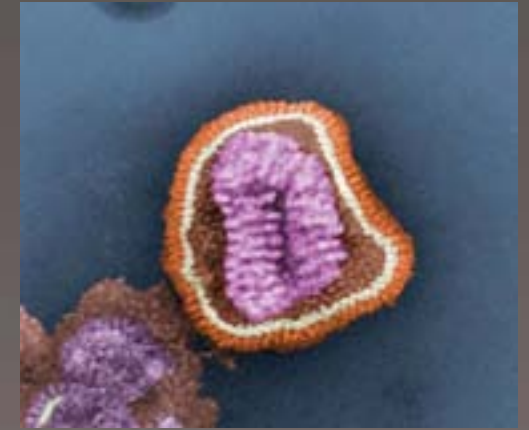


Community Education Series: Novel H1N1 Influenza

Marie Cross Ostoyich, RN, MS, CDE
Director, Greene County Public Health



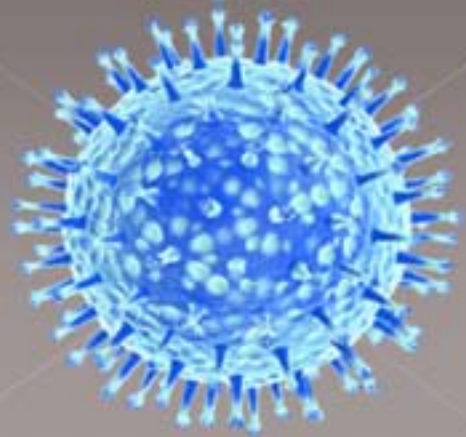
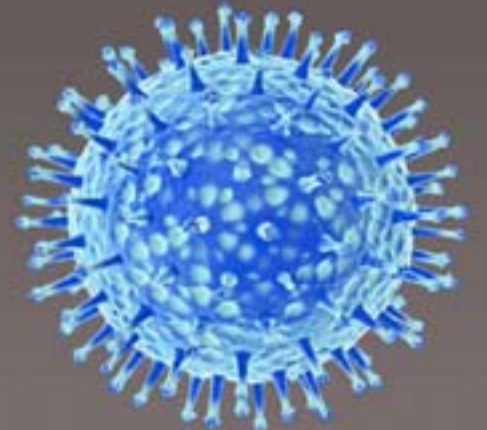
Influenza: What is it?



- A viral disease
 - › Contagious respiratory illness
- Affects millions of people worldwide
- Three types; A, B, C
- Types A & B cause major outbreaks each year
- Annual outbreaks from late fall- early spring

Influenza: Transmission & Infectiveness

- ① Person-person transmission
 - › coughing, sneezing
- ① Infectious Period
 - › 1 day *prior to* symptoms & 5-7 days after becoming sick



Symptoms of Seasonal Flu

- fever (usually high)
- tiredness (can be extreme)
- headache
- dry cough
- sore throat
- runny or stuffy nose
- muscle aches



Impact of Seasonal Flu in the United States

- Each Year in the United States:
 - > 5 to 20 percent of the population get the flu
 - > More than 200,000 people are hospitalized from flu-related complications
 - > About 36,000 people die from flu-related causes



The Impact of Seasonal Flu in the US, Annual

Impact measurement	Estimate
Cases, #	25-50 million
Days of illness	100-200 million
Days of work and school loss	Tens of millions
Hospitalizations, #	85,000-550,000
Deaths, #	34,000-51,000
Cost	Billions of dollars

Source- Journal of Infectious Diseases, 2006

Seasonal Flu Vaccine

- Does NOT undergo clinical trials
- Based on international surveillance & scientific estimation
- Vaccine Components
 - > A virus (H3N2)
 - > Regular seasonal A virus (H1N1)- NOT NOVEL H1N1
 - > B virus



Seasonal Flu- Vaccine Options

- Trivalent inactivated (not-live) virus vaccine
 - > Intramuscular injection (shot)
- Live attenuated virus vaccine
 - > Intranasal spray
 - > Healthy people, ages 2-49



Flu Vaccine Production Process

Egg delivery and receipt at CSL

Visual inspection of eggs to ensure suitability for production use

Inoculation with virus and incubation

Harvest, clarification, and concentration

Inactivation of virus

Virus splitting and purification

Combination of strains and dilution to vaccine strength

Filling, inspection, labeling, and packaging

Quality control and assurance

Embryonated eggs at 10 to 12 days being inoculated by automated machinery. 1st larger needle (about 1 mm diameter) punches a hole in a shell and 2nd smaller needle injects a virus into the albumen cavity of the egg followed by incubation for 2 to 3 days. It takes less than 10 seconds to inoculate a row of 4 eggs.
Courtesy: Solvay

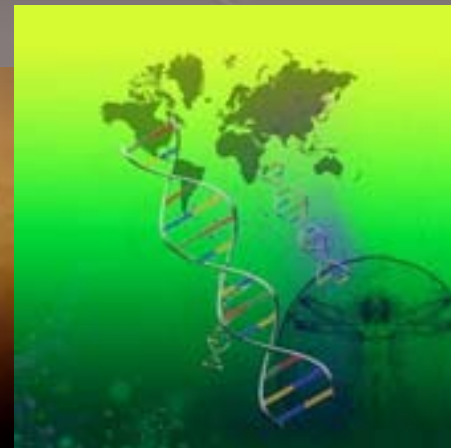


Eggs being candied to evaluate their quality: left – healthy egg – unhealthy one to be removed.
Courtesy: Solvay



What is Pandemic Influenza?

