

Interim Guidance: Public Health Management of COVID-19 in the Community

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SURVEILLANCE AND REPORTING

COVID-19 case definitions can be found on the BCCDC [Case Definitions](#) page.

EPIDEMIOLOGY

The British Columbia Centre for Disease Control (BCCDC) has combined surveillance reporting to include influenza, COVID-19 and other respiratory pathogens into one interactive data reporting platform. See the [BCCDC Respiratory Diseases page](#) for more information, including the [COVID-19 dashboard and weekly situation reports](#) that provide a more in-depth look at current respiratory disease epidemiology and trends in British Columbia.

The Pathogen

Coronaviruses have been identified as human pathogens since the 1960s. To date, seven coronaviruses have been shown to infect humans, including SARS-CoV-2 (1). Common coronaviruses include OC-43, HKU1, 229E, NL63; these cause illnesses ranging from common colds to severe respiratory illnesses. Other coronaviruses have emerged in recent years: SARS-CoV-1 (2002) and MERS-CoV (2012). In late 2019, a novel coronavirus, later named SARS-CoV-2, was identified as the causative agent of a cluster of pneumonia cases (COVID-19) in Wuhan, China.

There are a number of emerging variants of SARS-CoV-2 of public health importance being identified that may have implications related to transmission dynamics and vaccine effectiveness. Further information on variants of public health concerns can be found from these sources:

- BC Centre for Disease Control: <http://www.bccdc.ca/health-info/diseases-conditions/covid-19/about-covid-19/variants>
- Centers for Disease Control and Prevention: <https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant.html>
- PHAC: <https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html#VOC>

Clinical Illness

COVID-19 most commonly presents as a respiratory illness with cough and fever, but can present with a [variety of signs and symptoms](#). Symptoms absent at the onset of illness may develop over time with disease progression. Based on available data, neither the absence nor presence of signs or symptoms are accurate enough to rule disease in or out (2). People suspected of having COVID-19 may be recommended testing based on the [COVID-19: Viral](#)

[Testing Guidelines for British Columbia](#). People should seek medical consultation if experiencing severe symptoms.

The BCCDC [COVID-19 Symptoms](#) page provides a list of key symptoms that are more likely related to COVID-19.

The BCCDC [Priority Populations](#) page provides more information on risk factors for severe COVID-19 illness and death and other priority populations.

Many symptoms are present in other diseases. Clinical symptoms of COVID-19 may be mild or severe, with about 1 out of 6 infected people showing no symptoms (3-7). In Canada, children have been found to be asymptomatic in up to 36% of cases (8). For children, a cough and runny nose were the two most common symptoms; however, they were also common among those with negative test results and cannot be interpreted as predictive symptoms (8). The loss of smell and taste, nausea/vomiting, headache and fever were the most predictive symptoms in children.

IMMUNE RESPONSE TO SARS-CoV-2 INFECTION & VACCINATION

COVID-19 vaccines continue to be very effective at protecting against severe illness, hospitalization and death from SARS-CoV-2. Breakthrough infections (infections in vaccinated individuals) may occur, due to waning immunity and virus evolution. Following infection, more than 90% of individuals will develop IgM and IgG antibodies within weeks of symptom onset (9). Multiple immunological, epidemiological and/or modeling studies have reinforced that individuals who have hybrid immunity (a combination of vaccine and infection) have improved protection over that afforded by either immunization or natural infection alone. As of August 2022, most children and adults in British Columbia have been primed to SARS-CoV-2 by vaccines and/or infection, which has resulted in robust immunity in the BC population, especially against severe illness (10).

Incubation Period

The incubation period for SARS-CoV-2 may differ depending on the variant. Pre-Omicron, the incubation period ranged from 2-14 days, with a median of 5 to 7 days. The incubation period for Omicron has a shorter median of 3 days (range 0-8 days)(11-14).

