



Coronavirus disease 2019 (COVID-19): What Do Respiratory Therapists Need to Know?

This information sheet should not replace local policies and procedures, clinical guidelines or the clinical judgement of the health care provider. It summarizes some key information relating to the coronavirus disease 2019. Please refer to the referenced documents for additional details.

This document uses the updated name for this virus, as per the February 11, 2020 renaming by the World Health Organization. Where external documents continue to use “novel coronavirus”, “2019-nCoV” or “nCoV”, this has not been altered.

What are coronaviruses?^{1, 12}

Coronaviruses are common viruses globally, and seven types have been identified as those that can cause diseases in humans. Typically, coronaviruses cause mild to moderate illness. Three types have been known to cause severe respiratory illness: Severe Acute Respiratory Syndrome (SARS-CoV, SARS), Middle East Respiratory Syndrome (MERS-CoV, MERS) and the 2019 coronavirus disease 2019 (COVID-19). Coronaviruses are transmitted via respiratory droplets, close personal contact and contact with contaminated surfaces.

What is the coronavirus disease 2019 (COVID-19)?²

This is a newly discovered strain of coronavirus. This coronavirus disease 2019 was discovered in December 2019 in association with a pneumonia outbreak in Wuhan City, China. It is believed that transmission may occur via respiratory droplets as it does with SARS and MERS, however further data is required to confirm the means of transmission. Originally thought to have spread solely from animal to human, person-to-person transmission has occurred.

When should I suspect someone may be infected with COVID-19?

There is limited data on the range of clinical illness associated with COVID-19 infection, however the World Health Organization (WHO) and Public Health Agency of Canada note that persons infected with COVID-19 may present with mild to severe pneumonia, ARDS, sepsis and septic shock³. Most people present with a fever and a dry cough^{12, 17}. Malaise, shortness of breath and respiratory distress are also symptoms. The US Centers for Disease Control (CDC) notes that fever may be subjective or confirmed⁴.

A detailed travel history should be taken in people presenting with symptoms of COVID-19 infection. Evidence indicates that symptoms may appear for up to 14 days after exposure to the virus¹⁶.

Case definitions have changed throughout the global response to the COVID-10 outbreak. For current case definitions are available via the World Health Organization⁵



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([https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-\(2019-ncov\)](https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-(2019-ncov))), Health Canada¹⁰ (<https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/national-case-definition.html>) and provincial governments. (Visit <https://www.csrt.com/csrt-novel-coronavirus-resources/> for links to provincial sites.)

What infection prevention and control precautions should be taken?^{6, 12}

The CSRT recommends involving your local infection prevention and control resources and Public Health when managing a patient with suspected or confirmed nCoV. Your institution should have processes in place to ensure these important steps are taken.

Early recognition and isolation of suspected cases of COVID-19 is encouraged by the WHO. Patients/suspected patients should wear surgical masks and be placed in private rooms with the door closed. Strict Hand and Respiratory hygiene measures (cover cough/sneeze with bent elbow or tissue, hand washing after contact with respiratory secretions) should be employed.

People with suspected or confirmed infection should be cared for in private, ventilated rooms. Cohorting with other people with COVID-19 may be employed when private rooms are not available.

Health care workers (as well as family and visitors, and those transporting the patient) should employ standard precautions, contact precautions and droplet precautions and use eye protection.

The WHO notes that aerosol-generating procedures may have increased the transmission of MERS and SARS. Such procedures include CPR, intubation, manual ventilation prior to intubation, non-invasive ventilation, tracheostomy and bronchoscopy. Health care workers performing these procedures should use the following PPE: N95 mask (or particulate respirators offering higher protection); eye protection; gloves and clean (non-sterile) long-sleeved, fluid-resistant gowns.

The WHO presents detailed infection prevention and control information in its publication *Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected* ([https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)). Other infection prevention and control publications are available in the CSRT Coronavirus resources page (<https://www.csrt.com/csrt-novel-coronavirus-resources/>).

The WHO has also developed a self-paced online course for health care professionals relating to infection prevention and control: <https://openwho.org/courses/COVID-19-IPC-EN>.¹⁴ Other courses relating to the pandemic are listed on the CSRT Coronavirus resources page. (<https://www.csrt.com/csrt-novel-coronavirus-resources/>).



How is COVID-19 infection confirmed⁷?

Lab testing is required to confirm a diagnosis. The Public Health Agency of Canada notes that specimens may be collected from the upper respiratory tract, the lower respiratory tract and serum for testing. The CSRT recommends referring to your local infectious disease testing procedures, and to the Government of Canada document *Protocol for Microbiological Investigations of Severe Acute Respiratory Infections*¹³ (<https://www.canada.ca/en/public-health/services/emerging-respiratory-pathogens/protocol-microbiological-investigations-severe-acute-respiratory-infections-sari.html>) for information and details on specimen collection and handling.

Many provincial public health representatives are recommending against testing for patients who are not symptomatic.

