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AT A GLANCE

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

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Introduction

This document provides a high-level overview of the key features of:

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

that may circulate over the course of the respiratory virus season (fall to early spring). Signs and symptoms of illness caused by these respiratory viruses can be very similar and therefore cannot be diagnosed 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 with the possibility of other symptoms, including loss of taste and smell[3]	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]	Pneumonia, sepsis, blood clots, cardiac involvement, neurologic involvement, renal involvement[4], multisystem inflammatory syndrome in children (MIS-C)[5], death[5]	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[2,6]	Older adults[5,6]; underlying medical conditions, including immunocompromised[5,6]; obesity[6]	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]
Strains	Frequent mutations; different types, subtypes, strains[1]	Mutations but no major genetic changes to date[7]	Subgroups and genotypes[1]	Many serotypes[1,2]

Key features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
Incubation period Time period from exposure to onset of symptoms	1 to 4 days[8]	1 to 14 days; median: 5 to 6 days[5]	3 to 7 days[8]	2 to 4 days[8]
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)[1,8]	Period of communicability is still uncertain but evidence suggests ~48 hours before to ~10 days after symptom onset;[4] Some people with severe COVID-19 infection may be infectious for longer[9]	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)[8]
How is the virus spread?	Direct person-to-person transmission and fomites, and possibly small aerosols under certain conditions[1], ^	Predominately by direct person-to-person transmission, and possibly fomites[4] or small aerosols under certain conditions[12,13],^	Direct person-to-person transmission and fomites[1]	Direct person-to-person transmission and fomites[1]
Spread before symptoms start	Yes, can spread from 24 hours before symptoms starts;[4,10]	Yes, from ~ 48 hours or possibly earlier before symptom onset;[4,11]	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[10]	Possible to spread while asymptomatic[11]	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
Type of precaution The type of precautions inform the personal protective equipment to be used	Droplet and contact[14]	Droplet and contact; Airborne when performing aerosol-generating medical procedures[15]	Droplet and contact[14]	Droplet and contact[14]
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*[16]	R_0: 3.32*[17]	R_0:3.0*[18]	Not available
Case fatality Number of deaths divided by number of identified cases, expressed as a percentage	<0.1%[6]	Variable ~ 3%[19]	Not available	Extremely unlikely to result in death[2]
Vaccine	Seasonal vaccine available and recommended annually[20]	Currently in development	Currently in development; Palivizumab, a humanized monoclonal immunoglobulin, available for prevention in some high risk infants[1]	No vaccine

Key features	Seasonal Influenza	SARS-CoV-2 (COVID-19)	Respiratory Syncytial Virus (RSV)	Rhinovirus
Antiviral medications	Used for treatment in those with moderate or severe illness or at risk for complications of influenza[21] Recommended for both treatment and prevention in outbreaks in closed settings, especially if residents are at high risk of complications[21]	Approved treatments (dexamethasone[22], remdesivir[23]) are available for hospitalized patients with particular indications; Trials for therapies are ongoing	None routinely recommended	None

^ It is increasingly recognized that respiratory virus may be contained in particles of various sizes, including larger droplets and smaller aerosols (see Focus On: COVID-19: Aerosol Generation from Coughs and Sneezes[12]; COVID-19 Routes of Transmission-What We Know So Far[13]).

* R_0: 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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At a Glance

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