

# Pandemic Influenza

Not if...But when



American  
Red Cross

# Agenda

- What makes a pandemic
- Historical pandemics
- Influenza viruses introduction
- How a future pandemic might look
- Becoming personally prepared for a pandemic



# Pandemic

- A disease outbreak that begins with animals that spreads rapidly and affects many people world wide.
- Characteristics
  - New virus that spreads easily as most people are susceptible
  - Effective human to human transmission is necessary
  - Measured by how fast the virus spreads
  - Wide geographic spread
- Recent Example of Pandemic – West Nile Virus
  - Vector borne transmission, not human to human.



# Past influenza pandemics

Pandemic	Deaths in the US	Deaths Worldwide	Population Affected
Spanish Flu (H1N1) 1918-1919	500,000	40 million	Persons 20-40 years old
Asian Flu (H2N2) 1957-58	70,000	1-2 million	Infants, elderly
Hong Kong Flu (H3N2) 1968-69	36,000	700,000	Infants, elderly
Russian Flu (H1N1) 1977-78	8,300	??	Persons under 20 years old
West Nile Virus	116	??	Up to 90% of population may now carry this anti-body
Avian Flu (H5N1) 2006	500,000 ??	???	All



# Pandemic Waves

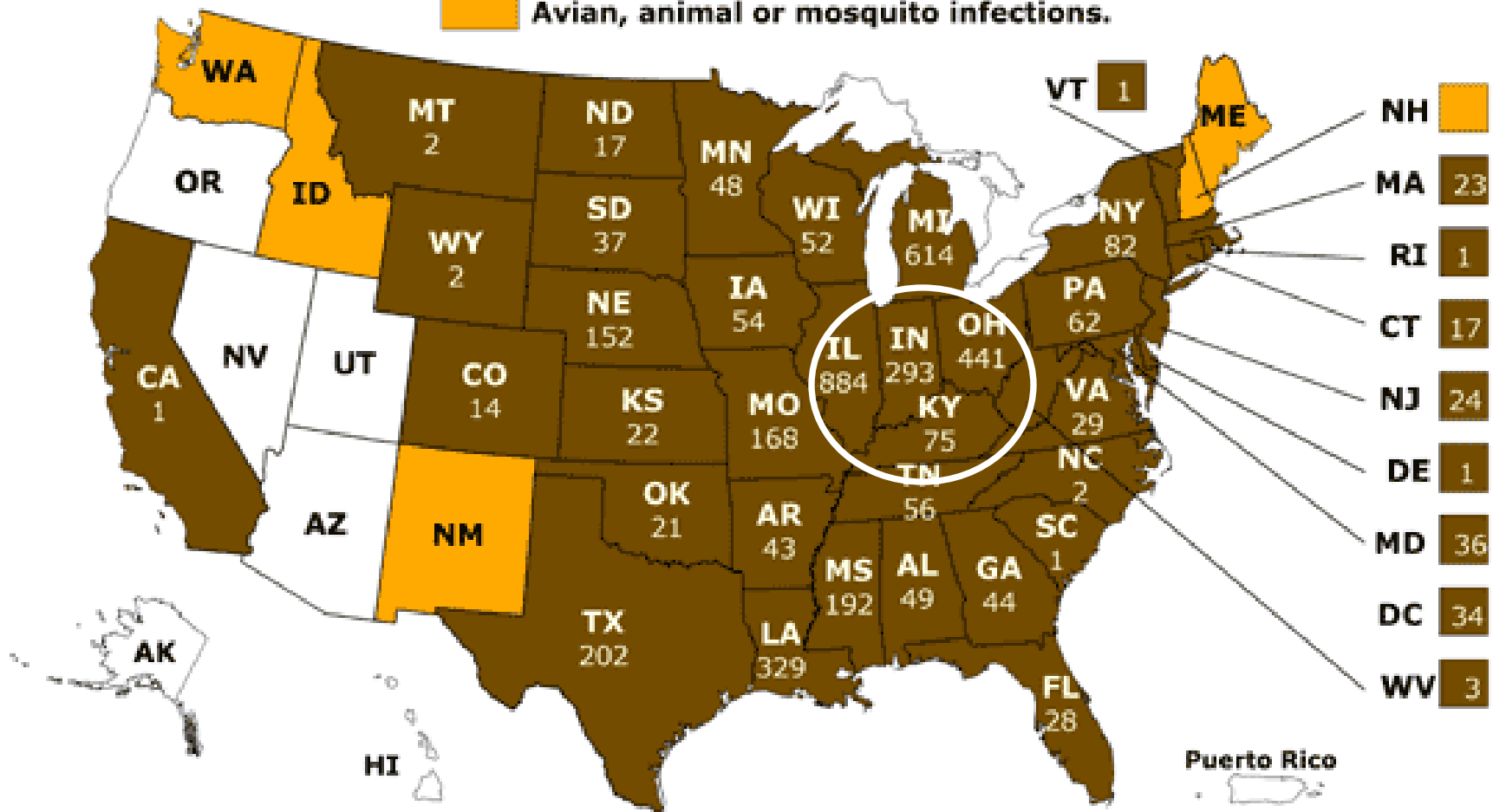
- Pandemics occur in multiple waves of disease outbreaks
- The first wave in a local area is likely to last six to eight weeks
- The time between pandemic waves varies and can not be easily predicted.
- Outbreaks may occur simultaneously in many areas.
- Impacts will last for weeks to months.



