

COVID-19

Case definition

Nova Scotia's COVID-19 case definitions and surveillance guidelines are found [here](#).

Causative agent

SARS-CoV-2, the virus that causes COVID-19 disease, is an enveloped, single-stranded RNA virus belonging to the Coronaviridae family. Mutations occur regularly and variant strains continue to be identified.

Source

SARS-COV-2 is believed to have zoonotic origins as genomic analyses have indicated the virus is related to SARS-like viruses found in bats. There has also been research looking at pangolins as a potential natural source; however, no animal reservoir has been confirmed. The earliest recognized cases of COVID-19 in Wuhan, China were in humans with links to a seafood market where live animals and animal products were sold. To date there is no definitive conclusion about the role the market played in the origin of the outbreak.

Incubation

The incubation period ranges from 2 to 14 days with a median of 4 to 7 days between exposure and symptom onset. Shorter median incubation periods have been reported for the Omicron variant and longer incubation periods have also been uncommonly reported.

Transmission

SARS-COV-2 virus is spread through the respiratory droplets (direct face-to-face) and aerosols of an infected person when breathing, sneezing, coughing, speaking, etc. The infected droplets and/or aerosols may be transmitted directly to another person by landing on the mucous membranes (e.g., mouth, nose, eyes) or through inhalation. The virus may also be spread indirectly via contaminated surfaces or objects (fomites) though evidence suggests a low risk of transmission.

Research and outbreak investigations have demonstrated that transmission is amplified in closed indoor settings where there is close proximity for 10-15 mins or longer, poor ventilation, and no preventative measures in place (e.g. physical distancing, face masks).

Research has shown the Omicron variant to be more transmissible, to have a higher attack rate and a higher basic reproduction number (R0) than other variants.

Communicability

The infectious period for COVID-19 is generally considered to start 48 prior to symptom onset. The exact period of communicability has not been determined, though past modelling studies have suggested approximately 8 to 10 days post symptom-onset and more recently, an estimated 3 to 6 days post symptom-onset for the Omicron variant.

Individuals infected with COVID-19 are considered most infectious around the time of symptom onset (just before, soon after).

Symptoms

There is a great variability in symptoms of COVID-19 depending on the circulating variant, age of the person infected, among other factors. Symptoms range from asymptomatic infection to severe disease and death.

Most reported symptoms include sore throat, rhinorrhea, headache, and sneezing. Other symptoms include new or worsening cough, difficulty breathing, fever (≥ 38 degrees), chills, myalgia, fatigue, anosmia, ageusia, diarrhea, and vomiting.

Symptoms are reportedly milder in children and increase in severity with age, with the greatest risk of severe illness and death in those 80 years or older.

Underlying medical conditions have been associated with more severe COVID-19 disease. These include but are not limited to cancers, kidney diseases, liver diseases, diabetes, heart diseases, lung diseases, immunodeficiency diseases, use of immunosuppressive medications, HIV infection, pregnancy, obesity, and smoking. Social vulnerabilities can also put individuals at higher risk of infection or severe outcome due to intersecting risk factors including persons with intellectual disabilities, addictions and mental health issues, persons experiencing homelessness, and residents of long-term care or other congregate living settings.

A novel pathological feature of the COVID-19 includes long-term sequelae, now referred to as post COVID-19 condition (or long COVID). Post COVID-19 condition is when individuals continue to experience physical or psychological symptoms 12 weeks after recovering from COVID-19. This condition is not yet well understood. To learn more about post COVID-19 condition see: [Post-COVID-19 condition \(long COVID\) - Canada.ca](#)

Diagnostic Testing

Diagnosis of COVID-19 is by nucleic acid detection using a nucleic acid amplification test (NAAT) (e.g. reverse transcription polymerase chain reaction (RT-PCR) test or transcription mediated amplification (TMA)). The NAAT can remain positive for several weeks after infection, detecting nucleic acid fragments from disintegrating virus. This can sometimes be confused for reinfection.

Nasopharyngeal (NP) swabs are preferred sample type. Other samples can include mouth rinse and gargle, throat/nares swab, endotracheal aspirates or bronchoalveolar lavage fluid.

Testing is currently available in acute care settings (including inpatients and emergency department patients) and long-term care facilities. Self-referred COVID-19 RT-PCR testing in the community can still be accessed in select locations.

Point of Care Testing

Point of care testing (POCT) can be completed with either rapid antigen detection tests (RADTs) or molecular based methods.

