



## **Novel Coronavirus (nCoV): 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 novel coronavirus. Please refer to the referenced documents for additional details.**

### **What are coronaviruses?<sup>1</sup>**

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 Novel Coronavirus (2019-nCoV, nCoV). Coronaviruses are transmitted via aerosolized respiratory secretions, close personal contact and contact with contaminated surfaces.

### **What is the novel coronavirus (nCoV)?<sup>2</sup>**

This is a newly discovered strain of coronavirus. This novel coronavirus 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 nCoV?**

There is limited data on the range of clinical illness associated with nCoV infection, however the World Health Organization (WHO) reports mild to severe pneumonia, ARDS, sepsis and septic shock<sup>3</sup>. Most people present with a fever (>90%) and a dry cough (80%). Malaise, shortness of breath and respiratory distress are also symptoms. The US Centers for Disease Control (CDC) cautions that people taking fever-reducing medications, those with immunocompromise, the very young and the elderly may not present with fever. Clinical judgement should be used when considering testing patients in these situations<sup>4</sup>.

A detailed travel history should be taken in people presenting with symptoms of nCoV infection.



The WHO recommends you suspect nCoV in the following cases<sup>5</sup>:

Symptoms of respiratory illness requiring hospitalization not attributable to other causes  
AND at least one of the following:

- history of travel from Wuhan City within 14 days of symptoms
- patient is a health care professional who has been working in an area where patients with severe acute respiratory infections of unknown etiology are being treated

OR

Patients with any acute respiratory illness AND one or more of the following:

- close contact with a confirmed or probable case of nCoV in the 14 days prior to illness onset, or
- visiting or working in a live animal market in Wuhan City, China in the 14 days prior to symptoms, or
- worked/attended a health care facility within 14 days prior to symptoms where patients with hospital-associated nCoV infections have been reported

Subsequent to the first confirmed cases of nCoV in Ontario, the Ontario Ministry of Health and Ministry of Long-Term Care broadened the above from travel to Wuhan City to travel to the larger geographic area of Hubei province, China.<sup>10</sup>

#### **What infection prevention and control precautions should be taken?<sup>6</sup>**

*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 nCoV is encouraged by the WHO. The US Centers for Disease Controls (CDC) recommends patients/suspected patients wear surgical masks and be placed in private rooms with the door closed. 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 nCoV 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)).

### **How is nCoV infection confirmed<sup>7</sup>?**

Lab testing is required to confirm a diagnosis. The CDC recommends specimens be collected from the upper respiratory tract, the lower respiratory tract and serum for testing, as testing from all three sites increases the likelihood of detection. The CSRT recommends referring to your local infectious disease testing procedures.

“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. <sup>10</sup>

### **What are the treatment options<sup>8</sup>?**

There is not currently a vaccine for nCoV, nor is there a specific treatment. Treatment is supportive. The WHO provides detailed guidance for the treatment of severe acute respiratory infection when nCoV 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 nCoV. Respiratory therapists are strongly encouraged to download WHO document for



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details and rationales of each treatment, and for the complete list of suggested therapies and precautions.

People with mild symptoms may be cared for at home in some circumstances<sup>9</sup>. 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)).

### **Where can I go for more information?**

The World Health Organization, Centers for Disease Control and Health Canada are all monitoring the nCoV 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 nCoV. This can be viewed on the CSRT website and includes information from provincial health agencies.



References:

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3. World Health Organization (Jan. 11, 2020): Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. [https://www.who.int/internal-publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/internal-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. Centers for Disease Control (Jan. 17, 2020). Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Patients Under Investigation (PUIs) for 2019 Novel Coronavirus (2019-nCoV) <https://www.cdc.gov/coronavirus/2019-nCoV/guidelines-clinical-specimens.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. 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](http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/2019_guidance.aspx)