

Gavin Newsom Mayor Communicable Disease Control and Prevention 101 Grove Street, Room 408 San Francisco, CA 94102 Phone: (415) 554-2830 Fax: (415) 554-2848 www.sfdph.org/cdcp

# HEALTH ALERT-NOVEL INFLUENZA A H1N1 (SWINE) VIRUS

# Wednesday, June 24, 2009

Influenza activity in San Francisco (SF) is increasing. Clinicians should expect visits from significant numbers of patients with influenza-like illness over the upcoming days and weeks. Currently, most confirmed influenza infections in northern California are due to novel influenza A H1N1 (swine) virus. The symptoms and severity of swine flu infections are similar to seasonal flu. Although most cases have been mild, additional hospitalizations and some deaths are anticipated during the upcoming days and weeks. Diagnostic distinction between seasonal and swine flu does not alter the appropriate care of patients with influenza-like illness. Clinicians should treat patients as they would treat cases of seasonal flu. Clinicians are encouraged to treat persons with influenza-like illness with underlying conditions that increase their risk for severe influenza with antiviral agents. Also, implementing appropriate infection control measures for all patients with fever and respiratory symptoms will decrease the spread of infections. The San Francisco Department of Public Health (SFDPH) requests only limited reporting of influenza-like illness and limited testing. See below for specific details.

# **CONTENTS OF HEALTH ALERT:**

- SITUATIONAL UPDATE
- ACTIONS REQUESTED OF ALL CLINICIANS: INCLUDING TESTING AND REPORTING
- ANTIVIRAL TREATMENT AND CHEMOPROPHYLAXIS
- INFECTION CONTROL PRECAUTIONS
- INTERNATIONAL TRAVEL INFORMATION
- REQUEST FOR CLINICIANS TO BE SENTINEL PROVIDERS FOR INFLUENZA SURVEILLANCE
- **RESOURCES**

Changed sections include: **situational update**, **testing and reporting criteria**, **an explanation of laboratory tests**, **treatment recommendations**, **chemoprophylaxis recommendations** (minor clarifications), **infection control recommendations** (clarification of general precautions and explicit recommendation during collection of nasopharyngeal specimens), **travel info, sentinel provider info** and **resources** (addition of 311 for the public).

Check our website for updates, forms, FAQs and useful links: www.sfcdcp.org/swinefluforproviders.html.

# Situational Update (as of 6/24/09)

Per clinician reports and lab testing requests and results, influenza activity in SF appears to be increasing. Although the Centers for Disease Control (CDC) reports an overall decrease in influenza activity in the US, multiple jurisdictions are experiencing continued influenza activity and some are experiencing increased activity. Local health officials expect to see a significant increase in cases in SF including hospitalized cases, deaths and outbreaks. The dominant strain in northern California during the first two weeks of June was the novel influenza A H1N1 (swine) virus. A small minority of confirmed influenza infections during this time were due to seasonal influenza strains, specifically influenza A H3N2 and influenza B. Seasonal influenza A H1N1 virus, the seasonal flu strain resistant to oseltamivir, has not been detected in northern California recently. Although our understanding of swine flu is evolving, the symptoms and severity still appear to be similar to seasonal flu. The expected increase in severe cases arises from the expected increase in total cases.

**Health Alert**: conveys the highest level of importance; warrants immediate action or attention **Health Advisory**: provides important information for a specific incident or situation; may not require immediate action **Health Update**: provides updated information regarding an incident or situation; unlikely to require immediate action On June 11, the World Health Organization (WHO) raised the worldwide pandemic alert level to Phase 6, indicating that a global pandemic is underway. Because there is already widespread pandemic H1N1 disease in the US, the WHO declaration does not change what the US, California and SF is currently doing. At SFDPH, surveillance, disease control, and other response and preparedness activities are continuing.

The ongoing surveillance goals are to:

- 1. Identify severe disease and contribute information to better understand risk factors for complications,
- 2. Identify cases in long-term care and large group residential facilities, and
- 3. Identify **outbreaks** of cases.

