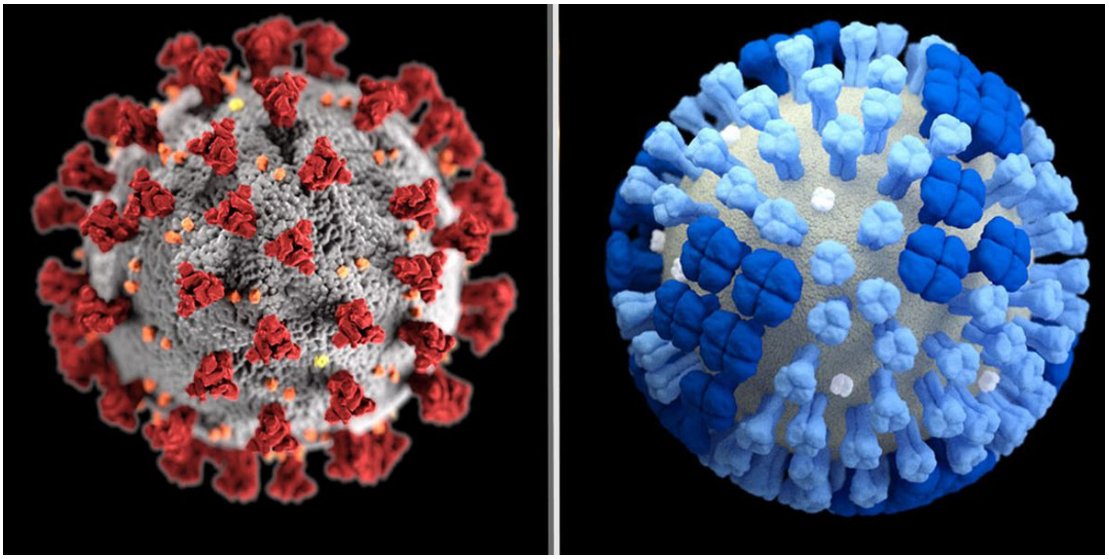
IMMUNIZATION WEEK

National Immunization Awareness Week 2020



COVID-19 versus Influenza

Similarities and Differences

The new coronavirus (known as SARS-CoV-2 or severe acute respiratory syndrome coronavirus 2), is the virus causing the disease COVID-19. Coronaviruses are a large family of viruses that infect humans around the world every day, such as causing the common cold. The four most common endemic human coronaviruses are HCoV-229E, -NL63, -OC43 and -HKU1. They have also caused other human diseases including MERS (Middle East Respiratory Syndrome) and SARS (Severe Acute Respiratory Syndrome).

The influenza viruses are another family of viruses. They cause the common "flu" but have also caused serious disease outbreaks including the Spanish Flu (1918) and the Swine Flu (2009), both caused by the H1N1 subtype of the Influenza A virus.

Since SARS-CoV-2 has emerged during influenza season, this has prompted comparison between the two. Is COVID-19 more serious than the flu? Scientists have been studying the flu for decades, so we understand a lot about the virus and what to expect each year. In contrast, very little is known about the new coronavirus because it is so new.

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INFLUENZA

Family of viruses

INFLUENZA A

Subtypes H1NI : Spanish Flu & Swine Flu

INFLUENZA B

CORONAVIRUSES

Family of viruses

HCOV-229E, -NL63, -OC43 & -HKU1

NEW CORONAVIRUS

SARS-CoV-2

Severe acute respiratory syndrome coronavirus 2

Causes the disease

COVID-19

How do the two viruses stack up against each other?

Symptoms

Fever, dry cough, fatigue, and shortness of breath are the most common symptoms of COVID-19. These symptoms also overlap with symptoms of influenza.

Influenza is an acute respiratory infection that causes fever and dry cough, but can also cause muscle aches, headaches, chills, appetite loss and fatigue. The influenza infection typically lasts 7 to 10 days. It takes 1 to 3 days after being exposed to the virus to develop symptoms (incubation period) and adults with influenza are infectious from 1 day before and up to 7 days after the onset of the symptoms. Children can be infectious for up to 10 days after onset of symptoms. (IPAC, CDC Pink Book).

COVID-19 can cause fever, dry cough, sore throat and difficulty breathing. People infected with COVID-19 may experience little or no symptoms with illness ranging from mild to severe (BCCDC). From what we know so far, the incubation period is between 3 and 14 days after exposure to the SARS-CoV-2 virus. The average amount of time that a person infected with SARS-CoV-2 can shed the virus is 10 days. (BCCDC)

Common symptoms

INFLUENZA	COVID-19
Fever	Fever
Cough	Cough
Fatigue	Fatigue
Headaches	Shortness of breath
Muscle aches	
Chills	

Severity

The majority of cases of COVID-19 are mild (80%), and based on data from China, only 20% of COVID-19 patients are serious enough to require admission to hospital. Once admitted, the average hospital stay is 11 days.

