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2009 H1N1 Flu At-A-Glance

WRITTEN BY
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Introduction

The 2009 H1N1, a new influenza virus, was first detected in the U.S. in April 2009 and is spreading from person-to-person worldwide, probably in much the same way that the regular flu spreads. It is sometimes called the “swine flu” because laboratory testing showed that many of the genes in this new virus were very similar to influenza viruses that normally occur in pigs in North America. Further study has shown, however, that this new virus is quite different from what normally circulates in North American pigs.

Like all influenza viruses, swine flu viruses change constantly. When influenza viruses from different species infect pigs, the viruses can reassort (i.e., swap genes) and new viruses that are a mix of swine, human, and/or avian influenza viruses can emerge. Over the years, different variations of swine flu viruses have emerged.

On September 22, 2009, the CDC updated its recommendations for the use of influenza antiviral medicines to provide additional guidance for prescribing clinicians in the treatment and prevention of influenza during the 2009–2010 flu season. Scientists estimate that up to 80% of all infections are transmitted by hands that have not been washed often or well enough. Hand washing may be the single most important act to help stop the spread of infection and stay healthy.

Seasonal Flu vs the H1N1 Flu

Seasonal flu can cause mild to severe illness and at times can lead to death. Each year in the U.S., an average of 36,000 people die and more than 200,000 people hospitalized from flu-related causes. Of those hospitalized, 20,000 are children younger than 5 years old. Over 90% of deaths and about 60% of hospitalizations occur in people older than 65.

To date, the H1N1 flu has caused the greatest disease burden in people younger than 25 years of age, with fewer cases and deaths reported in people older than 64 years old (unusual when compared with seasonal flu). Pregnancy and other previously recognized high-risk medical conditions (e.g., asthma, diabetes, suppressed immune systems, heart disease, kidney disease, neurocognitive and neuromuscular disorders) from seasonal influenza appear to be associated with increased risk of complications from the 2009 H1N1.

SYMPTOMS OF THE 2009 H1N1 FLU

- Body aches
- Chills
- Cough
- Diarrhea (in some)
- Fatigue
- Fever (in some)
- Headache
- Runny or stuffy nose
- Sore throat
- Vomiting (in some)

WHAT TO DO TO STAY HEALTHY AND PREVENT THE SPREAD OF THE FLU

- Avoid touching the eyes, nose, or mouth (germs spread that way).
- Cough or sneeze into your elbow. *Note: Flu is thought to spread mainly person to person through coughing or sneezing of infected people.*
- Cover your nose and mouth with a tissue when you cough or sneeze. *Note: Discard the tissue in the trash after it is used.*
- Encourage healthy behaviors; eating well, sleeping well, being outside.
- Follow public health advice regarding school closures, avoiding crowds and other social distancing measures.
- Stay home if you get sick (for at least 24 hours after fever is gone, without using an antipyretic medication). *Note: Exception would be for medical care or for other necessities.*
- Stay informed.
- Try to avoid close contact with sick people.
- Wash hands often with soap and water (or alcohol-based hand cleaners) for at least 15 to 20 seconds, especially after coughing or sneezing.

Flu Transmission

Infected individuals can spread the flu and infect others from 1 day before getting sick to 5 to 7 days afterward. It may be longer in some individuals, especially children and people with weakened immune systems and in people infected with the new H1N1 virus.

Influenza virus can survive on environmental surfaces and, after being deposited, the germs can infect a person for 2 to 8 hours.

Influenza virus is destroyed by heat (167°F to 212°F [75°C to 100°C]). Also, several chemical germicides, including chlorine (bleach), hydrogen peroxide, detergents (soap), iodophors (iodine-based antiseptics), and alcohols are effective against human influenza viruses if used in proper concentration for a sufficient length of time.

You cannot get H1N1 virus from eating pork or pork products. Eating properly handled and cooked pork products is safe.

