SWINE & PANDEMIC INFLUENZA MINIMIZING RISKS

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Contents

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Swine Influenza

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What is Swine Influenza?

- A virus causing a contagious respiratory disease that primarily impacts pigs
  - Caused by an influenza A virus, classically H1N1
  - Other strains can also be involved (H1N2, H3N2 and H3N1).
- Different from the “avian flu” virus of several years ago
- Swine can become infected by both avian (bird) and human strains of influenza
- If pigs are infected with both human and swine strains, those strains may combine to create a strain more easily transmitted among humans

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Source: http://www.who.int/csr/swine_flu/swine_flu_faq.pdf

Swine Flu Outbreaks Have Occurred

- Periodically reported around the world
- Most cases occur in people who have contact with pigs
  - Many pigs are routinely vaccinated against swine flu
- Not all human cases have required contact with pigs
  - 2009 outbreak is an example

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2009 Swine Flu Outbreak

- Epicenter = Mexico
- Confirmed cases in US, Canada, Europe, New Zealand, and elsewhere
- 91 cases have been confirmed in the US, with 1 fatality
  - As of April 29, at 11am, EDT
- In Mexico, there are 26 confirmed cases and 7 confirmed deaths
  - As of April 28, 2009
  - There may be over 1,300 suspect cases and 100 deaths
- Suggestion to call it “North American Flu”

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World Health Organization Raised the Pandemic Threat Level to Phase 5 on April 29, 2009

- What does this mean?
  - Human-to-human spread of the virus into at least two countries in one WHO region is occurring.
  - While most countries will not be affected at this stage, declaration of Phase 5 is a strong signal that a pandemic is imminent.
  - The time to finalize the organization, communication, and implementation of the planned mitigation measures is short.

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Source: http://www.who.int/mediacentre/news/statements/2009/h1n1_20090427/en/index.html

2009 Swine Flu Cases

- Symptoms = typical of seasonal influenza, including fever (usually high), headache, extreme fatigue, dry cough, sore throat and chills
- Some reported diarrhea and vomiting
- Rare cases, the disease can progress to pneumonia and respiratory failure, leading to death

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Transmission of 2009 Swine Flu

- Typically through direct contact with infected pigs, infected people or contaminated surfaces
  - Contact with pigs is not associated with 2009 outbreak!
- Not transmitted though properly cooked pork or pig meat
- Primary mode of transmission in this outbreak is still under investigation

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Control of Swine Flu in Humans

- Seasonal influenza vaccine not likely to protect humans from the H1N1 swine flu strain
- Antiviral drugs oseltamivir (Tamiflu™) and zanamivir can lessen the symptoms of this virus
- Following precautions for **seasonal influenza** to control spread of disease:
  - Vigilant personal hand hygiene and use of alcohol based hand sanitizers
  - Additional infection control precautions
    - Thorough disinfection of contaminated surfaces in areas with ill individuals
    - Cough etiquette
    - Proper hand hygiene

Source: http://www.cdc.gov/swineflu/general_info.htm

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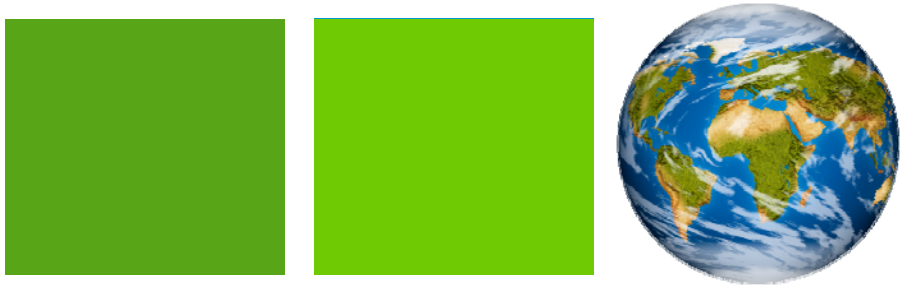

Pandemic

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What is Pandemic Influenza?

