

AT A GLANCE

Key features of Influenza, SARS-CoV-2 and Other Common Respiratory Viruses

2nd Edition: January 2024

Introduction

This document provides a high-level overview of the key features of the following common respiratory viruses that may circulate in Ontario over the course of the respiratory virus season (fall to early spring):

- influenza
- SARS-CoV-2 (the virus that causes COVID-19)
- respiratory syncytial virus (RSV)
- rhinovirus

Signs and symptoms of illness caused by these respiratory viruses can be very similar and therefore illnesses caused by these viruses cannot be distinguished without laboratory testing. These four viruses, along with other viruses, can cause outbreaks in facilities (e.g. long-term care homes, retirement homes and congregate living settings) during the respiratory virus season. In some outbreaks, more than one virus may be identified, while in other outbreaks a causative virus may not be identified despite testing.

Information presented in this document reflects current available evidence related to respiratory viruses, including clarifying the language describing modes of transmission.

Methods

This report is a focused synthesis drawing on a limited selection of published guidance and literature. The websites of key public health agencies were scanned and links from the previous version of this document were updated. A literature search was conducted on the clinical characteristics of the Omicron variant using Ovid, Ovid MEDLINE and Embase. The search consisted of both relevant subject headings and keywords.

Table 1: Comparison of Key Features of Influenza, SARS-CoV-2, Respiratory Syncytial Virus (RSV) and Rhinovirus

Key Features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
<p>Most common signs and symptoms</p> <p>Note: Signs and symptoms of illness caused by these respiratory viruses can be very similar and therefore illnesses caused by these viruses cannot be distinguished without laboratory testing.</p>	<p>Sudden onset of fever, cough, chills, headache, fatigue, sore throat, runny or stuffy nose, muscle pain or body aches.^{1,2}</p> <p>Young children may experience nausea, vomiting and diarrhea in addition to respiratory symptoms.³</p> <p>Elderly and those who are immunosuppressed may not develop a fever.³</p>	<p>Fever, chills, sore or itchy throat, cough, headache, fatigue, muscle aches, runny nose.^{4,5,6,7}</p> <p>Other possible symptoms include new loss of taste and smell and gastrointestinal symptoms (nausea, vomiting, diarrhea).⁷</p>	<p>Young infants, particularly preterm infants, may present with lethargy, irritability, poor eating and/or apnea.^{1,9}</p> <p>Infants and young children most commonly experience upper respiratory tract symptoms,^{1,2,8} which may start with a runny nose^{1,8} and decreased appetite, followed by cough, fever and wheezing.⁸</p> <p>Adults usually have mild or no symptoms.⁸ Symptoms can include runny nose, sore throat, cough, headache, fatigue and fever.⁸ Some individuals, including older and/or frail adults and those with certain chronic conditions, may have more severe symptoms, such as pneumonia.⁸</p>	<p>Runny nose, sneezing, cough, sore throat, muscle pain, fatigue, no fever or mild fever.¹</p>

Key Features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
More severe manifestation/ complications	Pneumonia, worsening of underlying medical conditions, sepsis, cardiac involvement, neurologic involvement, death ^{1,2}	Similar to influenza with the addition of blood clots in lungs, heart, legs or brain ⁹ and multisystem inflammatory syndrome in children (MIS-C) ^{7,9} , or adults (MIS-A) and post COVID-19 condition (long COVID). ^{9,10}	Pneumonia, bronchiolitis, death ¹ Exacerbation of underlying conditions including asthma, chronic obstructive pulmonary disease, and congestive heart failure ⁸	Lower respiratory tract infection (pneumonia, bronchiolitis) in infants. ¹
Those at greater risk for complications	Children less than 2 years of age; older adults; underlying medical conditions, including immunocompromised; obesity; pregnancy ²	Older adults; underlying medical conditions, including immunocompromised; obesity, pregnancy ⁹	Children less than 2 years of age; premature infants; older adults; underlying medical conditions, including immunocompromised ^{1,2}	Young children; immunocompromised; respiratory conditions ¹
Strains	There are different strains of influenza A and influenza B. Small changes occur in the circulating influenza viruses each year. ¹	Mutations occur regularly. Variants^ may be classified as variant under monitoring (VUM), variant of interest (VOI), and variant of concern (VOC). ^{11,12}	Subgroups and genotypes ¹	Many serotypes ^{1,2}
Incubation period Time period from exposure to onset of symptoms	Ranges from 1 to 4 days ²	Ranges from 1 to 14 days, median 2 – 4 days for Omicron (median 4 – 7 days pre-Omicron) ⁷	Ranges from 2 to 8 days ¹	Ranges from 2 to 4 days ¹