Tap water treated by conventional disinfection processes does not likely pose a risk for transmission of influenza viruses. Recreational water sources, including swimming pools, spas, water parks, interactive fountains, and other treated recreational water venues that have been treated at CDC-recommended disinfectant levels do not likely pose a risk for transmission of influenza viruses.

Employees who are well but who have an ill family member at home with 2009 H1N1 flu can go to work as usual but should monitor their health every day and take everyday precautions.

Vaccines

The seasonal flu vaccine is not expected to protect against the 2009 H1N1 flu. The swine flu vaccine is available.

Preventative Steps

- Clean surfaces of bedside tables, bathroom, kitchen counters, and toys by wiping them down with a household disinfectant according to the directions on the product label.
- Dispose of tissues and other disposable items in the trash. *Note: Wash with soap and water after handling contaminated items and trash.*
- Use respiratory protection if working in the occupational healthcare setting.

Treatment with Antiviral Drugs

Most people becoming ill with H1N1 recover without requiring medical treatment. Currently, circulating 2009 H1N1 viruses are susceptible to oseltamivir (Tamiflu) and zanamivir (Relenza), but resistant to amantadine. Influenza antiviral drugs decrease the ability of flu viruses to reproduce and are about 70% to 90% effective.

Treatment: Oseltamivir or zanamivir is recommended for all people with suspected or

confirmed influenza who require hospitalization; it is not recommended for people who are not at higher risk for complications or do not have severe influenza. Prophylaxis treatment should be reserved for people who have been exposed to influenza and are at higher risk for influenza-related complications.

Duration of Treatment: A 5-day use of antiviral drugs is recommended, which should be started within 2 days after becoming sick to: reduce the severity of flu symptoms; shorten sickness time by 1 or 2 days; possibly prevent *serious* flu complications.

Duration of Chemoprophylaxis Treatment: Post-exposure use of 10 days after the last known exposure is recommended.

Children, Antiviral Drugs, and Flu Therapy

Oseltamivir is available as an oral suspension and zanamivir is available as an inhaled powder. If the liquid formulation of Tamiflu is unavailable, a compounded oral suspension from Tamiflu 75-mg capsules can be compounded by a pharmacist as an alternative.

Tricky Dosing with Liquid Tamiflu for Kids

Tamiflu for Oral Suspension: Potential Medication Errors

A Public Health Alert issued by the FDA notified prescribers and pharmacists about potential dosing errors with Tamiflu for Oral Suspension. While U.S. healthcare providers usually write prescriptions for liquid medicines in milliliters (mL) or teaspoons, Tamiflu is dosed in milligrams (mg) and its dosing dispenser is marked in 30, 45, and 60 mg. Therefore, healthcare providers should write doses of Tamiflu in mg. Pharmacists will ensure that the units of measure on the prescription instructions match the dosing device provided with the drug.

New links (see resources) provide information on emergency use in infants less than 1 year of age and directions to pharmacists on emergency compounding of oral suspension from capsules. (Updated 09/25/2009)

Emergency Compounding of an Oral Suspension from Tamiflu 75-mg Capsules (Final Concentration 15 mg/mL)

Commercially manufactured Tamiflu for Oral Suspension (12 mg/mL) is the preferred product for pediatric and adult patients who have difficulty swallowing capsules or where lower doses are needed. If Tamiflu for Oral Suspension is unavailable, pharmacists may compound a 15-mg/mL suspension from Tamiflu 75-mg capsules by using cherry syrup or Ora-Sweet Sugar-Free. The approved compounding procedure is included in the professional prescribing information.

