

# Pandemic Influenza

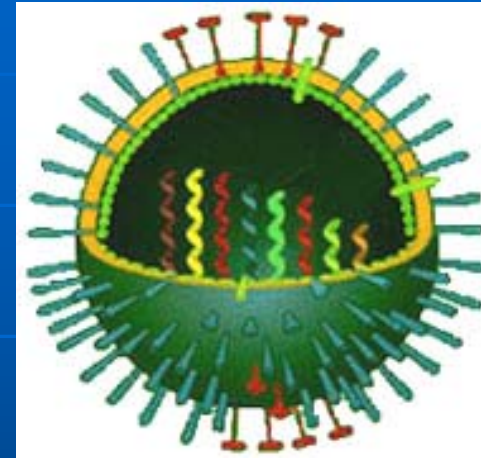
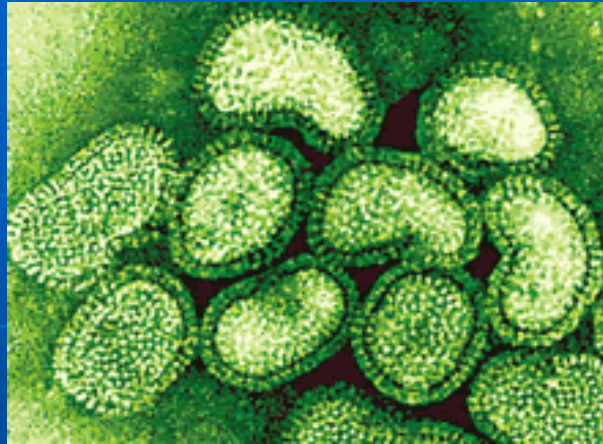
Be Informed. Get Prepared.



## 2009 H1N1 Influenza “Swine Flu”

- 2009 H1N1 Influenza
  - Swine flu is respiratory disease in pigs by Type A influenza virus. Regularly causes mild disease in pigs. The types are constantly changing (H1N1, H1N2, H3N2, H3N1).
  - Can infect humans who are in direct contact with swine
  - Until April, rare human-to-human transmission
  - Epidemiology unfolding – U.S. 8,843 hospitalizations, 556 deaths as of September 1, 2009. CDC not longer counts individual probable or confirmed cases as of July 24.

# Influenza Virus



**Viral particle is round and made up of RNA which provides the code for the surface protein**

**The surface has protrusions of either H (hemagglutinin) or N (neuraminidase) proteins**

**Minor changes in the structure of these proteins may mean the difference between a benign disease or a killer**



## What is a Pandemic?

- A PANDEMIC is a global disease outbreak.
- A flu pandemic occurs when:
  - A new influenza virus emerges
  - People have no pre-existing immunity
  - The virus is easily spread from human to human
- Animals are virus reservoirs - potential to adapt into a strain easily transmissible to humans
- Once a contagious virus emerges, it is expected to circle the world in about 3 months; all countries will be affected



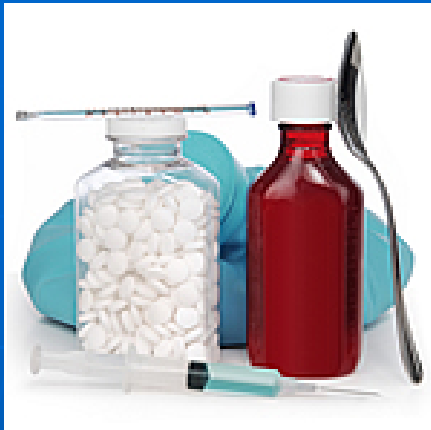
# 20<sup>th</sup> Century Influenza Pandemics

- 1918 - 1919 Spanish Flu (H1N1)
  - Origin of virus unknown (started in US)
  - 500,000 U.S. deaths, primarily 20 -35 year olds
  - 40 - 50 million deaths world-wide
  - 2.5 % of those infected died
  
- 1957- 1958 Asian Flu (H2N2)
  - Genes from human and avian influenza
  - 70,000 deaths in the US, 1<sup>st</sup> wave, primarily children
  
- 1968 – 1969 Hong Kong Flu (H3N2)
  - Genes from human and avian influenza
  - 34,000 U.S. deaths, primarily the elderly



# 20<sup>th</sup> Century Influenza Outbreaks

- 1997 (to present) Avian (H5N1)
  - Bird to human transmission
  - No human to human transmission
  - 433 human cases as of June 2 2009 (primarily Asia)
  - High mortality rate – 61 percent
  
- Seasonal Flu
  - 5 - 15 % clinically ill
  - 36,000 deaths
  - 200,000 hospitalizations