Transmission

Human to Human Transmission

- Contact/droplets and aerosols (droplets vary in size from large droplets that fall to the ground rapidly [within seconds or minutes], to smaller droplets [i.e., aerosols] which linger in the air under some circumstances, such as within settings with poor ventilation) (15)
- Fomites (duration of virus survival on surfaces could be days)

The BCCDC [How it Spreads](#) page discusses how COVID-19 is spread for the general public.

Zoonotic Transmission

Naturally acquired SARS-CoV-2 has been detected in a range of domestic and wild animal species including, but not limited to, cats, deer, dogs, ferrets, gorillas, hamsters, and minks. Symptomatic and asymptomatic infections have been noted in animal species. Most animal infections are acquired from contact with human COVID-19 cases. Onward transmission to other animals has been noted in cats, white-tailed deer, gorillas, ferrets, hamsters and minks. Dogs are considered to have low susceptibility to SARS-CoV-2. Mink-to-human transmission has been confirmed in several countries including Canada with spillback into other humans. Suspected animal-to-human transmission has been reported in hamsters (Hong Kong) and white-tailed deer (Canada).

[Appendix 1](#) provides more details, including information on the management of companion animals when a pet owner has been diagnosed with COVID-19, or when animals are visiting or residing in a facility affected by COVID-19, as well as animal testing guidelines. It also provides some information about mink farms and SARS-CoV-2.

Period of Communicability

Cases are most infectious during the few days before and after symptom onset. Transmissibility declines rapidly 2-3 days after symptom onset, and is estimated to be less than 3% after seven days from symptom onset (16). Asymptomatic cases are estimated to be 25% less infectious than symptomatic cases (17).

Diagnostic Testing

Testing for COVID-19 is available for patients with compatible symptoms and meet the eligibility criteria for testing; see the [COVID-19: Viral Testing Guidelines for British Columbia](#) for more details on testing considerations.

Up to date laboratory testing guidelines for clinical purposes can be found on the [BCCDC Health Professionals page](#). These guidelines recommend testing where test results have an impact on client care: e.g., individuals who are eligible for treatment, pregnant women or hospitalized patients. These guidelines are not meant to direct public health practice related to testing. Medical Health Officers may recommend testing for individuals who are part of a public health investigation of a case, cluster or an outbreak, regardless of symptom profile.

Asymptomatic testing is not routinely recommended. A discussion with a Medical Health Officer (MHO) is warranted when considering asymptomatic testing.

Nucleic acid amplification tests (NAAT; e.g., polymerase chain reaction or PCR) remain the most sensitive diagnostic test for COVID-19. While rapid antigen tests are less sensitive than standard NAAT tests, they provide faster results, can allow for self-testing and an increased number of individuals to be tested. Whether an individual receives a NAAT or rapid antigen test will depend on individual patient circumstances, local epidemiology, and availability of laboratory-based testing. For more information about rapid antigen testing for COVID-19, refer to the BCCDC [Rapid Antigen Testing for COVID-19](#) webpage.

INFECTION PREVENTION AND CONTROL

COVID-19-specific Infection Prevention and Control guidance for acute health care settings can be found on the BCCDC [Infection Control](#) page.

PUBLIC HEALTH MANAGEMENT

During the first year of the pandemic in BC, spread of COVID-19 was effectively suppressed through strict public health measures (e.g. contact tracing, self-isolation, physical distancing etc.), with most residents of BC remaining uninfected and immunologically-naïve. By August 2022 in BC, as vaccine availability increased and following a series of waves of the Omicron variant, at least 60% overall have been infected, including at least 70-80% of children ≤ 19 years, 60-70% of adults 20-59 years and $\sim 40\%$ ≥ 60 years. This culminates in $>85\%$ of children and $>95\%$ of adults having been primed (by vaccine and/or infection) overall (10). This priming reduces the population health risk compared to an immunologically naïve population.



