

Section 2 Influenza and Pandemic Influenza

1. Influenza
2. Pandemic Influenza
3. Pandemic Timeline

1. Influenza

Influenza is a contagious respiratory illness caused by a group of viruses: Influenza Types A, B and C. Most seasonal influenza epidemics are caused by Types A and B; Type C rarely causes human illness. Influenza can cause mild to severe illness. Influenza usually starts suddenly. Common symptoms include: fever (usually high, lasting 3 to 4 days), headache (often severe), aches and pains (often severe), fatigue and weakness (can last 2 to 3 weeks), extreme exhaustion (very common at the start), stuffy nose, sneezing, sore throat, chest discomfort and cough, and nausea, vomiting and diarrhea (in children). Many of different illnesses, including the common cold, can have similar symptoms. While most healthy people recover from influenza without complications, some people – such as older people, young children, and people with certain health conditions – are at high risk for serious complications from influenza. Some of the complications caused by influenza include: bacterial pneumonia, dehydration, and worsening of chronic medical conditions, such as congestive heart failure, asthma, or diabetes. Children and adults may develop sinus problems and ear infections.

The incubation period for influenza is from 1 to 3 days. People with influenza are infectious and able to transmit the virus for up to 24 hours before symptoms appear. Adults are infectious for 3 to 5 days after symptoms appear while children are infectious for up to 7 days after symptoms appear. People with influenza tend to shed more virus in their respiratory secretions in the early stages of the illness. Viral shedding tends to last longer in infants, young children and people with weak or compromised immune systems.

The importance of influenza viruses as a major human health threat is due to a number of factors, including a high degree of transmissibility, the presence of a vast reservoir (primarily infected birds) of novel (new) variants, and the unusual properties of the influenza virus genome. Influenza A viruses are composed of two major antigenic structures essential to vaccines and immunity: hemagglutinin (H) and neuraminidase (N). The structure of these two components defines the virus subtype.

2. Pandemic Influenza

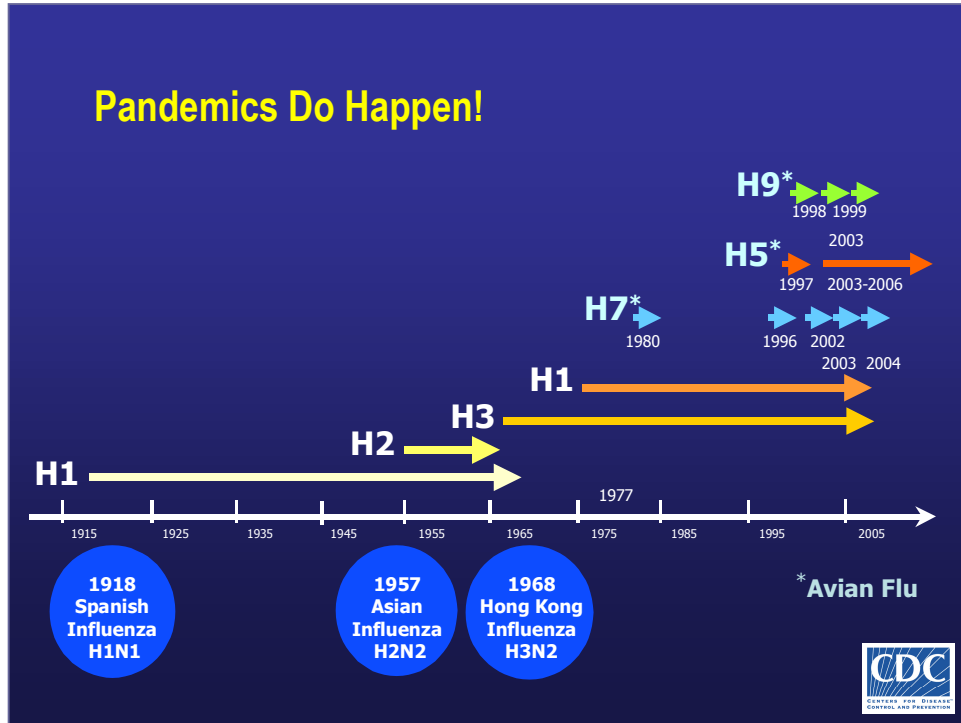
Pandemic influenza refers to the occurrence of a new strain of influenza that circulates worldwide. The new strain, which usually occurs due to “antigenic shift”, will not have been previously seen in humans and so there will be no past immunity to provide protection. In past influenza pandemics, emergence of new strains has caused significant hospitalizations and deaths, and has spread rapidly around the world. The 20th century pandemics were caused by the H1N1, H2N2 and H3N2 strains. H1N1 and H3N2 viruses continue to circulate and cause yearly epidemics of influenza today.

Certain conditions make an influenza pandemic more likely:

- A new influenza A virus arising from a major genetic change i.e., an antigenic shift;

- A susceptible population with little or no immunity;
- A virus that is transmitted efficiently from person to person; and
- A virulent virus with the capacity to cause serious illness and death.

3. Pandemic History and Timeline



For H5N1 avian influenza timeline, refer to:
http://www.who.int/csr/disease/avian_influenza/Timeline_15.02.pdf