

Influenza

Pandemic Influenza



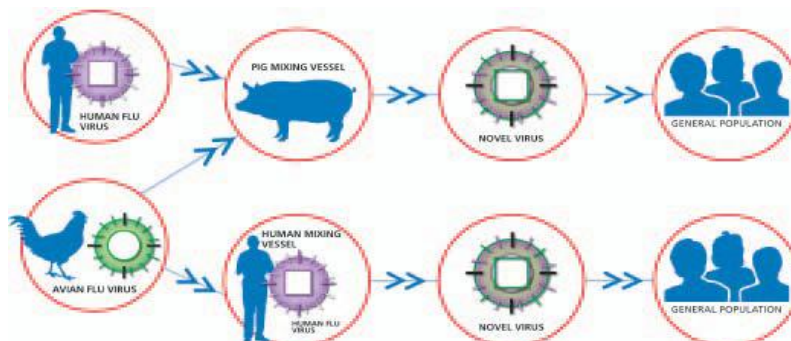
A pandemic is a *global disease outbreak*. It is determined by how the disease spreads, not how many deaths it causes. An *epidemic is a local disease outbreak*.

Pandemics of influenza have occurred sporadically throughout history, four times since 1918, resulting in many deaths. Experts predict another pandemic will occur, but cannot say exactly when it will happen.

Causes of a Pandemic

Only Type A Influenza can cause a pandemic, because it is the only type that is found in both animals and humans. Type A Influenza is less genetically stable than Type B. It is in a family of viruses that uses RNA to reproduce and viral RNA is notorious for swapping genetic material with other RNA that it meets. When this unpredictable swapping occurs between human flu and bird flu it leads to a new virus in a population that has not been exposed to it before. *Our bodies will not know how to respond to this threat.*

Scientists used to think it took an animal like a pig to serve as the ‘mixing vessel’ for the avian flu strain and a human flu strain. However, more recently the fear is that people may also serve as ‘mixing vessels’. In 1997, in Hong Kong, experts learned that a new strain can occur directly when an avian influenza strain infects a human who has a human virus at the same time.



The possibility that people could act as ‘mixing vessels’ has caused particular concern with the avian flu strains circulating in Asia. Some avian flu strains have demonstrated the ability to infect people. If people infected with avian flu also become infected with a human flu strain at the same time, this would allow the exchange of genes that could lead to the emergence of a pandemic strain. This scenario can play out anywhere these species come together in the world, not just in Asia.

Once the pandemic strain has established itself in humans, it is spread like any other flu. Droplets are produced and spread by coughing and sneezing. These droplets are infectious in adults from one day prior to the onset of symptoms to about five days after the onset. This means it will spread very easily!

Characteristics and Challenges of Influenza Pandemic

1. Rapid Worldwide Spread:

- When a pandemic flu virus emerges, expect it to spread around the world.
- Prepare for a pandemic flu as if the entire world population is susceptible.
- Countries may try to slow the pandemic through border closings and travel restrictions.
- Past pandemics spread globally in two or sometimes three waves.

2. Overloaded Health Care Systems:

- Most people have little or no immunity to a pandemic virus. Infection and illness rates soar. A substantial percentage of the world's population will require some form of medical care.
- There are likely to be shortages in facilities, equipment, and hospital beds needed to cope with the number of people who become ill.
- Death rates may be high. Four factors largely determine the death toll:
 - The number of people who become infected
 - The strength of the virus
 - The underlying characteristics and vulnerability of affected populations
 - Effectiveness of preventive measures

3. Inadequate Medical Supplies:

- The need for vaccines is likely to be larger than the supply. Those at highest risk will likely get the vaccine first.
- Early in a pandemic, the need for antiviral medications is likely to be larger than the supply. Those at highest risk will likely get antiviral medications first.
- A pandemic can create a shortage of hospital beds, ventilators, and other supplies. Alternative sites, such as schools, may serve as medical facilities.

4. Disrupted Economy and Society:

- Travel bans, event cancellations, and school and business closings could have a major impact on communities and citizens.
- Caring for sick family members and fear of exposure could result in significant employee absenteeism.



For more sources of information on this topic visit:

ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co

MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES www.michigan.gov/mdhhs

CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov

OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION www.osha.gov