and the setting. A rapid antigen test is very unlikely to be positive due to the previous infection more than 21 days after a previous positive test result. After 3 weeks, testing and management of resolved cases should be generally the same as other not previously infected people.
- It may be possible for a few individuals to shed detectable SARS-CoV-2 viral material with a molecular test longer than 90 days. If suspected to be the case, consider consultation with the local MOH and other specialists including microbiologists/virologists and infectious disease physicians can help with the investigation and management decision.
- If a resolved case is **identified as a** close contact within 90 days of the initial positive test result but is asymptomatic, they should closely monitor for COVID-19 symptoms for 7 days after the last exposure. If they develop symptoms listed in clinical illness they should follow isolation recommendations.

[O] Resolved cases refers to previously confirmed COVID-19 cases that have completed isolation recommendations.

ANNEX C: Revision History

- **NOTE:** Revision history from 2020-01-29 to 2021-11-09 available in the Public Health Disease Management Guidelines: Coronavirus – COVID-19 posted November, 2021.

Revision Date	Document Section	• Description of Revision
2022-02-23	Case Definition	• Updated confirmed and probable case definitions to include definitions included in CMOH Order 02-2022
	Reporting Requirements	• Removed reporting by physicians to MOH as this is currently not occurring due to increase number of cases • Clarified which case reports should be reported based on current capacity • Clarified which laboratory tests are reportable to AH and by whom
	Epidemiology	• Entire section updated to include relevant information on Omicron variant
	Section 2: Testing Recommendations	• Updated based on changes related to increase in rapid testing and PCR testing eligibility criteria • Table 2A: Symptoms List for COVID-19 Testing moved to Annex A: Isolation • Deleted Table 2C and 2D as information included in rest of guideline and in Annex B: Isolation • Deleted Table 2D: Testing And Management Of Resolved Cases
	Section 3: Case Investigation	• Updated close contact definition
	Section 4: Management of Case	• Added information to refer to Annex B: Isolation for more information on new isolation requirements
	Section 5: Management of Close Contact	• Updated to include recommendation that household contacts stay home for 10 days instead of 14 days
	Section 6: Management of HCW	• Updated with new mask recommendations i.e. well-fitted medical mask or KN95
	Annex A: Testing Performance	• Added information on the testing performance of at-home base rapid tests
	Annex B: Isolation	• Updated with new 5 day isolation requirement for fully immunized individuals and 10 day isolation for those not fully immunized • Included isolation requirements for residents in Congregate Care settings
	Annex C: Management of COVID-19 Outbreaks	• Updated to remove sections where PH is no longer investigating or reporting outbreaks
	Annex D: Management of Respiratory Illness Outbreaks	• Removed as Respiratory Illness Outbreaks are no longer being investigated or reported
	Annex E: Management of Travelers	• Updated to reflect current process of management of international travelers
	Annex F: Revision History	• Revision history from 2020-01-29 to 2021-11-09 removed and readers are to refer to the Guideline posted November 2021 to review that history.

2022-07-15	Entire Guideline	• Streamlined to mirror the Seasonal Influenza guideline. • Sections have been removed and/or updated to reflect changes in the lifting of all remaining mandatory public health restrictions.
	Case Definition	• List of symptoms included in clinical symptoms have been updated for both the confirmed and probable case definitions • Probable case definition to be used in outbreaks only
	Reporting requirements	• Physicians are to report any COVID-19 deaths • Reporting requirements updated to include reporting of hospitalized cases and COVID-19 deaths on an updated case report form • Reporting timelines also updated
	Epidemiology	• Clinical presentation, treatment and incubation period sections updated to reflect current evidence • Diagnosis section moved to after clinical presentation section • Treatment section moved to after diagnosis section • Added a new section on pre-exposure prophylaxis
	Public Health Management	• This section includes information to be used in outbreaks only including management of cases and contacts • Definition of HCW updated to be consistent with the definition used in the Congregate Care Outbreak Guide. • Added a new section on Management of COVID-19 and Respiratory Outbreaks
	Annex B:Recommendations for COVID-19 Cases in Specific Populations	• New section that includes information on recommendations for Immunocompromised and Resolved Cases

