

AT A GLANCE

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

Introduction

This document provides a high-level overview of the key features of the following common respiratory viruses that may circulate 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 cannot be distinguished without laboratory testing. These four viruses, along with other viruses, can cause outbreaks in facilities 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.

Due to the evolving nature of the COVID-19 situation, information presented in this document related to SARS-CoV-2 reflects what is known at the time of publication.

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
Most common symptoms	Sudden onset of fever, cough, chills, headache, fatigue, sore throat, runny or stuffy nose, muscle pain or body aches ^{1,2}	Similar to influenza including shortness of breath with the possibility of other symptoms, including new loss of taste and smell and gastrointestinal symptoms (nausea, vomiting, diarrhea) ^{3,4}	Similar to influenza ^{1,2}	Runny nose, sneezing, cough, sore throat, muscle pain, fatigue, no or mild fever ^{1,2}
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 ⁵ and multisystem inflammatory syndrome in children (MIS-C) ^{3,5} , multisystem inflammatory syndrome in adults (MIS-A) ³ , Long-COVID ⁶ and death ^{5,7}	Pneumonia, bronchiolitis, death ¹	Lower respiratory tract infection (pneumonia, bronchiolitis) in infants ¹ , bronchitis ²
Risk groups for complications	Young children; older adults; underlying medical conditions, including immunocompromised; obesity; pregnancy ^{2,7}	Older adults ^{3,7} ; underlying medical conditions, including immunocompromised ^{3,7} ; obesity ³	Infants and children less than 2 years of age with congenital heart disease or chronic lung disease; premature infants; older adults; underlying medical conditions, including immunocompromised ^{1,2}	Young children; immunocompromised; respiratory conditions ¹

Key features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
Strains	Frequent mutations; different types, subtypes, strains ¹	Mutations occur regularly; variant strains have been identified ^{8^}	Subgroups and genotypes ¹	Many serotypes ^{1,2}
Incubation period Time period from exposure to onset of symptoms	1 to 4 days ⁹	1 to 14 days; median: 5 to 6 days ³ Emergent evidence suggests shorter incubation periods for COVID-19 variants of concern. ⁸	3 to 7 days ⁹	2 to 4 days ⁹
Communicable Period Time period when can be spread to others	1 day before and until about 5-10 days after onset of symptoms (peaks 24-48 hours after symptom onset) ^{1,9}	2-3 days prior to symptoms to about 10 days after symptom onset for immunocompetent people. ³ May be prolonged in people with compromised immune system. ¹⁰	Usually until 3 to 8 days after symptom onset, but can sometimes be up to 4 weeks in infants and those who are immunocompromised ¹	1 to 3 weeks (peaks 2-3 days after symptom onset) ⁹
How is the virus spread?	Direct person-to-person transmission and fomites, and possibly small aerosols under certain conditions ¹	Primarily at short range through unprotected close contact and exposure to large and small respiratory particles and possible but less common transmission over longer distance under favourable conditions ¹¹ Fomite transmission is possible but current evidence	Direct person-to-person transmission and fomites ¹	Direct person-to-person transmission and fomites ¹

Key features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
		suggests this is an uncommon route of transmission. ¹²		
Spread before symptoms start	Yes, can spread from 24 hours before symptoms starts, ^{5,13}	Yes, evidence to suggest 2-3 days before symptom onset ³	Uncertain, has not been well studied	Uncertain, has not been well studied
Spread while having no symptoms	Infected people can have no symptoms and may spread the virus to others ¹³	Possible to spread while asymptomatic ¹⁴	Uncertain, has not been well studied	Uncertain, has not been well studied
Type of precaution The type of precautions inform the personal protective equipment to be used	Droplet and contact ¹⁵	Droplet and contact; Airborne when performing aerosol-generating medical procedures ¹⁶	Droplet and contact ¹⁵	Droplet and contact ¹⁵
How infectious is the virus? The higher the basic reproductive number (R0) the larger the number of people infected by each case on average	R ₀ : 1.27 ^{*17}	R ₀ : 2.7-3.3 ^{*18} Evidence to suggest some SARS-CoV-2 Variants of Concern have increased reproduction numbers compared to wild-type. ¹⁹	R ₀ :3.0 ^{*20}	Not available
Case fatality Number of deaths divided by number of	<0.1% ⁷	Variable ~ 2.16% ²¹ world wide; 1.8% ²² in Canada.	Not available	Extremely unlikely to result in death ²

Key features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
identified cases, expressed as a percentage				
Vaccine	Seasonal vaccine available and recommended annually ²³	Four Health Canada approved vaccines are currently available for use in Canada. ^{24,25,26}	Currently in development; Palivizumab, a humanized monoclonal immunoglobulin, available for prevention in some high risk infants ¹	No vaccine
Antiviral medications	Used for treatment in those with moderate or severe illness or at risk for complications of influenza ²⁷ Recommended for both treatment and prevention in outbreaks in closed settings, especially if residents are at high risk of complications ²⁷	Approved treatments (dexamethasone ²⁸ , remdesivir ^{29,30} , Bamlanivimab ³⁰ , Casirivimab ³⁰ and imdevimab ³⁰) are available for hospitalized patients with particular indications; Trials for therapies are ongoing	None routinely recommended	None

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

* R₀: Basic reproductive numbers - Average number of people who become infected by an infectious person when everyone is susceptible to the infection.

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