Rapid antigen detection tests (RADT) can be used outside the clinical laboratory providing a result in 15 minutes. While the specificity of these test is high, they are less sensitive than traditional laboratory- based PCR. In symptomatic individuals who test negative, the RADT should be repeated in 48 hours to identify those with early COVID infection.

Molecular point of care tests are more sensitive than RADTs with data suggesting sensitivity approaching that of laboratory-based PCR tests. However, there are currently no settings where these tests have been implemented.

For more detailed information regarding on SARS-CoV-2 subtyping and surveillance see Nova Scotia's [Respiratory Response Plan Appendix D: Laboratory Procedures](#). For up-to-date information on community based testing see:

- [Coronavirus \(COVID-19\): symptoms, testing and self-isolating](#)
- [Nova Scotia Health \(NSH\): COVID-19 Testing](#)

Treatment

Most individuals with non-severe COVID-19 do not require treatment beyond supportive measures. COVID-19 vaccination provides protection against severe illness and hospitalization.

For individuals with early, symptomatic, non-severe COVID-19 who are at high risk for progression to severe COVID-19, antiviral medication may be warranted.

- For more detailed information, refer to [Nova Scotia Health COVID-19 Non-Severe Therapy Pharmacist Consult Services](#).
- For further information regarding the treatment of individuals with non-severe COVID-19 living in a long-term care facility see: [Guide to Prevention of Respiratory Virus Infection and Outbreak Management for Long-Term Care Facilities](#)

PUBLIC HEALTH MANAGEMENT & CONTROL

Long term care facilities:

- For cases and contacts in long term care facilities please refer to the [Guide to Prevention of Respiratory Virus Infection and Outbreak Management for Long-Term Care Facilities](#).

Acute care settings:

- Case and contact management within acute care settings for admitted inpatients is overseen internally by Nova Scotia Health (NSH) Infection Prevention and Control (IPAC) and employee case and contact management is directed by NSH Occupational Health Safety and Wellness (OHSW)
- Public Health follow up is limited to reporting outcomes of laboratory confirmed cases for those admitted to acute care settings weekly until discharge or death for a maximum of 4 weeks. Outcomes should be entered into Panorama. Refer to DHW Surveillance Guidelines for further information.
- Organizational IPAC and OHSW policies should be followed for case and contact **exclusions**.

Community:

- Public Health identification and follow-up of cases and contacts in community settings is **not required**.
- If contacted by a community member or setting, Public Health may provide education about COVID-19 and prevention measures, including immunization. Information sheets and resources for general respiratory illness are available on the [Nova Scotia Government Coronavirus \(COVID-19\) website](#). For congregate living settings, refer and provide link to the [Nova Scotia Guidance for Respiratory Viruses in Congregate Living Settings](#).

- Public Health may provide additional support and/or outbreak management advice, as indicated. Consult with MOH when needed to determine further public health follow-up in the event of an outbreak (e.g., community-based control strategies such as closure of schools/gatherings). Refer to the [Outbreak Response Plan](#).
- **No exclusions** are required. Individuals are encouraged to stay home when experiencing symptoms indicative of COVID-19 or other respiratory pathogens and follow any applicable organizational occupational health policies and procedures.

Immunization

COVID-19 vaccines continue to be very effective at protecting against severe illness, hospitalization, and death from SARS-CoV-2. In Nova Scotia, it is recommended that individuals receive the most recent formulation of COVID-19 vaccine. This is particularly important for people at increased risk of infection or severe disease.

For further details regarding Nova Scotia's COVID-19 immunization program see: [Nova Scotia COVID-19 Vaccine Program Information for Health Care Professionals](#).

For all other Nova Scotia COVID-19 immunization resources see: [Nova Scotia COVID-19 Immunization Program](#)

REFERENCES

D. L. Heymann (2021). COVID-19. Control of Communicable Diseases Manual. DOI: 10.2105/CCDM.2745.160

National Institute of Infectious Diseases Disease Control and Prevention Centre, National Center for Global Health and Medicine (2022). Active epidemiological investigation on SARS-CoV-2 infection caused by Omicron variant (Pango lineage B.1.1.529) in Japan: Preliminary report on infectious period. Available from: <https://www.niid.go.jp/niid/en/2019-ncov-e/10884-covid19-66-en.html>

Public health Agency of Canada (2022). COVID-19 signs, symptoms and severity of disease: A clinician guide. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/signs-symptoms-severity.html>