The ongoing disease containment goals are to:

- 4. Slow spread especially within large group residential and institutional settings,
- 5. Slow spread by encouraging healthy habits in the general population.

#### Actions Requested of All Clinicians (updated 6/24/09)

- 1. **Submit respiratory specimens only from the following patients** for PCR testing by the Public Laboratory System (specimens not meeting these criteria will not be tested):
  - a) Patients with influenza-like illness<sup>1</sup> OR
  - b) Patients with influenza A as determined by a rapid diagnostic test

AND who also meet at least one of the following criteria:

- Died
- Hospitalized (if info is available specific criteria will be "hospitalized for > 24 hours")
- Live in a long-term care facility (first cases only will be tested)

For specimen collection/submission instructions go to: <u>www.sfcdcp.org/swinefluforproviders.html</u>

- 2. **Report** to SFDPH Disease Control (415-554-2830):
  - Patients with influenza-like illness<sup>1</sup> who have/are:
    - Died
    - Severely ill (hospitalized and requiring ICU care)
  - A resident of a long-term care or large group residential facility
  - Part of an outbreak<sup>2</sup> of influenza-like illness<sup>1</sup> in an institutional<sup>3</sup> setting
- 3. **Treat** patients with influenza-like illness<sup>1</sup> that are hospitalized and/or at high risk for complications.
- 4. **Provide chemoprophylaxis** to certain close contacts<sup>4</sup> of swine flu cases, as described below.
- 5. **Implement** infection control precautions as described below.
- 6. **Provide** guidance about home care of persons with influenza. SFDPH guidance (including a 2 page document and a 61 page handbook) is available at <u>www.sfcdcp.org/H1N1ill.html</u>

#### Notes & Definitions (updated 6/24/09)

<sup>1</sup> Influenza-like illness is defined as fever (>37.8°C or 100°F) and either cough or sore throat.

<sup>2</sup> **Outbreak** is defined as > 10% of people from the same institution with influenza-like illness who have illness onsets within 3 days.

<sup>3</sup> **Institutions** include facilities with household-like living arrangements (e.g., long-term care facility, dormitory, jail, shelter and group residential home) and facilities where people gather for significant amounts of time (e.g., daycare, school, university, and other types of campuses, etc.)

<sup>4</sup> **Close contact** to an ill person is defined as having cared for or lived with an ill person, or having been in a setting where there was a high likelihood of contact with respiratory droplets and/or body fluids of an ill person. Examples of close contact include kissing or embracing, sharing eating or drinking utensils, physical examination, or any other contact between persons likely to result in exposure to respiratory droplets. Close contact typically does not include activities such as walking by an infected person or sitting across from a symptomatic patient in a waiting room or office.

# Testing for Influenza including Tests for Novel Influenza A H1N1 (Swine) Virus (6/24/09)

Rapid influenza antigen tests are widely available to clinicians. Some rapid tests can distinguish between influenza A and B virus types, while others cannot. Test accuracy for seasonal flu can be problematic with rapid antigen tests, with sensitivity and specificity in the 60-80% range compared to viral culture. Sensitivity and specificity in detecting novel influenza A H1N1 (swine) virus is unknown although early data suggest performance worse than with seasonal influenza. Thus when evaluating influenza-like illness, false positive and false negative rapid tests are common. Rapid diagnostic test results can be confirmed with RT-PCR or viral culture. For more info on rapid influenza tests see: http://www.cdc.gov/flu/professionals/diagnosis/rapidlab.htm.

Some clinical labs use immunofluorescence techniques. Although these tests can distinguish between influenza A and B viruses, their sensitivity and specificity in detecting novel influenza A H1N1 (swine) virus is also unknown.

Distinguishing between seasonal influenza A subtypes H1N1 and H3N2, and the novel influenza A H1N1 (swine) virus requires specialized techniques not available at most clinical labs. This specialized testing can be done by the public health lab system on specimens meeting the criteria outlined above.