A Global Epidemic

- Result from the emergence of a new virus to which the overall population possesses no immunity
- Influenza pandemics are a rare but recurring event (occurred in 1918, 1957 and 1968)

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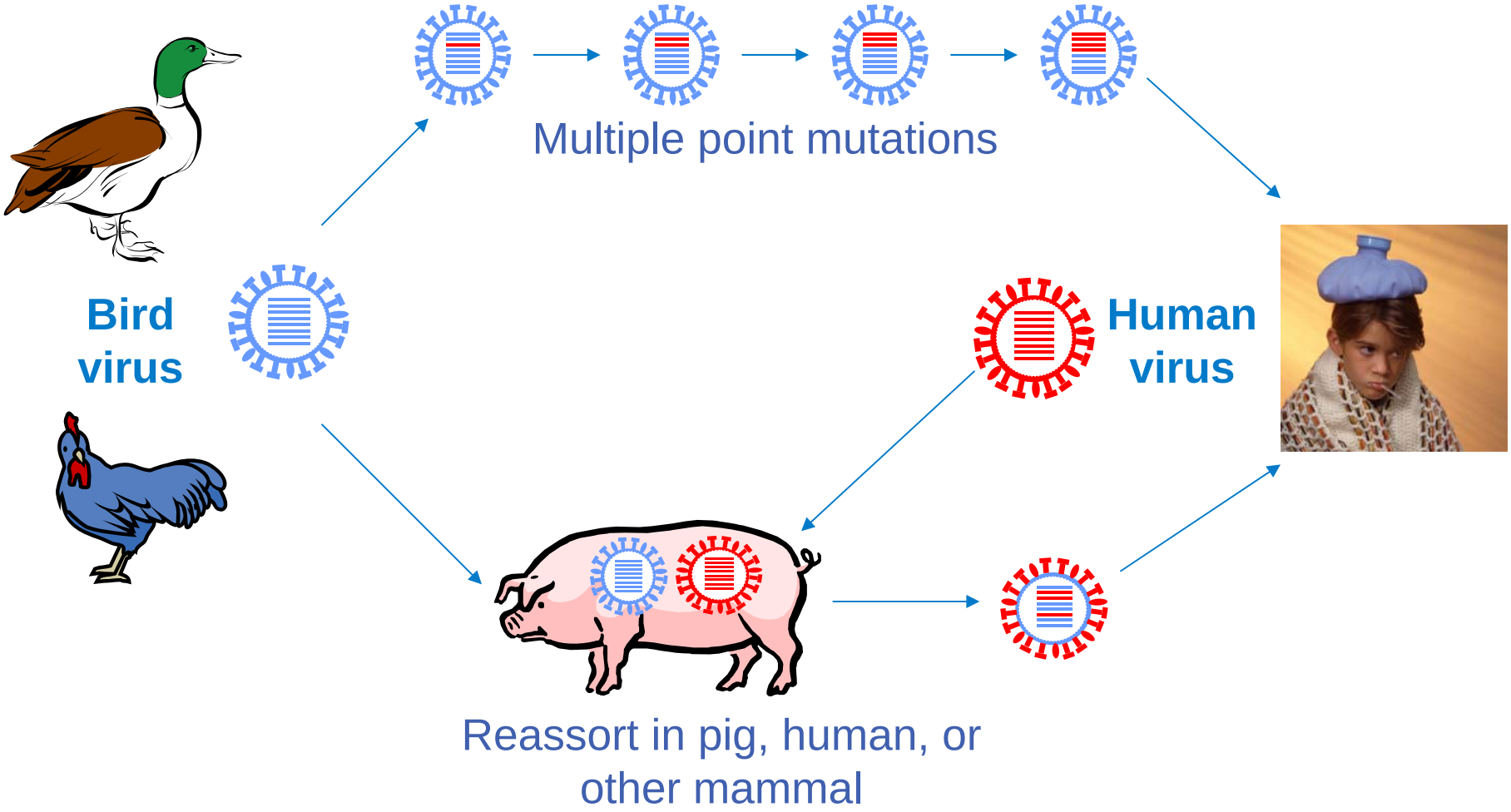
Source: World Health Organization

How Do Viruses Mutate?

Most likely routes



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WHO Influenza Pandemic Phases

Inter-pandemic phase New virus in animals, no human cases	Low risk of human cases	1
	Higher risk of human cases	2
Pandemic alert New virus causes human cases	No or very limited human-to-human transmission	3
	Evidence of increased human-to-human transmission	4
	Evidence of significant human-to-human transmission	5
Pandemic	Efficient and sustained human-to-human transmission	6

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http://www.who.int/csr/resources/publications/influenza/GIP_2005_5Eweb.pdf

Why The Concern About Pandemic Influenza?