References

1. Heymann DL. Control of Communicable Diseases Manual. Washington, DC: American Public Health Association; 2015.

2. Government of Canada. 2019 Novel Coronavirus infection (Wuhan, China): For health professionals [Internet]. 2020. Available from: www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals.html

3. Centers for Disease Control and Prevention (CDC). Symptoms of Novel Coronavirus (2019-nCoV) [Internet]. 2020. Available from: www.cdc.gov/coronavirus/2019-ncov/about/symptoms.html

4. NCCEH. The Basics of SARS-CoV-2 Transmission | National Collaborating Centre for Environmental Health | NCCEH - CCSNE [Internet]. 2021 [cited 2021 Apr 7]. Available from: https://ncceh.ca/documents/evidence-review/basics-sars-cov-2-transmission

5. Public Health Ontario. COVID-19 Variants of Concern (VOCs) | Public Health Ontario [Internet]. [cited 2021 Mar 29]. Available from: https://www.publichealthontario.ca/en/diseases-and-conditions/infectious-diseases/respiratory-diseases/novel-coronavirus/variants

6. Government of Canada. COVID-19 signs, symptoms and severity of disease: A clinician guide - Canada.ca [Internet]. 2022 [cited 2022 Jul 4]. Available from: https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/signs-symptoms-severity.html#a3

7. ECDC. Clinical characteristics of COVID-19 [Internet]. 2022 [cited 2022 Jun 8]. Available from: https://www.ecdc.europa.eu/en/covid-19/latest-evidence/clinical

8. CDC. Clinical Presentation | Clinical Care Considerations | CDC [Internet]. 2022 [cited 2022 Jun 8]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/clinical-considerations-presentation.html

9. CPS. COVID-19 vaccine for children | Canadian Paediatric Society [Internet]. 2021 [cited 2021 Jun 11]. Available from: https://www.cps.ca/en/documents/position/covid-19-vaccine-for-children

10. WHO. Weekly epidemiological update on COVID-19 - 8 June 2022 [Internet]. 2022 [cited 2022 Jul 7]. Available from: https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---8-june-2022

11. Health Ontario P. COVID-19 Variant of Concern Omicron (B.1.1.529): Risk Assessment, January 6, 2022.

12. Laboratory Bulletins | Alberta Health Services [Internet]. [cited 2020 Apr 19]. Available from: https://www.albertahealthservices.ca/lab/Page3290.aspx

13. Government of Canada. COVID-19 treatments - Canada.ca [Internet]. 2022 [cited 2022 Jul 4]. Available from: https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/drugs-vaccines-treatments/treatments.html

14. COVID-19 daily epidemiology update - Canada.ca [Internet]. [cited 2021 Aug 17]. Available from: https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html#VOC

15. Hui DS, Azhar EI, Madani TA, Ntoumi F, Kock R, Dar O, et al. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health The latest 2019 novel coronavirus outbreak in Wuhan, China. 2020; Available from: doi.org/10.1016/j.ijid.2020.01.009

16. CDC. About Variants of the Virus that Causes COVID-19 | CDC [Internet]. 2021 [cited 2021 Apr 3]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant.html

17. CDC. Science Brief: SARS-CoV-2 and Surface (Fomite) Transmission for Indoor Community Environments | CDC [Internet]. 2021 [cited 2021 May 15]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/surface-transmission.html

18. Ending Isolation for Immunocompromised Persons | CDC [Internet]. [cited 2020 May 19]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/ending-isolation.html

19. World Health Organization. Enhancing Readiness for Omicron (B.1.1.529): Technical Brief and Priority Actions for Member States [Internet]. 2021 [cited 2021 Dec 21]. Available from:

https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-(b.1.1.529)-technical-brief-and-priority-actions-for-member-states

20. Brandal LT, MacDonald E, Veneti L, Ravlo T, Lange H, Naseer U, et al. Outbreak caused by the SARS-CoV-2 Omicron variant in Norway, November to December 2021. Eurosurveillance [Internet]. European Centre for Disease Prevention and Control (ECDC); 2021 Dec 16 [cited 2022 Jul 7];26(50):2101147. Available from: https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2021.26.50.2101147

21. Interim Clinical Considerations for COVID-19 Treatment in Outpatients | CDC [Internet]. 2022 [cited 2022 Jul 4]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/outpatient-treatment-overview.html

