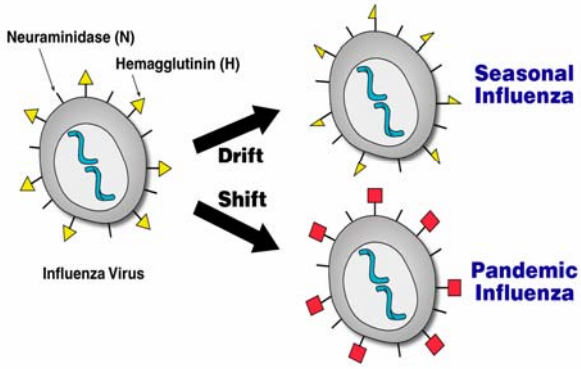
Influenza: Antigenic Drift and Shift



The Burden of Seasonal Influenza

- 250,000 to 500,000 deaths globally/yr
- 36,000 deaths and >200,000 hospitalizations/yr in U.S.
- $37.5 billion in economic costs/yr in U.S. related to influenza and pneumonia
- Ever-present threat of pandemic influenza

Sources: CDC, WHO, Am. Lung. Assoc.

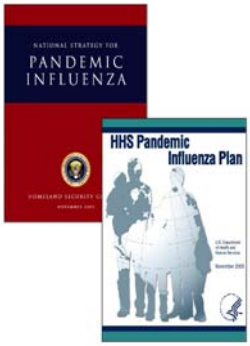
Past Antigenic Shifts: Pandemics in the 20th Century

			Global Deaths
1918	H1N1	Spanish Flu	>50 million
1957	H2N2	Asian Flu	1-2 million
1968	H3N2	Hong Kong Flu	700,000

H5N1 Influenza Cases, 2003-2006

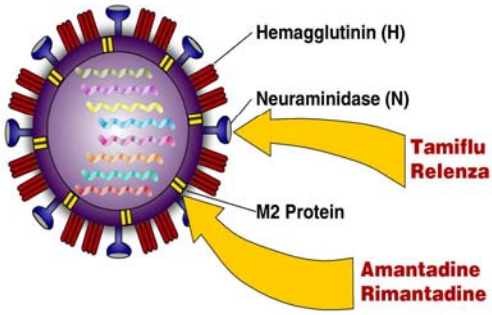
Source: WHO and OIE (World Organization for Animal Health), 3/1/2006

Pandemic Influenza Preparedness
Strategy and Plan



- International Surveillance
- Domestic Surveillance
- Vaccine
- Antivirals
- Communications
- State and Local Preparedness

Antiviral Therapies for Influenza



U.S. Department of Health and Human Services

NIH News

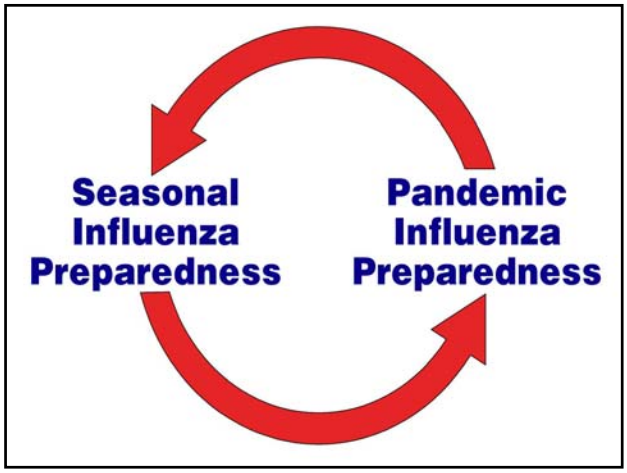
National Institutes of Health

National Institute of Allergy and Infectious Diseases (NIAID)

http://www.niaid.nih.gov/

FOR IMMEDIATE RELEASE
Wednesday, March 23, 2005

NIAID Initiates Trial of Experimental Avian Flu Vaccine

Fast-track recruitment has begun for a trial to investigate the safety of a vaccine against H5N1 avian influenza, the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health (NIH), announced today.

This Phase I trial will test the vaccine's safety and ability to generate an immune response in 450 healthy adults aged 18 to 64.