# West Nile 2002





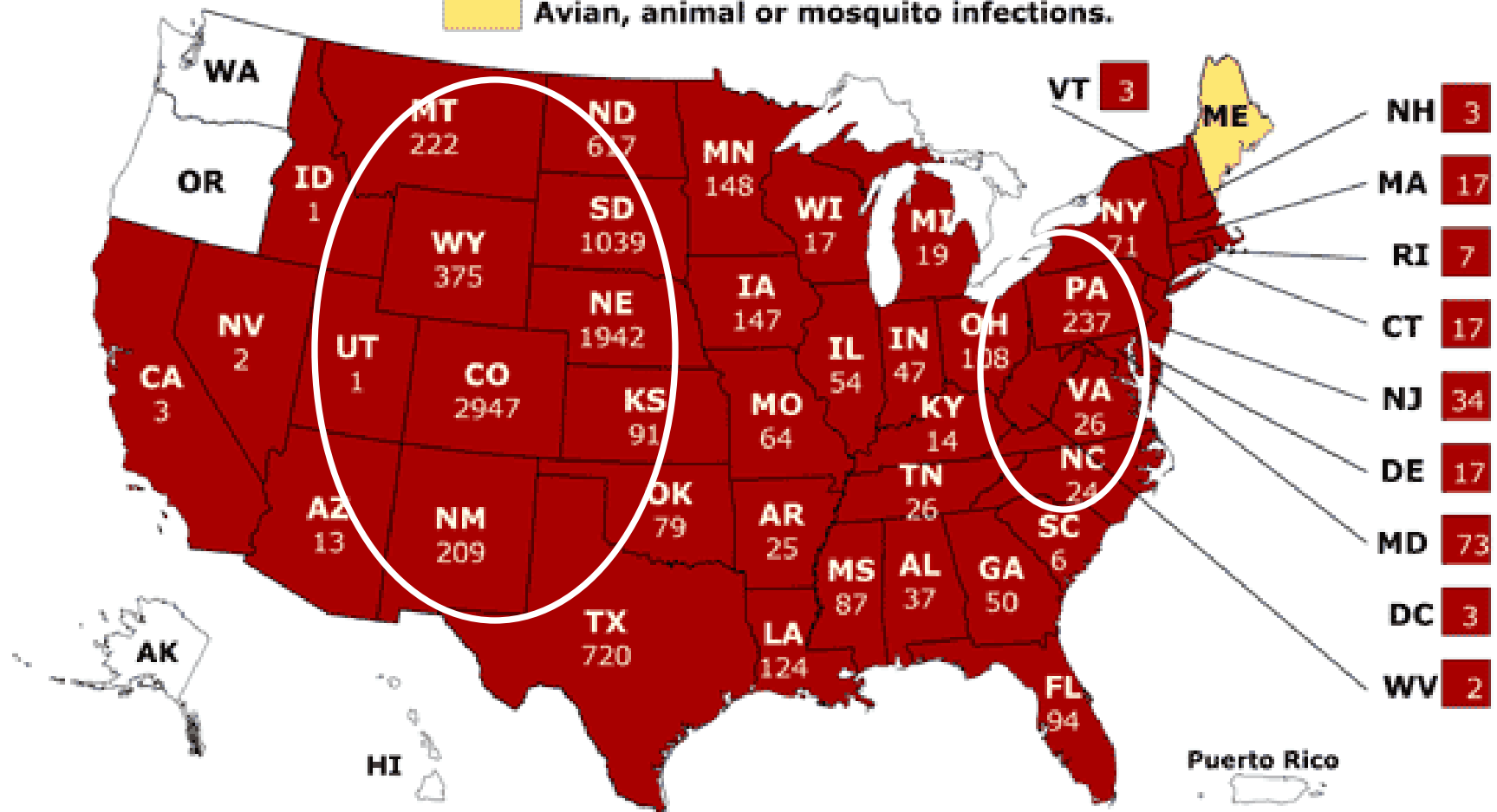
Indicates human disease case(s).  
 Avian, animal or mosquito infections.