22. Lee JJ, Choe YJ, Jeong H, Kim M, Kim S, Yoo H, et al. Importation and Transmission of SARS-CoV-2 B.1.1.529 (Omicron) Variant of Concern in Korea, November 2021. J Korean Med Sci [Internet]. Korean Academy of Medical Science; 2021 Nov 19 [cited 2022 Jul 4];36(50). Available from: https://doi.org/10.3346/jkms.2021.36.e346

23. AHS COVID-19 Scientific Advisory Group. COVID-19 Scientific Advisory Group Rapid Evidence Report Topic: Is being immunosuppressed (in its various forms) associated with increased likelihood of recognized COVID-19 and/or increased disease severity? . 2020.

24. European Centre for Disease Control and Prevention. Q & A on the novel coronavirus [Internet]. 2020. Available from: www.ecdc.europa.eu/en/q-novel-coronavirus

25. Woelfel R, Corman VM, Guggemos W, Seilmaier M, Zange S, Mueller MA, et al. Clinical presentation and virological assessment of hospitalized cases of coronavirus disease 2019 in a travel-associated transmission cluster. medRxiv. Cold Spring Harbor Laboratory Press; 2020 Mar 8;2020.03.05.20030502.

26. KCDC. Findings from Investigation and Analysis of Re-positive Cases | [Internet]. 2020. [cited 2020 Jul 10]. Available from: https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030

27. Public Health Ontario. COVID-19 – What We Know So Far About…Viral Detection. 2020 May.

28. Ontario PH. COVID-19 : Ongoing Viral Detection and Repeat Positives. 2020;1–9.

29. BCCDC. COVID-19 : Can we safely reduce case isolation to 7 days post-symptom onset ? 2021;

30. Public Health Agency of C. Statement_Omicron_Isolation-quarantine_Jan14_FINALFORSAC. 2021.

31. ECDC. Weekly epidemiological update: Omicron variant of concern (VOC) – week 2 (data as of 13 January 2022) EU/EEA [Internet]. 2022 [cited 2022 Jan 16]. Available from: https://www.ecdc.europa.eu/en/news-events/weekly-epidemiological-update-omicron-variant-concern-voc-week-2-data-13-january-2022

32. CDC. Science Brief: COVID-19 Vaccines and Vaccination [Internet]. 2021 [cited 2021 Aug 9]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/fully-vaccinated-people.html

33. Canada PHA of. Omicron Monitoring Report Issue 4 January 5 2022 Final.

34. Ulrich A, Bartkus J, Moore KA, Hansen G, Mathieson MJ. COVID-19: The CIDRAP Viewpoint Part 3: Smart Testing for COVID-19 Virus and Antibodies [Internet]. 2020 [cited 2020 Jul 6]. Available from: www.cidrap.umn.edu.

35. Kanji JN, Zelyas N, MacDonald C, Pabbaraju K, Khan MN, Prasad A, et al. False negative rate of COVID-19 PCR testing: a discordant testing analysis. Virol J [Internet]. BioMed Central Ltd; 2021 Dec 1 [cited 2021 May 8];18(1):13. Available from: https://doi.org/10.1186/s12985-021-01489-0

36. National laboratory testing indication guidance for COVID-19 - Canada.ca [Internet]. [cited 2020 Jun 9]. Available from: https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/national-laboratory-testing-indication.html

37. Alberta Precision Laboratories (APL). Rapid COVID-19 Testing Pilot for PLC and FMC Inpatients [Internet]. 2020 May [cited 2020 Jun 16]. Available from: www.albertaprecisionlabs.ca

38. AHS. COVID-19 Scientific Advisory Group Rapid Evidence Report Do the rapid COVID-19 tests on the market represent a feasible opportunity for Alberta? 2020.

39. AHS-Scientific Advisory Group. COVID-19 Scientific Advisory Group Rapid Evidence Report Do the rapid COVID-19 tests on the market represent a feasible opportunity for Alberta? 2020;

40. Stokes W. Rapid Tests for SARS-CoV2: Abbott ID NOW COVID-19 (molecular test) and Abbott PanBio COVID-19

Antigen Rapid Test (antigen test). 2020.