- Influenza pandemics are inevitable: naturally recur at cyclical intervals
- 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 the spread of a pandemic and its spread around the world
- Outbreaks occur simultaneously in many areas
- Impact can last for weeks to months

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Seasonal Human Influenza

What is Human Influenza?

- A respiratory infection with fever and often respiratory complications
  - More frequent in immunocompromised and elderly populations
- It is transmitted human-to-human
- Each year a flu vaccine cocktail is custom - assembled for the expected “flu” strains
- Each year, approximately 36,000 people die from the flu

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Source: CDC 2004 http://www.cdc.gov/mmwrhtml/rr54e713a1.htm

When is Human Influenza Transmitted?

- One day prior to showing symptoms
- Up to seven days after symptoms first appear
- Most infectious during first three days of illness

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How is Influenza Transmitted?

- Droplet transmission
  - Large droplets generated by sneezing, coughing or talking
  - Occurs over a distance of 3-4 feet
- Contact transmission
  - Direct
    - Touching an infected human
  - Indirect
    - Touching an object that an infected human touched or contaminated with droplets
- Airborne transmission
  - Due to small droplet nuclei
  - Occurs over many feet

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How Long Does Influenza Virus Survive?

- Stainless steel and plastic
  - Survived 24-48 hours
  - Transferred to hands up to 24 hours
- Cloth, paper, tissues
  - Survived 8-12 hours
  - Transferred to hands up to 15 minutes
- Hands
  - Survived up to 5 minutes

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Source: Bean et al. 1982. Survival of influenza viruses on environmental surfaces. J. Infect Dis. 146(1):47-51.

Prevention

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Interventions in Pork Preparation

Cooking

Cooking all parts of product at or above 160°F (71°C) will inactivate the virus

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How Do Seasonal and Pandemic Human Influenza Differ?

Differences

- Initially no human vaccine or natural immunity
- Potentially higher virulence, affecting broader age groups
- Potentially more people infective

Similarities

- Personal hygiene is critical
- Same products
- Same procedures
- Same mode of transmission
- Similar survival

Net result:
Increase frequency of cleaning and disinfection

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General Influenza Prevention Methods

- Medical
  - Vaccination
  - Antiviral medications
    - Must start within 2 days of illness
    - 5-day treatment

→ Contact your local health care provider

- Non-medical
  - Personal hygiene
    - Cough etiquette
    - Hand washing
    - Hand sanitation (Alcohol rub/gel)
  - Hard surface cleaning and disinfecting
  - Other steps to minimize risks

→ Additional information follows

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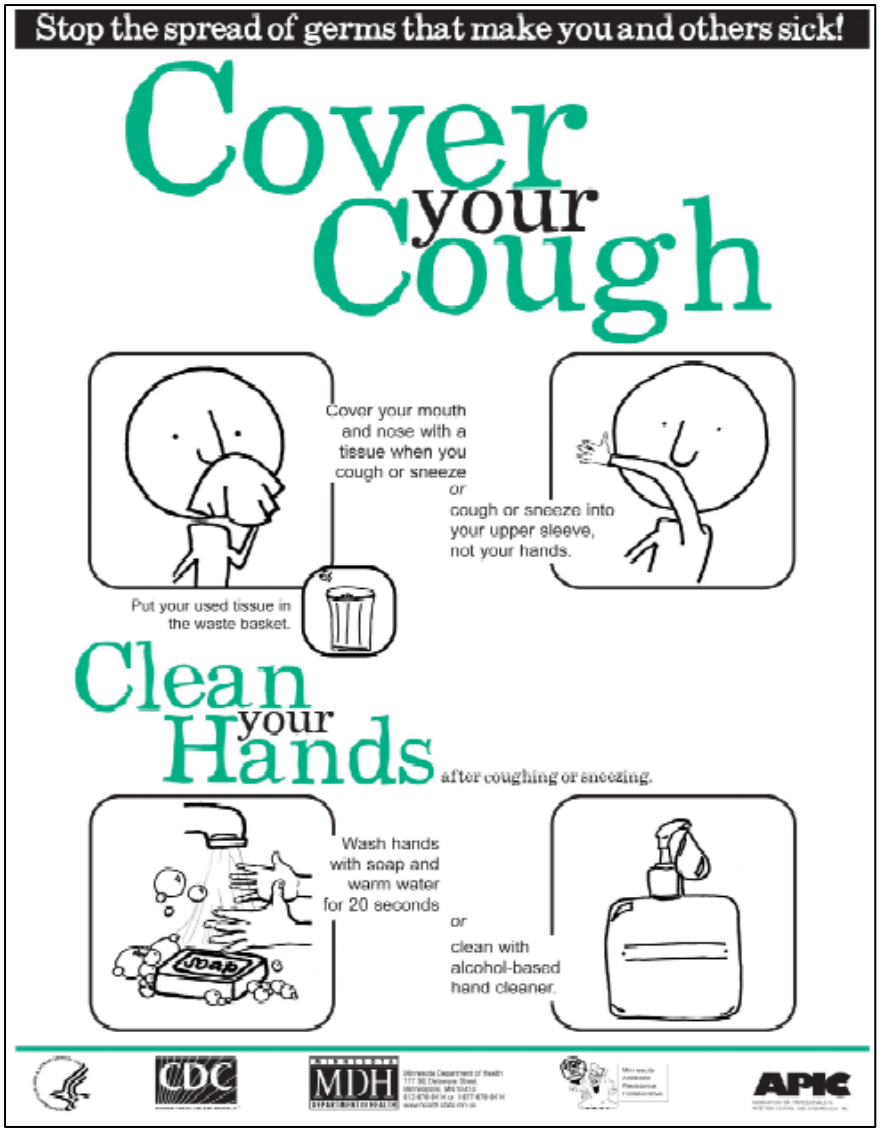
Cough Etiquette