Key Features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
Communicable Period^^ Time period when an infected person can be spread to others	From 1 day before until about 5 days after symptom onset (peaks 24 – 48 hours after symptom onset). ¹³	Can range from 2 – 3 days ⁹ before symptom onset to upwards of 14 days post-symptom onset. Most commonly 2 days before symptom onset to 3 – 5 days post-symptom onset. ¹⁴	Usual period of viral shedding is 3 to 8 days and can be up to 4 weeks in infants and those who are immunocompromised. ¹	Peaks 2 – 3 days after symptom onset and usually ceases by 7 to 10. ¹
How is the virus spread?	Primarily at short range via respiratory particles (through inhalation or contact with mucous membranes). ¹⁵ Transmission can also occur over longer distances by respiratory particles under certain conditions and by indirect transmission through fomites. ¹⁵	Primarily at short range via respiratory particles (through inhalation or contact with mucous membranes). ¹⁵ Transmission can also occur over longer distances by respiratory particles under certain conditions and by indirect transmission through fomites. ¹⁵	Primarily at short range via respiratory particles (through inhalation or contact with mucous membranes). ¹⁵ Transmission can also occur by indirect transmission through fomites. ¹⁵	Primarily at short range via respiratory particles (through inhalation or contact with mucous membranes). ¹⁵ Transmission can also occur by indirect transmission through fomites. ¹⁵
Spread before symptoms start	Yes, can spread from 24 hours before symptoms onset ^{9,16}	Yes, evidence to suggest up to 3 days before symptom onset ⁹	Uncertain, has not been well studied	Uncertain, has not been well studied
Spread while having no symptoms	Evidence of asymptomatic spread ¹⁶	Evidence of asymptomatic spread ¹⁷	Uncertain, has not been well studied	Uncertain, has not been well studied

Key Features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
<p>Type of Additional Precautions</p> <p>The type of Additional Precautions is informed by presenting signs and symptoms and, along with a point-of-care risk assessment, informs the personal protective equipment to be used.</p>	Droplet and Contact ^{18*}	Droplet and Contact ^{19*}	Droplet and Contact ^{18*}	Droplet and Contact ^{18*}
<p>Number of cases, hospitalizations, deaths</p>	Please see the Ontario Respiratory Virus Tool for information on number of cases, hospitalizations and deaths.	Please see the Ontario Respiratory Virus Tool for information on number of cases, hospitalizations and deaths.	Please see the Ontario Respiratory Virus Tool for information on number of cases, hospitalizations and deaths.	Please see the Ontario Respiratory Virus Tool for information on number of cases, hospitalizations and deaths.
<p>Vaccine</p>	Seasonal influenza vaccine available annually ¹³	Multiple COVID-19 vaccines are approved by Health Canada**	One RSV vaccine has been approved by Health Canada. ²⁰	No vaccine
<p>Prophylaxis</p>	Antiviral medication may be considered for prophylaxis in outbreaks in closed settings, especially if residents are at high risk of complications. ²¹	None	Palivizumab and nirsevimab are monoclonal antibodies that are authorized for prevention in select infant groups. ²²	None

Key Features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
Treatment	Influenza antiviral treatment may be considered in select individuals. ^{13,21,23}	Multiple COVID-19 treatments authorized by Health Canada***	No specific treatment. ²⁴	No specific treatment. ²⁵

^Current designated Variants of Concern can be found on the [World Health Organization's Tracking SARS-CoV-2 variants](#) webpage.

^^Children and people who are immunocompromised may be infectious longer^{13,27}

*Use of N95 respirator based on point-of-care risk assessment.²⁸

**More information on COVID-19 vaccine and booster recommendations can be found on the [Government of Canada Vaccines for COVID-19](#) webpage.

***More information on COVID-19 authorized treatment can be found on the [Government of Canada COVID-19 Treatments](#) webpage.

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