# West Nile 2003



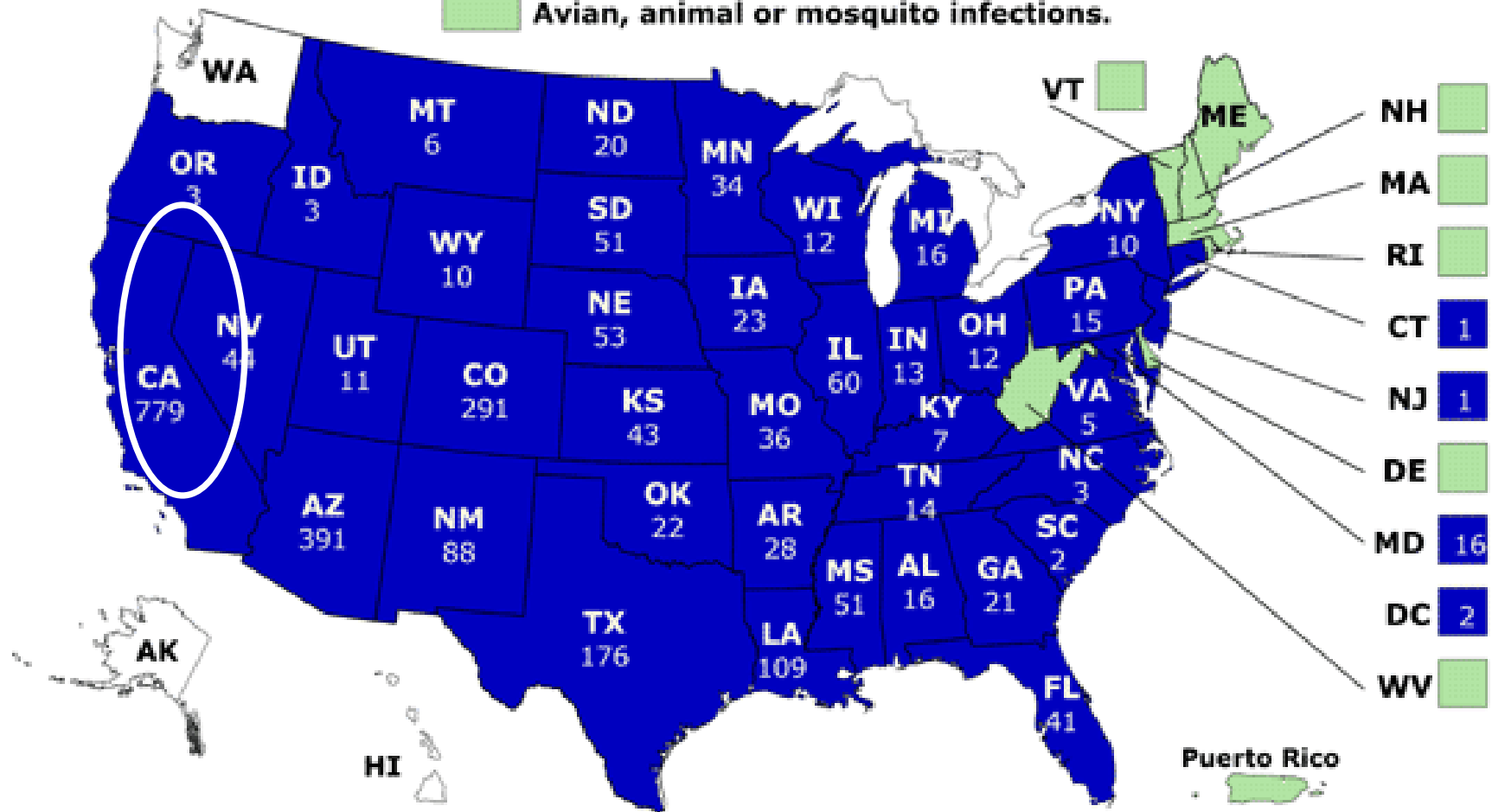
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# West Nile 2004