- Posters available in several languages

http://www.cdc.gov/flu/protect/covercough.htm



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General Influenza Prevention

Personal Hygiene –

Proper Hand Washing Procedures

- Wet hand with warm water
- Apply soap to hands
- Rub hands together vigorously for 15 – 20 seconds, covering all surfaces of hands and fingers
- Rinse hands with warm water
- Thoroughly dry hands with disposable towel or air blower
- Use towel to turn off faucet

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General Influenza Prevention

Personal Hygiene –
Use of Hand Sanitizer

- Apply product to palm
- Rub hands together covering all surfaces of hands and fingers
- Rub until dry (15-20 seconds)
- Use on visibly clean hands
- Consider offering in public areas

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General Influenza Prevention

Hard Surface Cleaning and Disinfecting

- CLEAN
  - Organic material could protect the virus from sanitizers
  - Removal of the organic material is a key part of effective disinfection
- RINSE
  - Detergents should be rinsed off to avoid dilution or inactivation of disinfectant
- DISINFECT
  - Follow directions for use on the product label of a properly registered disinfectant which has claims of effectiveness against influenza viruses listed on the label

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General Influenza Prevention

Hard Surface Disinfection – Procedure Overview

- Wipe down frequently touched surfaces with an properly registered disinfectant
  - Light and air control switches
  - Faucets and toilet flush levers
  - Door knobs, TV and radio controls and telephones
  - Public restroom doors
  - Other surfaces as needed
- Disinfect all surfaces in the bathroom that may have contacted respiratory secretions, urine or feces according to standard infection control procedures
- *Carefully read and follow all product directions according to the product label*

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General Influenza Prevention

Personal Protective Equipment

- Wear disposable gloves while cleaning and disinfecting
- Discard gloves after use
- Wash hands frequently before and after gloving, with soap and water and/or use an alcohol based hand sanitizer
- Masks advised for direct contact with influenza patients in healthcare settings
- Additional equipment (respirators, protective clothing, etc.) advised when splashing or aerosol of known infective material is likely

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General Influenza Prevention

Other Steps to Minimize Risks

- Wash your hands often
- Avoid touching eyes, nose and mouth
- Avoid close contact
  - Avoid contact with people who are sick
  - Keep distance from others to protect from getting sick
- Cover your mouth and nose when coughing or sneezing
- Stay home when you are sick
  - With cold or flu symptoms, stay home and get plenty of rest
  - Check with your local health care provider as needed

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Additional Resources

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Additional Resources

- www.ecolab.com
- Ecolab brings you the most up to date information with links to the WHO, CDC and other news sites
- Ecolab representatives can provide site specific procedures for influenza mitigation and pandemic preparedness suggestions

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Notations

- The information contained in this presentation is in accordance with U.S. Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) recommendations.

- These recommendations offered are as a set of best practices to help lower the probability of contracting influenza type viruses.

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