TARGET GROUPS TO GET H1N1 FLU VACCINE

- Healthcare and emergency medical services personnel
- People ages 25 to 64 (at higher risk because of chronic health disorders or compromised immune systems)
- People living with and caring for children younger than 6 months of age
- Persons between 6 months and 24 years old
- Pregnant women
- Residents of nursing homes and other chronic-care facilities

WHAT THE CAREGIVER SHOULD DO

- Avoid being face to face with the sick person.
- Avoid hugging dirty laundry when carrying it, and clean hands with soap and water immediately after handling dirty laundry.
- Check with the healthcare provider about any special care the person being cared for may need if they are pregnant or have a health condition such as diabetes, heart disease, asthma, or emphysema.
- Check with the healthcare provider about whether the person being cared for should take antiviral medications.
- Clean hands with soap and water after touching the sick person or when handling used tissues or laundry.
- Clean hands with soap and water or an alcohol-based hand sanitizer after removing facemask.
- Dispose of used facemasks. *Note: If a reusable fabric facemask is used, it should be laundered and tumble-dried in a hot dryer.*
- Minimize contact time with the sick person.
- Place the chin of a sick small child on your shoulder when holding them to prevent them from coughing in your face.
- Talk to your healthcare provider about taking antiviral medication to prevent getting the flu.
- Wash linens (bed sheets and towels) using household laundry soap; tumble-dry the linens on a hot setting.

WARNING SIGNS THAT EMERGENCY MEDICAL CARE SHOULD BE SOUGHT

- Difficulty breathing or chest pain
- Less responsive than normal or confusion
- Purple or blue discoloration of the lips
- Seizures
- Signs of dehydration such as dizziness when standing, absence of urination, or in infants, a lack of tears when they cry
- Vomiting and unable to keep liquids down

EMERGENCY WARNING SIGNS IN CHILDREN REQUIRING URGENT MEDICAL ATTENTION

- Bluish or gray skin color
- Fast or troubled breathing
- Flu-like symptoms improve but then return with fever and worse cough
- Irritability to the point that the child does not want to be held
- Fluid intake insufficient
- Vomiting that is severe or persistent
- Waking up is difficult or a lack of interaction

Resources

- www.cdc.gov/H1N1FLU. Accessed September 26, 2009.
- www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm183714.htm. Accessed September 26, 2009.
- <http://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=11065>. Accessed September 26, 2009.

EXAMPLE COMPOUNDED MEDICATIONS FOR THE FLU

Antinauseant and Antiemetic

Rx
Promethazine in Pluronic Lecithin Organogel

Antiviral Drugs

Rx
Tamiflu Oral Liquid

Pain and Fever

Rx
Acetaminophen Lollipops

Rx
Acetaminophen Oral Liquid (in different concentrations)

Rx
Acetaminophen 325-mg and Promethazine 20-mg Suppositories

Rx
Ibuprofen 100-mg Troches

Rx
Ibuprofen Oral Suspension (in different concentrations)

Rx
Ibuprofen 2% Topical Gel

EMERGENCY WARNING SIGNS IN ADULTS REQUIRING URGENT MEDICAL ATTENTION

- Breathing is difficult or shortness of breath
- Confusion
- Dizziness that is sudden
- Flu-like symptoms improve but then return with fever and worse cough
- Pain or pressure in the chest or abdomen
- Vomiting that is severe or persistent

WHAT PEOPLE BEING CARED FOR AT HOME SHOULD DO

- Don't allow visitors, other than caregivers, use of your telephone.
- Drink clear fluids (water, broth, sports drinks; electrolyte beverages for infants).
- Have only one caregiver in the home if possible. *Note: The caregiver should not be a high-risk individual.*
- Keep away from others as much as possible.
- Keep sick person in a room separate from common areas of the house. *Note: If necessary to go to common areas, wear a facemask (if available and tolerable).*
- Maintain good ventilation in shared areas.
- Stay at least 6 feet away from other household members, if possible.
- Use a separate bathroom, if possible. *Note: Bathroom should be cleaned daily with household disinfectant.*
- Use paper towels. *Note: If cloth towels must be used, have separate cloth towels for each individual.*
- Wear a facemask (if available and tolerable) if it is necessary to leave home or when sharing common spaces with other household members to prevent spreading the virus.