Case isolation also has a less favourable risk/benefit profile at this stage in the pandemic. SARS-CoV-2 is most transmissible during the few days before and after the onset of symptoms. It is estimated that 45-70% of the transmission potential occurs before symptom onset(18). Therefore, a significant proportion of transmission occurs before cases have an opportunity to isolate. Furthermore, seroprevalance studies in BC and in other regions show that only a fraction of all cases are tested, and fewer are reported; therefore, case isolation cannot be done on most cases, which reduces the public health impact of the intervention (10). Isolation also has significant consequences that impact people’s physical, mental, emotional, and spiritual health and wellness(19); these consequences must be weighed against the potential benefit of isolation. Evidence from earlier in the pandemic showed that men, younger age groups, key workers, lower socio-economic status, and/or the presence of a dependent child led to lower compliance with self-isolation guidelines(20). This may be because these individuals were the least able to isolate and imposition of restrictive measures can potentially increase inequities. Recommendations for isolation need to be proportional to the risk, equitable, and sustainable as we transition into an endemic state. In addition, they need to reflect epidemiological dominance of the Omicron variants, which cause relatively less severe disease than previous variants (11-14) in the context of a highly vaccinated and immune primed population.

Recommendations for Positive COVID-19 Tests in the Community

Epidemiologic evidence demonstrates that the majority of people with COVID-19 do not require care in a hospital (21). For cases in the community, the recommended measures are outlined in Table 1. These recommendations are intended for most community settings, and do not apply if setting-specific recommendations exist. For example, some health care settings may have specific requirements, which would supersede this community guidance.

Table 1. Case management recommendations

Symptomatic individuals with a positive or a negative test result	<p>Symptomatic individuals, regardless of a test result, should:</p> <ol style="list-style-type: none"> 1. Stay home and limit close contact with other people* until: <ol style="list-style-type: none"> a. They are afebrile, without the use of fever-reducing medications and b. They feel well enough to fully participate in their usual daily activities 2. Postpone non-essential close contact with <u>those who are at a higher risk of developing severe illness or complications from COVID-19</u> (e.g. >70 years old, long-term care residents, immunocompromised individuals, etc.) 3. Avoid non-essential visits to high-risk settings, such as long-term care homes or hospitals
Symptomatic individuals without a test result	
Asymptomatic individuals, regardless of test result	<p>Asymptomatic individuals do not need to stay home or limit contact with other people, regardless of any testing results or history of contact with another sick individual.</p>

* If it is essential for symptomatic individuals to be in close contact with others, preventative measures such as masking in indoor spaces, washing hands, and respiratory etiquette can reduce the risk of respiratory transmission.

Clinical Management

Guidance on the clinical management of people with COVID-19 can be found at:
<http://www.bccdc.ca/health-professionals/clinical-resources/covid-19-care/clinical-care>.

Contact Management

Individual management of close contacts is NOT required and testing is NOT indicated for close contacts.

MHO CONSIDERATIONS FOR DECLARING COVID-19 OUTBREAKS IN LONG-TERM CARE FACILITIES

An outbreak is described as an unexpected or unusual increase in COVID-19 cases or case severity amongst residents, characterized by transmission within the facility and necessitating additional public health action beyond usual surveillance, case management and baseline infection prevention and control measures (e.g., daily symptom screening, timely testing and isolation of those with symptoms).

Outbreak declarations have become more nuanced in light of the i) transitory epidemiological state of COVID-19 during each wave (particularly with the Omicron variant) and because ii) the clinical and public health significance of a case identified in long-term care has decreased over time due to substantial protection against severe outcomes through widespread vaccination. Thresholds previously used (e.g., one resident case) in declaring an outbreak are no longer the only consideration in light of these transitory epidemiological states, especially because long-term care facilities are not closed environments, i.e. facilities are likely to reflect community levels of transmission. In addition, unlike influenza outbreaks, which are managed using antiviral medications, there is currently no equivalent prophylactic therapeutic intervention for COVID-19 to administer upon the declaration of an outbreak. This means that approach to COVID-19 in long-term care facilities is more similar to the management of other respiratory pathogens other than influenza (e.g., vaccination, prompt identification and isolation of cases, and infection prevention and control measures).