“Presumptive confirmed cases” refer to those where laboratory screening was positive when tested locally. “Confirmed cases” refer to those where laboratory testing has been confirmed by the National Microbiology Laboratory.¹¹ British Columbia and Ontario are also able to perform confirmatory laboratory diagnostics.¹⁵

What are the treatment options^{8, 12}?

There is not currently a vaccine for COVID-19, nor is there a specific treatment. Treatment is supportive. The WHO provides detailed guidance for the treatment of severe acute respiratory infection when COVID-19 is suspected in its publication *Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected* ([https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected)). This guide includes (but is not limited to) the following:

- Prompt oxygen therapy for patients with severe acute respiratory illness (SARI) and respiratory distress, hypoxemia, or shock
- Conservative use of fluid management in the absence of shock
- Vigilant monitoring for signs of deteriorating cardiorespiratory status, including severe hypoxemic respiratory failure
 - If intubation is required, it should be performed under airborne precautions by a trained and experienced provider.

The WHO guidelines include further guidance for the management of septic shock and ARDS due to COVID-19. Respiratory therapists are strongly encouraged to download WHO document for details and rationales of each treatment, and for the complete list of suggested therapies and precautions.



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People with mild symptoms may be cared for at home in some circumstances⁹. These are detailed in the WHO's publication *Homecare for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts*.

([https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-\(ncov\)-infection-presenting-with-mild-symptoms-and-management-of-contacts](https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts)).

A list of clinical management resources is available on the CSRT Coronavirus resources page: <https://www.csrt.com/csrt-novel-coronavirus-resources/>.

Where can I go for more information?

The World Health Organization, Centers for Disease Control and Health Canada are all monitoring the COVID-19 outbreak and are frequently updating their sites:

- Health Canada: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html>
- Centers for Disease Control: <https://www.cdc.gov/coronavirus/index.html>
- World Health Organization: <https://www.who.int/health-topics/coronavirus>

The CSRT has developed a list of resources to provide respiratory therapists with information relating to COVID-19. This can be viewed on the CSRT website and includes information from provincial health agencies.



References:

1. Centers for Disease Control (Jan. 22, 2020): Coronavirus. <https://www.cdc.gov/coronavirus/index.html>
2. Centers for Disease Control (Jan. 22, 2020): 2019 Novel Coronavirus (2019-nCoV), Wuhan, China. <https://www.cdc.gov/coronavirus/2019-nCoV/summary.html>
3. World Health Organization (Feb. 12, 2020): Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. [https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected)
4. Centers for Disease Control (Jan. 17, 2020): Interim Guidance for Healthcare Professionals. <https://www.cdc.gov/coronavirus/2019-nCoV/clinical-criteria.html>
5. World Health Organization (Jan. 21, 2020): Global Surveillance for human infection with novel coronavirus (2019-nCoV): Interim guidance. [https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-\(2019-ncov\)](https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-(2019-ncov)).
6. World Health Organization (Jan. 13, 2020): Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. [https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)
7. Public Health Agency of Canada (Mar. 16, 2020). Protocol for Microbiological Investigations of Severe Acute Respiratory Infections (SARI) <https://www.canada.ca/en/public-health/services/emerging-respiratory-pathogens/protocol-microbiological-investigations-severe-acute-respiratory-infections-sari.html>
8. World Health Organization (Jan. 12, 2020): Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. [https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected)
9. World Health Organization (Jan. 20, 2020): Homecare for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts. [https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-\(ncov\)-infection-presenting-with-mild-symptoms-and-management-of-contacts](https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts)
10. Government of Canada (Feb. 12, 2020): Interim national case definition: Novel coronavirus (nCoV-2019). <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/national-case-definition.html>
11. Ontario Ministry of Health, Ministry of Long-Term Care (Jan. 27, 2020): Guidance for Health Care Workers and Health Sector Employers on novel coronavirus associated with Wuhan, China (2019-nCoV). http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/2019_guidance.aspx
12. Government of Canada (Feb. 12, 2020): 2019 Novel coronavirus: For health professionals. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals.html#s>
13. Government of Canada (Feb. 12, 2020): Protocol for microbiological investigations of severe acute respiratory infections (SARI). <https://www.canada.ca/en/public-health/services/emerging-respiratory-pathogens/protocol-microbiological-investigations-severe-acute-respiratory-infections-sari.html>
14. World Health Organization (2020): Infection Prevention and Control (IPC) for Novel Coronavirus (COVID-19) [online, self-paced course]. <https://openwho.org/courses/COVID-19-IPC-EN>
15. Government of Canada (Mar. 4, 2020): Coronavirus disease (COVID-19): Outbreak update. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html>
16. Government of Canada (Mar. 4, 2020): Coronavirus disease (COVID-19): Frequently asked questions (FAQs). <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/frequently-asked-questions.html>
17. Government of Canada (Mar. 16, 2020): Coronavirus disease (COVID-19): Symptoms and treatment. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/symptoms.html>