- Pandemic influenza is a global outbreak of disease that occurs when a new influenza A virus appears in humans
- Spreads easily from person to person worldwide because we have no built-up immunity



Influenza Pandemics 20th Century



Credit: US National Museum of Health and Medicine

1918: "Spanish Flu"
A(H1N1)

20-40 m deaths

675,000 US deaths



1957: "Asian Flu"
A(H2N2)

1-4 m deaths

70,000 US deaths



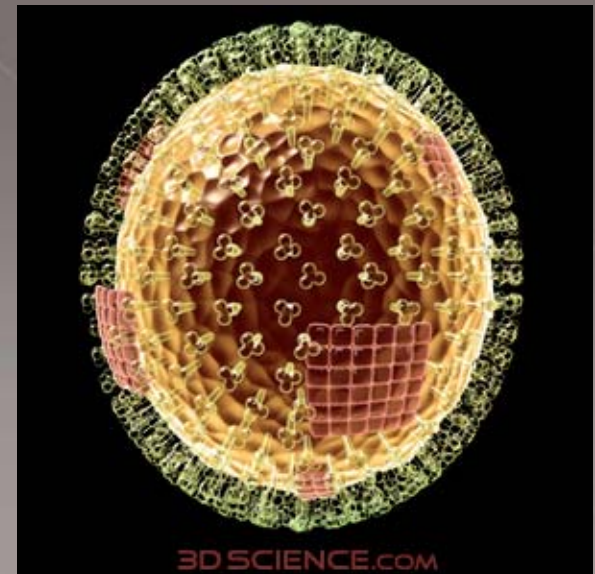
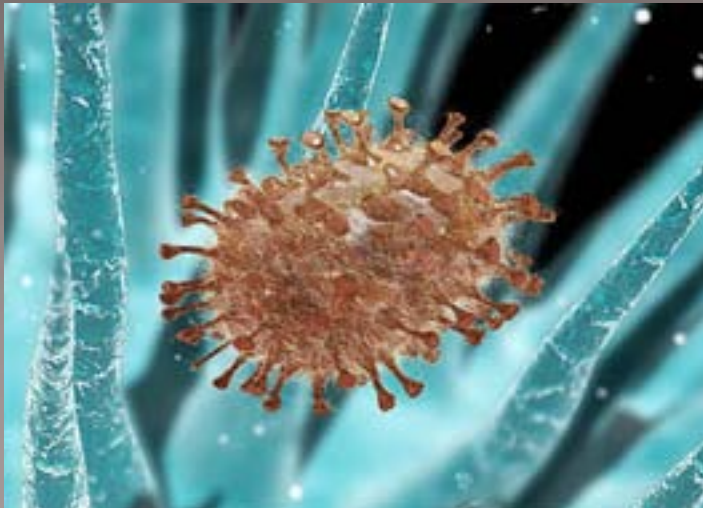
1968: "Hong Kong Flu"
A(H3N2)

1-4 m deaths

34,000 US deaths

Novel H1N1 (Swine) Influenza

- What is H1N1?
 - A new influenza virus causing illness in humans
 - First detected in the US in April 2009
 - It has genes from flu viruses common to Asian and European pigs



Novel H1N1 Influenza

- How long are people infectious?
 - > Same as Seasonal Flu- 1 day before symptoms & 5-7 days after becoming ill
- How are people infected?
 - > Same as Seasonal Flu



Signs and Symptoms

- Symptoms are similar to seasonal influenza:
 - > Fever
 - > Cough
 - > Runny nose
 - > Muscle pain
 - > Sore throat
 - > Nausea
 - > Vomiting
 - > Diarrhea



Preventative & Infection Control Measures

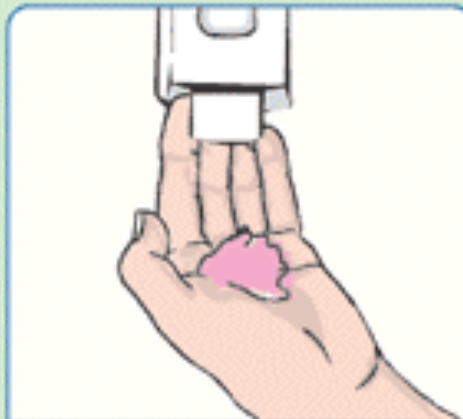
- Hand washing
 - > Soap & Water
 - > Alcohol-based hand sanitizer
 - At least 60% alcohol
- Cough Etiquette
- Stay Home if Sick
- Follow Social Distancing Measures



FIGHT GERMS BY WASHING YOUR HANDS!