For the purposes of this document, a case of COVID-19 in long-term care is considered to be a resident who exhibits symptoms compatible with COVID-19 illness and subsequently tests positive for the SARS-CoV-2 virus either by PCR or by a point-of-care test. Given the wide range of symptoms with COVID-19 from very mild to severe disease along with many having milder illness as a result of vaccination, this case definition will continue to be evaluated so that it balances identifying those with clinically significant illness while having a low threshold to identify cases and inform the application of infection control measures.

Currently, declaration of an outbreak generally implies a need for additional disease control measures beyond individual case management. Many infection control and prevention measures have been implemented at baseline and reduce the severity of COVID-19 amongst facility residents. Imposition of further measures requires an assessment of the potential benefits and potential harms of the additional measures. As the pandemic evolves with the ongoing arrival of new variants, there may be changes in transmission patterns, severity of illness, baseline measures, and vaccine effectiveness that will affect the decision for an outbreak declaration. To guide the need for an outbreak declaration, MHOs will consider the following factors within individual facilities:

- **Transmission pattern:** Rapid increase in cases amongst residents with no known contact with other identified cases
- **Resident susceptibility to severe outcomes:**
 - o Vaccination coverage among staff and residents
 - o Vaccine effectiveness against severe disease caused by known circulating variants
 - o Severity of illness greater than expected based on known circulating variants
- **Existing infection prevention and control measures and compliance:** Some facilities or situations may benefit from reinforcement of existing measures
- **Benefits and harms of additional measures:** If any additional measures are contemplated (see [Appendix 2](#) for examples), consider the expected marginal impact on public health outcomes (benefits and harms) in the context of expected duration and sustainability of such measures.

Current outbreak definition in long-term care:

A COVID-19 outbreak in long-term care is declared when the following criteria are met:

1. An unexpected increase in COVID-19 cases or case severity among residents which may involve a rapid increase in cases amongst residents with no known contact with other identified cases; which
2. Is not responding or expected to respond to usual infection prevention and control measures; and/or resident susceptibility to severe illness has been deemed to be particularly high; and
3. The application of additional control measures (i.e., those in [Appendix 2](#)) are considered to have a higher overall benefit than risk

An outbreak is declared over when:

1. Resident cases no longer continue at unexpected levels; and
2. Transmission in a long-term care facility appears to be responding to usual infection prevention and control measures

APPENDICES

Appendix 1: Evidence summary regarding zoonotic transmission and case management

Naturally acquired SARS-CoV-2 has been detected in a range of domestic and wild animal species including, but not limited to, cats, deer, dogs, ferrets, gorillas, hamsters, and minks. Symptomatic and asymptomatic infections have been noted in animal species. Most animal infections are acquired from contact with human COVID-19 cases. Onward transmission to other animals has been noted in cats, white-tailed deer, gorillas, ferrets, hamsters and minks. Mink-to-human transmission has been confirmed in several countries including Canada with spillback into other humans. Suspected animal-to-human transmission has been reported in hamsters (Hong Kong) and white-tailed deer (Canada).

Experimental studies have shown the following levels of susceptibility to SARS-Cov-2 in animals:

- High susceptibility: bats (Egyptian fruit bats), cats (domestics and big cats), deer mice, ferrets, hamsters, minks, non-human primates, raccoon dogs, deer, rabbits, and tree shrews
- Medium to high: bank voles, bushy-tailed woodrats, deer
- Medium: skunks
- Extremely low: cattle, swine
- None: Big brown bats, house mice, poultry (chickens, ducks, geese, quail, turkeys), prairie dogs, raccoons, and squirrels (fox and Wyoming ground).

Routine testing of animals for SARS-CoV-2 is not recommended at this time. However, if indicated, testing can be performed by veterinarians at regular clinics in accordance with the [veterinary guidance](#) and in consultation with the Chief Veterinarian's Office and the BC Centre for Disease Control.