# FLU SYMPTOMS

## F.A.C.T.S.

**F**ever (102-104 F) lasting several days

**A**ches/pain

**C**hest discomfort (severe/pneumonia)

**T**iredness/Exhaustion

**S**udden onset

**H**eadache

**F**atigue lasting 2 – 3 weeks

**S**ore throat



# Protect Yourself from the Flu



- Avoid close contact with people who are sick; if you are sick, stay at home
- Cover your mouth and nose when sneezing or coughing. If you do not have a tissue, it is best to sneeze or cough into your sleeve rather than into your hands: [www.coughsafe.com](http://www.coughsafe.com)
- Wash your hands often with soap and water or alcohol based gel
- Avoid touching your eyes, nose, and mouth; viruses are easily spread through these routes
- Stay Healthy: Stay well rested, engage in regular physical activity, manage your stress, drink plenty of fluids, and eat nutritious food
- Children are major contributors to flu infection. Teach them to good hygiene.





# Vaccines

- A vaccine to protect one against the H1N1 virus should be available mid-October
- The first 40 million doses will go health care workers, high risk individuals (pregnant women, asthmatics, diabetics, and others with medical conditions that put them at risk) children, and caregivers of children younger than 6 months
- There will eventually be enough vaccine for those who want to be vaccinated against H1N1
- Recommendation: Get the SEASONAL flu vaccination when available. Seasonal flu vaccine does not protect against the H1N1 virus.



# Antiviral Drugs

## Tamiflu™ and Relenza™

By prescription only – see your personal health care provider

- For treatment: reduces severity of symptoms, duration, and contagiousness of those who have influenza. Recommended use within first 48 hours of illness.
- For post-exposure prophylaxis (prevention): May be used for prevention in high risk individuals (persons with chronic medical conditions)
- Concern: may produce drug side effects, and does not prevent the risk of complications



## Face Masks and Respirators



**Face masks** – loose fitting, disposable, inexpensive, stops droplets

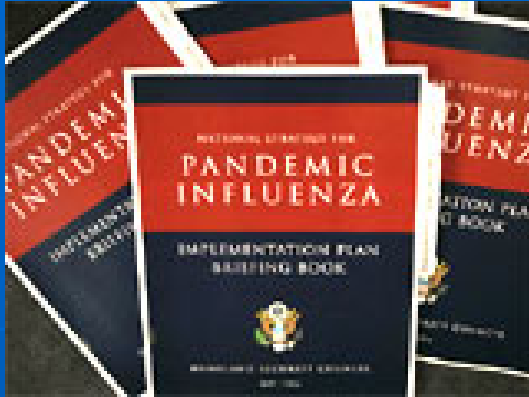
**Respirators** – OSHA rated (N 95 or higher) designed to stop particles  $\geq 0.3$  micron; must have tight fit; may be problematic for persons with health problems

### CDC Guidance

Very little is known about the benefits of wearing facemasks or respirators to help control the spread of influenza in community settings; there is no proof of effectiveness

In combination with other actions, may prevent spread of influenza

Use a N 95 respirator if caring for pandemic flu patient at home or close contact with sick people in a pandemic



# DOE's Pandemic Effort

DOE's Biological Event Monitoring Team provides pandemic planning guidance to:

1. Protect the health of employees
2. Maintain essential function during times of significant absenteeism
3. Support the Federal response (sustain infrastructure and mitigate impact to the economy and the functioning of society)
4. Communicate guidance to stakeholders

## Biological Event Monitoring Team Working Group

- Evaluates infectious disease threats
- Formulates recommendations to protect the health of DOE employees and the mission
- Promotes worker health education
- Coordinates the Department's response related to health issues



## BEMT Working Group Pandemic Planning Assumptions

- Pandemic outbreaks may include up to 3 “waves” lasting 6 to 8 weeks separated by months. Think long terms months vs. days
- Absenteeism may run as high as 40% across the complex. This includes ill employees and those that serve as caregivers or live with exposed individuals
- Protect employees from disease, especially those at high risk (pregnant women, immuno-supressed, others)
- Normal activities or operations may be disrupted due to interruption of deliveries, supplies, transportation, utilities
- Medical response capabilities may be overwhelmed; limited access to vaccines, anti-viral meds



## Onset of A Contagious Disease

An **employee** should:

- keep supervisor informed of any contagious disease in home and stay home
- if ill, see physician; if diagnosed as suspect or having the illness, report that to their supervisor
- be prepared to telework
- maintain current emergency contact information in ESS
- prepare your families (see "A Federal Employees Family Preparedness Guide" on [www.opm.gov](http://www.opm.gov))



## Onset of A Contagious Disease

### A supervisor should:

- keep in contact with employees who have reported a contagious disease in their home
- report diagnosed suspected or confirmed cases to:
  - senior management chain
  - human resources staff (in HQs, Admin staff)





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[www.flu.gov](http://www.flu.gov)

[www.hss.energy.gov/healthsafety/pandemic.html](http://www.hss.energy.gov/healthsafety/pandemic.html)