1 Wet your hands



2 Soap



3 Lather and scrub - 20 sec



4 Rinse - 10 sec



5 Turn off tap



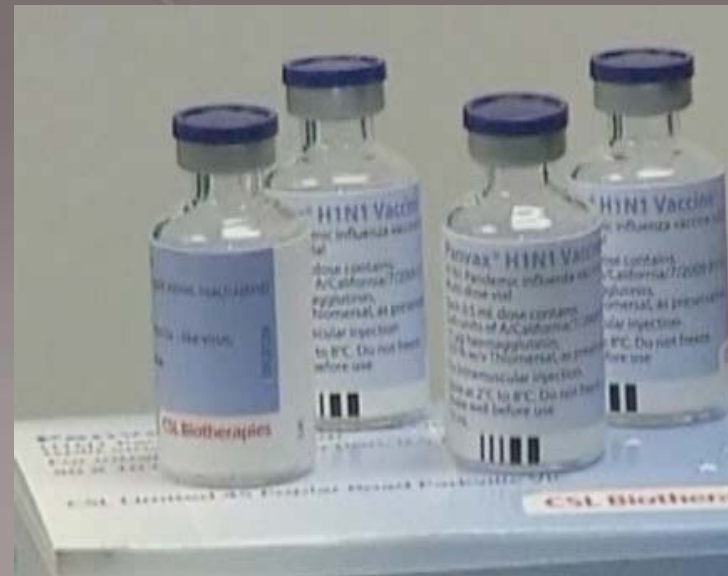
6 Dry your hands

DONT FORGET TO WASH:

- between your fingers
- under your nails
- the tops of your hands

Novel H1N1 Influenza Vaccine

- Approved by Food & Drug Administration
 - Flu Mist & Flu Shot
 - 2 doses for children 9 & under
- Clinical Trials by Manufacturers & National Institute of Allergy & Infectious Diseases (Aug 2009)



What is in the Flu Vaccine?

- Hemagglutinin of influenza A/California/07/2009 H1N1
- Polyethylene glycol p-isooctylphenyl ether
- Formaldehyde
- Thimersol
- Sucrose

Conversion:

1gram (g)=1/4 teaspoon, 1 microgram (mcg)= 1,000,000 g

Component	Use in Vaccine	Amount in Vaccine	Amount in Common Products/Foods
Formaldehyde	By-product of vaccine production process	<100 mcg	Emission in cigarette smoke-78-283 mcg/cigarette Other sources- ham, instant coffee, Italian cheeses
Polyethylene glycol p-isooctylphenyl ether	Chemically disrupts the virus	<.003 mcg	Non-hazardous detergents & emulsifiers
Mercury (thimerosal)	Preservative	25mcg (multi-dose vials only)	6 oz can of tuna-52 mcg mercury
Sucrose	Keep vaccine effective in storage	.3 mcg	Table sugar (1 packet= 1g), Lucky Charms (1 serving=14 g)

Who Should Get the H1N1 Vaccine?

○ Priority Groups

- › Pregnant women
- › Household contacts & caregivers for children under 6 months
- › Healthcare and emergency medical personnel
- › All people 6 months-24 years of age
- › Persons 25-64 with underlying/chronic medical conditions
 - Asthma, Diabetes, Immunosuppressed



Vaccine Distribution

- Coordinated through local health department
- Push out to providers- contact “medical home” first
- Potential school-based clinics by public health



Fact or Fiction # 1

Myth: The flu shot causes the flu

Fact: The flu shot uses dead virus components and cannot cause the flu. However, it usually takes 2 weeks to develop immunity so some people may get the flu after receiving the shot, before their immune response to the flu strain has developed



Fact or Fiction #2

Myth: Seasonal flu vaccine will protect against 2009 H1N1 flu

Fact: The seasonal flu vaccine offers no protection from 2009 H1N1. Although the seasonal flu vaccine contains an H1N1 viral strain, it is not the same as the novel H1N1 strain that is circulating.



Fact or Fiction #3

Myth: The flu shot does not work

Fact: Scientific studies show that the flu shot is 70-90% effective



Fact or Fiction #4



- Myth: The 2009 H1N1 vaccine has not been tested enough.
- Fact: H1N1 vaccine production follows the same process as production for seasonal flu vaccine: a process that has been perfected over the past 30 years. Also, clinical trials have been conducted on H1N1 vaccine, but are not conducted for the seasonal flu vaccine.

Fact or Fiction #5



Myth: The last mass vaccination campaign for swine flu (1976) caused health problems for people

Fact: Despite public belief that many people became ill after receiving the swine flu vaccine in 1976, a scientific review concluded that the vaccine caused 1 extra case of Guillen Barre Syndrome for every 100,000 persons immunized

Informational Resources

- New York State Department of Health
 - > <http://www.health.state.ny.us/diseases/communicable/influenza/h1n1/>
- Centers For Disease Control
 - > <http://www.cdc.gov/h1n1flu/>
- Greene County Public Health
 - > <http://www.greenegov.com/departments/publichealth/index.htm>
- Health & Human Services
 - > <http://www.flu.gov/>

QUESTIONS

