

What is influenza?

Influenza (the flu) is an acute, respiratory illness that is highly contagious due to the ease with which it spreads from person to person.

The flu affects about 5%–20% of the population on average and unlike many other respiratory infections, such as the common cold, can cause severe illness, and sometimes death¹.

Approximately 200,000 people are hospitalized from seasonal flu-related complications and over a period of 30 years, between 1976 and 2006, estimates of flu-associated deaths ranged from a low of about 3,000 to a high of about 49,000 people².

How is influenza spread?

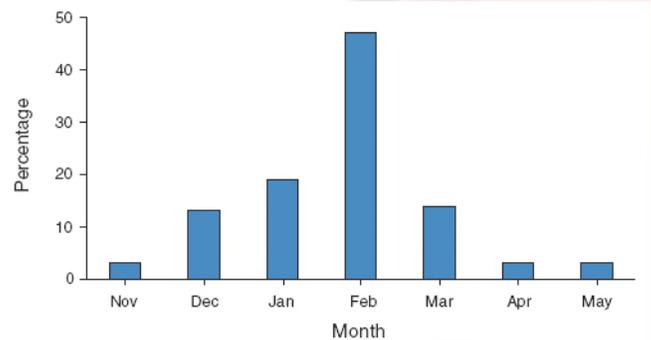
The flu is spread through coughs and sneezes from infected people. Influenza virus may also be spread when a person touches respiratory droplets on another person or an object and then touches their own mouth or nose (or someone else's mouth or nose) before washing their hands.

When does influenza occur?

The flu season can begin as early as September, peak between January and March and last as late as May (Figure 1). Vaccines are usually offered in the fall from September through December. While the best time to be vaccinated is October or November, people can still benefit from being vaccinated in December and January.

The flu shot vaccine offers protection for the entire flu season.

Figure 1: Peak Influenza Activity by Month



Source: Centers for Disease Control and Prevention, Prevention and control of influenza: Recommendations of the Advisory Committee on Immunization Practices, 2008. MMWR 2008; 57 (RR-7): 1–64

What causes the Flu?

The flu is caused by the influenza virus which infects the nose, throat and lungs. There are two main types of influenza viruses (Type A and B) that routinely cause the disease. They affect persons of all ages and can be responsible for flu epidemics each year.

Influenza A viruses have different strains and have the ability to change constantly. Thus, in the winter months, over the course of a flu season, different types (A & B) and subtypes of influenza A viruses can circulate and cause serious illness. Influenza A infects any type of species.

In the spring of 2009, a new influenza A (H1N1) virus emerged to cause illness in people and spread worldwide. This virus was very different from regular human influenza A (H1N1) viruses and caused the first influenza pandemic in more than 40 years.

Influenza B viruses can also be further broken down into different strains. They are less likely to mutate than Type A. Type B infects primarily humans.

Influenza C, a third type of the virus, is known to cause mild respiratory illness and is not thought to cause epidemics.

What causes the influenza virus to change?

Influenza viruses are constantly evolving and change in two different ways, antigenic drift and antigenic shift.

Antigenic Drift

These are small changes in the virus that happen gradually over time. Antigenic drift produces new virus strains that may not be recognized by the body's immune system.

For example, a person infected with a particular flu virus strain develops antibodies against that virus. As newer virus strains appear, the antibodies against the older strains no longer recognize the "newer" virus, and re-infection can occur.

Antigenic drift is one of the main reasons why people can get the flu more than one time. In most years, one or two of the three virus strains in the influenza vaccine are updated to keep up with the changes in the circulating flu viruses. People who want to be protected from flu need to be vaccinated every year.

Antigenic Shift

Antigenic shift is an abrupt, major change, resulting in new subtypes in influenza viruses that had not previously circulated.

Shifts only occur in the influenza A virus and result in new subtypes or combinations that can cause widespread and severe outbreaks or pandemic.

Such a "shift" occurred in the spring of 2009, when a new H1N1 virus with a new combination of genes emerged to infect people and quickly spread, causing a flu pandemic.

When shift happens, most people have little or no protection against the new virus. While influenza viruses are changing by antigenic drift all the time, antigenic shift happens only occasionally. Type A viruses undergo both kinds of changes. Influenza type B viruses change only by the more gradual process of antigenic drift.

What you should know for the 2015-2016 Influenza Season.

Note: On February 26, 2015, the Advisory Committee on Immunization Practices (ACIP) voted on its annual influenza vaccine recommendations. For 2015-2016, ACIP recommends annual influenza vaccination for everyone 6 months and older with either LAIV or IIV, with no preference expressed for either vaccine when either one is otherwise appropriate. More information on this vote is available at the [CDC Newsroom](#). The LAIV content on this web page will be updated after the 2015-2016 recommendations are approved by the CDC Director and published in the [MMWR](#).

For more details visit: www.flu.gov

References:

- Nichol KL, Dheilly SJ, Greenberg ME, Ehlinger E. Burden of influenza-like illness and effectiveness of influenza vaccination among working adults aged 50-64 years. Clin Infect Dis. 2009; 48(3):292-298*
- Molinari NA, Ortega-Sanchez IR, Messonnier ML, et al. The annual impact of seasonal influenza in the US: Measuring disease burden and costs. Vaccine. 2007; 25(27): 5086-5096*

3. Liang Mao, et al. 2012; 10.1186/1476-072X-11-16 Annual economic impacts of seasonal influenza on US counties: Spatial heterogeneity and patterns.

<http://link.springer.com/article/10.1186/1476-072X-11-16/fulltext.html>