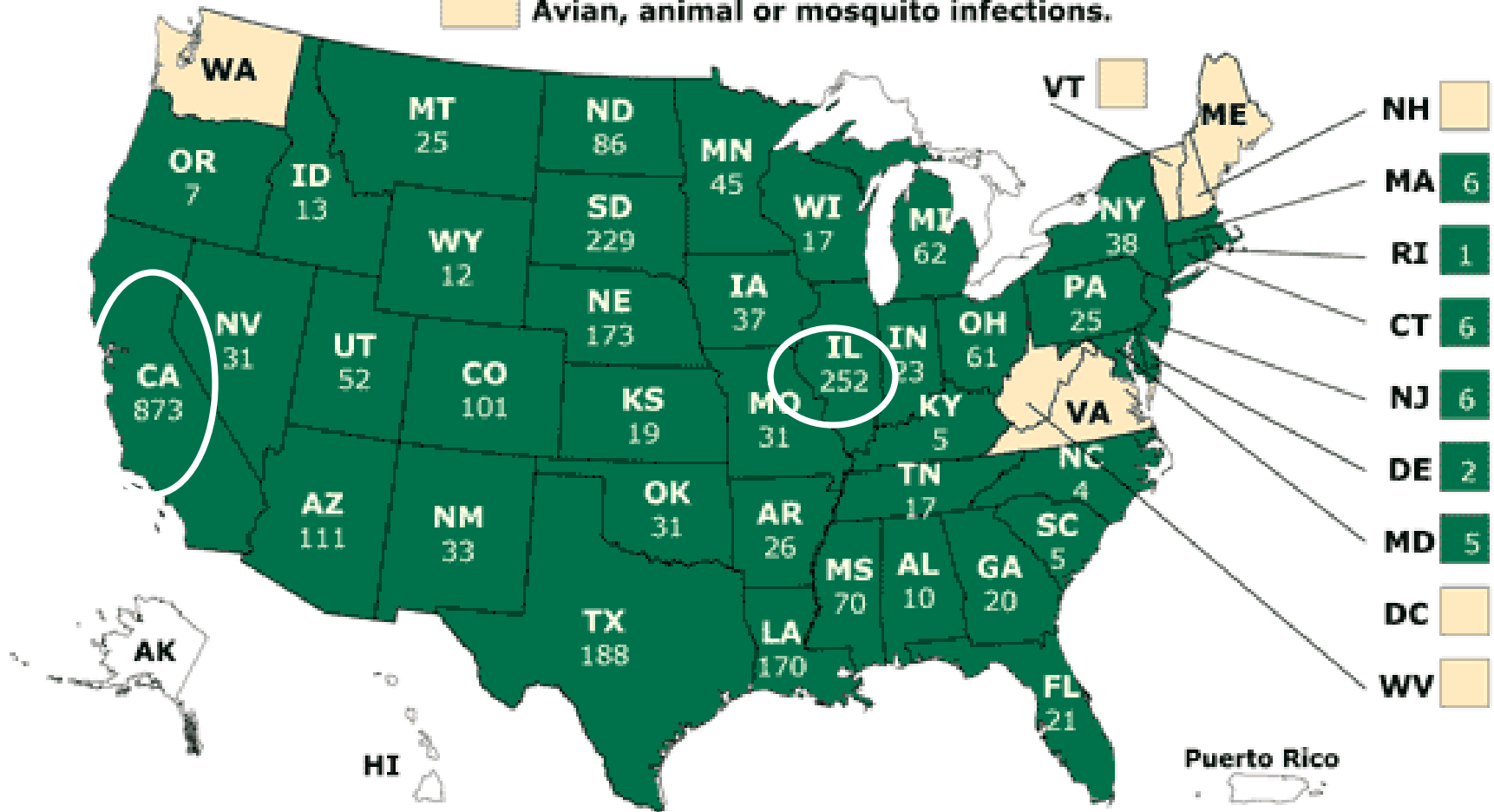
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# West Nile 2005



**■** Indicates human disease case(s).  
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# West Nile Virus

- The West Nile Virus was carried by mosquitoes and infected birds.
- The wave you saw of human to human transmission could happen in days.
- The state issued \$4.6 million in grants to track and control the West Nile Virus.
- So far, the state has allocated \$500,000 for Pandemic Flu.