Companion animals

Dogs are considered to have low susceptibility to SARS-CoV-2. Cats are susceptible to the virus and can develop clinical signs. Cat-to-cat transmission has been demonstrated. There has only been a single confirmed case of cat-to-human transmission.

When a pet owner has been diagnosed with COVID-19 the following measures are recommended to protect the pet and other animals:

- Limit contact with pets and all other animals during illness
- If possible, have another member of the household take care of the pets

- If an infected person must care for a pet, they should wash their hands before and after interacting with the pet, its food and supplies
- Avoid close contact with the pet, such as snuggling and letting them sleep on the bed
- Pet owners should restrict their animal's contact with other people and animals outside their home until their illness has resolved

In cats, too few natural infections have been reported to accurately assess the incubation period. The current recommendation for pet monitoring after a SARS-CoV-2 exposure is 14 days based on public health guidance for human cases.

In the case of an animal testing positive for SARS-CoV-2 in the household, the above measures apply with the addition of a ten-day isolation after onset of clinical symptoms. These recommendations are also based on the public health guidance for human cases.

Specific considerations need to be made for companion animals living in Assisted Living and LTC facilities with their owners. In case of an outbreak, pets and service animals should be restricted from entering the facility until the outbreak is declared over.

For pets that reside in the facility, the recommendations are as follows:

- Isolate the animals for the duration of the outbreak and in the location of the outbreak in the facility
- Do not let animals intermingle with other animals that reside in areas of the facility that are not included in the outbreak
- Practice hand hygiene after any animal handling or interaction (petting, feeding, etc.)
- If an animal becomes symptomatic, contact the veterinarian to discuss the need for treatment and/or testing.

If the facility opts to arrange for alternate housing of animals during outbreak, then animals should be put in isolation at new location for 14 days after last exposure event at the LTC facility.

Mink Farms

A significant number of outbreaks of SARS-CoV-2 in mink have been detected on mink farms worldwide. Several mutations have been detected, but only the Cluster 5 variant (a cluster of 4 cumulative mutations in the spike protein) raised significant concerns due to its effect on antigenicity. This mutation was found in 12 people in Denmark. However, it is considered no longer circulating since September 2020. Significant regional public health measures have been implemented in affected regions globally. In BC, nine mink farms were located in the Fraser Health Authority region. Intensive surveillance and control measures were put place to rapidly identify and prevent spread of SARS-CoV-2 related to mink farms. Between late 2020 and late

2021, transmission occurred in BC from human-to-mink, mink-to-mink, and mink-to-human with subsequent spillover to human cases. In November 2021, a new regulation in BC was passed that put limits on mink farming and effectively ends mink farming in BC by April 1, 2025. https://www.bclaws.gov.bc.ca/civix/document/id/oic/oic_cur/0639_2021

Appendix 2: Examples of additional outbreak control measures with associated harms and benefits

Measure	Anticipated benefits	Anticipated harms
Broad asymptomatic testing of staff and residents	Identification of asymptomatic positive cases leading to reduced transmission	<ul style="list-style-type: none"> • Isolation of staff/residents with limited capability to transmit • Prolonged isolation of residents • Exacerbation of staffing shortages • High frequency of testing needed to appreciably impact transmission
Isolation of all residents on an affected unit	Reduced opportunities for transmission from resident to resident	<ul style="list-style-type: none"> • Prolonged isolation of residents (who are neither cases nor symptomatic) • Increased resident isolation and decreased wellbeing (particularly for wandering residents)
Cessation of group activities and communal dining	Reduced opportunities for transmission from resident to resident or from staff to resident	<ul style="list-style-type: none"> • Increased resident isolation and decreased wellbeing • Disruption of resident life • Increased staffing needs (individual meal trays and resident supervision)
Stopping admissions and transfers	Reduced opportunity for new introduction of COVID-19 onto a unit Protecting newly admitted resident from acquiring COVID-19	<ul style="list-style-type: none"> • Impacts to acute care access and flow • Delays in repatriating patients back to home • Patients in hospital may still be susceptible to COVID-19 and other hospital acquired infections due to prolonged admission

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