

# Pandemic Module Resource

The following article is a part of a larger document created by Medical News Today.

## What is the difference between a pandemic and an epidemic?

A pandemic is different from an epidemic or seasonal outbreak.

- Put simply, a pandemic covers a much wider geographical area, often worldwide. A pandemic also infects many more people than an epidemic. An epidemic is specific to one city, region or country, while a pandemic goes much further than national borders.
- An epidemic is when the number of people who become infected rises well beyond what is expected within a country or a part of a country. When the infection takes place in several countries at the same time it then starts turning into a pandemic.
- A pandemic is usually caused by a new virus strain or subtype - a virus humans either have no immunity against, or very little immunity. If immunity is low or non-existent the virus is much more likely to spread around the world if it becomes easily human transmissible.
- In the case of influenza, seasonal outbreaks (epidemics) are generally caused by subtypes of a virus that is already circulating among people. Pandemics, on the other hand, are generally caused by novel subtypes - these subtypes have not circulated among people before. Pandemics can also be caused by viruses, in the case of influenza, that perhaps have not circulated among people for a very long time.
- Pandemics generally cause much higher numbers of deaths than epidemics. The social disruption, economic loss, and general hardship caused by a pandemic are much higher than what an epidemic can cause.

## How do influenza pandemics emerge?

A pandemic can emerge when the influenza A virus changes suddenly - what experts call an antigenic shift. The HA and/or NA proteins, which are on the surface of the virus, have new combinations; resulting in a new influenza A virus subtype.

This new influenza subtype needs one characteristic to cause a pandemic - it must be easily human transmissible (it can easily spread from one person to another).

After the pandemic has emerged and spread, the virus subtype circulates among humans for several years, causing occasional flu epidemics. These will not usually become more than epidemics because humans have developed some immunity over time. Various bodies around the world, such as the Health Protection Agency (UK), the World Health Organization (WHO), and the Centers for Disease Control and Prevention (USA) monitor the behavior and movements of the virus.

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