This is still 10 times more hospital admissions than from influenza! The rate of hospitalization for the flu is much lower - only 1 to 2% of cases (CDC). The hospital stay for COVID-19 is also twice as long as that for the flu! The average hospital stay for influenza is 5 to 6 days.

Infection rate

We have many years of data about influenza infection rates. Canada has a yearly report from FluWatch. During the 2018-19 season, there were a total of 48,818 influenza cases in Canada. Of these, there were 3,657 hospitalizations leading to 613 ICU admissions and 244 deaths. Among the 1,352 pediatric hospitalized cases, a total of 271 ICU admissions and 10 deaths were reported. (FluWatch). British Columbia had 6,724 of the total influenza cases.

For the 2019-2020 COVID-19 pandemic, there have been a total of 38,205 cases in Canada leading to 1,831 deaths. British Columbia has 1,699 COVID-19 cases.

While there are still fewer cases of COVID-19 than influenza last year, COVID-19 has (so far) caused 7.5 times more deaths than the flu! The death rate of COVID-19 is 4.79% of cases, which is much higher than 0.5% of cases for influenza!

Transmission

Both influenza and SARS-CoV-2 are spread from person to person through close contact with droplets expelled from the nose and mouth of a sick person (ie. from saliva, sneezing). This is why the B.C. Centre for Disease Control (BCCDC) recommends that you keep a physical distance of at least 6 feet or 2 meters from other people.

Both viruses can also be spread by touching objects and surfaces that may be contaminated with the virus (ie. doorknob, telephone). The influenza virus and the SARS-CoV-2 virus can last for several hours (up to several days) on these surfaces and be transmitted by direct contact. (IPAC)

The best measures to reduce the spread of either of these viruses includes good hand hygiene with soap and water or alcohol-based hand sanitizer, as well as good respiratory etiquette.

New data from China suggest that each person infected with the coronavirus may infect about 2 to 2.5 other people. That's higher than the flu--the average patient spreads the flu virus to about 1.3 others. It's thought that this higher number of infections per coronavirus patient may be related to the frequency of presymptomatic transmission — when people who have been infected are not yet showing symptoms but could, in fact, be contagious (Wang, 2020).

Who is at risk of infection ?

Young children, adults over 65 years of age, or people with other chronic diseases (ie. heart disease, diabetes, cancer, lung diseases etc) are at risk of having a very severe influenza infection, often requiring hospitalization. The majority of cases of Influenza are in children less than 5 years old or adults greater than 65 years old (IPAC). The same individuals are also at risk of severe COVID-19 infection. However, studies from China have demonstrated a decreased rate of severe respiratory distress in children with COVID-19, although more severe disease occurred in younger children, children with underlying lung conditions or children with impaired immune systems (Pediatrics).

It is important to emphasize that the reason that so many people are becoming infected with the novel coronaviruses is that the entire global population is immunologically naïve (because we have never encountered the virus before). This is in contrast to influenza, where the majority of the global population has partial immunity from being infected by different strains of influenza in previous years. However, young children do not have partial immunity because they are not old enough to have past influenza infections. This is one of the reasons why they have more severe infections than older kids!

Treatment

For mild cases of both the flu and COVID-19, the only treatment is rest and supportive care. For severe cases requiring hospitalization, both diseases may require more intensive management, such as using a ventilator to help with breathing. We have four approved medications (antiviral drugs) for influenza that can help decrease the severity and duration of infection in hospitalized patients: oseltamivir, zanamivir, peramivir, and baloxavir (CDC). There are currently no approved medications to treat COVID-19.

Pandemics

A pandemic is any infection that spreads across many nations around the world.

On March 11, 2020, the World Health Organization officially declared the COVID-19 outbreak a pandemic. This is the first time a coronavirus has ever caused a pandemic.

In contrast, the influenza virus has already caused several pandemics. There were three influenza pandemics in the 20th century: Spanish flu (1918-1919), Asian flu (1957-1958) and the Hong Kong Flu (1968-1969). The first influenza pandemic in the 21st century was the Swine flu (H1N1) in 2009. (IPAC)

Prevention

The influenza vaccine is composed of influenza virus strains that were in circulation in the previous year, as well as those predicted to be a risk for the current year. The body recognizes the vaccine as an “invader” and produces antibodies against it. Now the body will have antibodies built up before influenza season, so they can fight off the virus and avoid developing the flu. The vaccine can be either killed virus or live attenuated virus.

Scientists are working on developing a vaccine for the SARS-CoV-2 virus in the hopes that COVID-19 will soon become a vaccine-preventable disease!

TEST YOUR KNOWLEDGE ON VACCINATION !

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Beat the quiz, Earn vaccines !

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