# Pandemic Waves

- Influenza pandemics are inevitable: naturally recur at cyclical intervals
- Influenza pandemics can cause:
  - High levels of sickness and death
  - Drastic disruption of critical services
  - Severe economic losses
- There will be little warning time between the onset of a pandemic and its arrival in the US



# Pandemic Influenza in Pennsylvania

Estimated morbidity and mortality during an influenza pandemic  
(within 12 – 16 weeks)

	<b>United States</b>	<b>Pennsylvania</b>
Require Outpatient Care	50 Million	1.6 Million (about 14% of Population)
Hospitalizations	2 million	37,800 (.57% of Population)
Deaths	500,000	9,100 (.14% of Population)



# Influenza (or Flu)

- The flu is a contagious respiratory illness caused by a virus.
- It can cause mild to severe illness, and at times can lead to death.
- A person infected with the flu virus can transmit it one-two days before they have symptoms.
- A person infected with the flu virus can transmit it four-five days after symptoms start.



# Influenza Spread

Spread by airborne droplets through the air:

- Sneezing
- Coughing
- Touching items recently contaminated by a person with the flu virus
- Mass gatherings



## Influenza also spread through direct contact:

- Hand shakes
  - Touching
  - Hugging
  - Kissing



## Indirect Contact a source of transmission as well:

- Surfaces
  - Sharing food or drink
- Major germ areas such as grocery stores, ATM machines, doors



# Influenza Symptoms

Symptoms include:

- Fever (usually high) and chills
- Body aches
- Sore throat
- Non-productive cough (dry)
- Runny or stuffy nose
- Headache
- Extremely tired (fatigue)
- Diarrhea
- Pneumonia & or other severe respiratory diseases



# Seasonal Flu

- The seasonal flu usually occurs annually between December and March.
- Every year in the US on average:
  - >200,000 people are hospitalized
  - 36,000 people die
- Most people who get the flu recover within 1-2 weeks and do not require medical treatment



# The Difference between Season Flu and Pandemic Flu

- Seasonal flu is predictable; pandemic flu is not predictable.
- Pandemic flu is caused by a new flu virus strain that humans have not been exposed to, so we have no natural resistance or immunity to it.
- Pandemic flu infects large numbers of people of different ages all over the world and causes serious illness and deaths



# Differences Between Seasonal Flu and Pandemic Flu

Seasonal Flu	Pandemic Flu
Caused by influenza viruses that are similar to those already affecting people	Caused by a new influenza virus that people have not been exposed to before. Likely to be more severe, affect more people and cause more deaths than seasonal flu because people will not have immunity to the new virus.
Symptoms include fever, cough, runny nose and muscle pain. Deaths can be caused by complications such as pneumonia.	Symptoms similar to the common flu may be more severe and complications more serious.



# Differences Between Seasonal Flu and Pandemic Flu

Seasonal Flu	Pandemic Flu
Healthy adults usually not at risk for serious complications ( the very young, the elderly and those with certain underlying health conditions at increased risk for serious complications).	Healthy adults may also be at increased risk for serious complications.
Generally causes modest impact on society (some school closings, encouragement of people who are sick to stay home).	A severe pandemic could change the patterns of daily life for some time. People may choose to stay home to keep away from others who are sick. Also, people may need to stay home to care for ill family and loved ones. Travel and public gatherings could be limited.



# Treatment and Prevention - Vaccine

- A vaccine to protect people from pandemic flu is not available now.
- A vaccine most likely will not be available at the start of a flu pandemic. It could take up to 6 months to develop and another 9 – 18 months to distribute to the public.
- Supplies will be limited, if available at all.
- Don't count on a vaccine



# Treatment and Prevention – Antiviral Drugs

- Antiviral agents
  - Effective in preventing illness
  - Can prevent severe complications
  - May not be effective against pandemic virus
- Supplies will be limited
- Establish priority groups for use of available drug



# Pandemic Impact - Infrastructure

- Significant disruption of transportation, commerce, utilities, public safety and communications
- Limited to no assistance from State and Federal governments due to nation-wide impact
- Schools, stores, and other public meeting places my close



# Pandemic Impact – Health Care System

- Extreme staffing shortages
- Shortage of beds, facility space
- Shortage of key supplies (ventilators, drugs)
- Hospital morgues, Medical Examiner and mortuary services overwhelmed
- Extreme demands on social and counseling services
- Demand will outpace supply for months



# Pandemic Impact - Businesses

- High absenteeism
- Challenges getting to/from worksite
- Psychological impacts on workforce will be extreme
- Social distancing efforts may dramatically change hours of operation or close businesses temporarily
- Economic issues – small businesses at greatest risk