When testing for novel influenza A H1N1 (swine) virus, the SFDPH Public Health Lab first determines by PCR testing whether the sample is Influenza Type A. Specimens positive for Influenza Type A are further tested by PCR for the Human H1 or the Human H3 virus subtype.

- Those positive for either Human H1 or Human H3 are reported as such.
- Those negative for both Human H1 and Human H3 are considered "**untypeable**" and, if the case meets clinical criteria, a case of novel influenza A H1N1 (swine) virus.

The SFDPH Public Health Lab is currently performing PCR testing one or two times a week.

## Antiviral Treatment for Novel Influenza A H1N1 (Swine) Virus (and seasonal flu) (6/24/09)

Because testing is limited, most cases of swine flu will not be diagnosed. Diagnostic distinction between seasonal and swine flu does not alter the appropriate care of patients with influenza-like illness. Clinicians should treat patients with suspected swine flu as they would treat cases of seasonal flu. Most swine flu cases in the USA have been mild and have not required antiviral treatment. Therefore antiviral treatment is not specifically indicated <u>unless</u> cases are

- 1. hospitalized OR
- 2. at high risk for complications of influenza.

People at high risk for complications include:

- Children age 4 years and younger, especially children younger than age 2 years
- Adults age 65 and over
- Pregnant women
- Residents of nursing homes and other chronic-care facilities.
- Persons with the following conditions:
  - chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological (including sickle cell disease), or metabolic disorders (including diabetes);
  - o immunosuppression, including that caused by medications or by HIV infection;
  - Any condition (e.g., cognitive dysfunction, spinal cord injuries, severe seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration.
  - Obesity (appears to be a risk factor based on preliminary data)
- Persons younger than 19 years of age and receiving long-term aspirin therapy.

Clinicians should consider triaging patients over the phone and should also exercise prudent judgment in prescribing antiviral medicines for patients not meeting the above criteria (i.e., persons with mild influenza-like illness who are not at high risk for complications of influenza). These patients should be encouraged to stay home -until one day after their symptoms have resolved.

Treatment is for 5 days and, if possible, should be initiated within 48 hours of symptom onset.

# Antiviral Post-Exposure Chemoprophylaxis for Novel Flu A H1N1 (Swine) Virus (6/24/09)

Antiviral chemoprophylaxis is *recommended* for:

- 1. Employees and residents of a nursing home or other long-term care facilities experiencing an outbreak of novel influenza A H1N1 (swine) virus.
- 2. Health care workers who were not using personal protective equipment during close contact with a confirmed or probable case of novel influenza A H1N1 (swine) virus during the infectious period of that case (from 1 day before until 7 days after symptoms began).

Antiviral chemoprophylaxis can be *considered* for:

- 1. Household or household-like institutional\* close contacts of a case of novel influenza A H1N1 (swine) virus, who are at high risk for complications of influenza\*\*.
- 2. Patients at high risk for complications who have had close contact with an infectious health care worker with novel influenza A H1N1 (swine) virus.

\* Institutions with household-like living arrangements include group homes, jails, long-term care facilities.

\*\*See list of conditions that place people at high risk for complications on page 3.

Duration of antiviral chemoprophylaxis *post-exposure* is 10 days after the last known exposure to an ill confirmed or probable case. Post-exposure prophylaxis is not necessary if the exposure occurred more than 7 days earlier.

Duration of antiviral chemoprophylaxis for outbreaks is for a minimum of two weeks. If new cases continue to appear, duration may be extended.

## Selection of Antiviral Drugs for Seasonal or Swine Influenza (6/24/09)

Selection of antiviral drugs for treatment or chemoprophylaxis of influenza depends upon:

- Which strains of influenza are circulating in the community;
- Strain-specific resistance to antiviral drugs; and
- The ability of laboratory testing to identify the specific strain infecting a patient

<u>Circulating Strains</u>. The dominant strain circulating in northern California for several weeks is novel influenza A H1N1 (swine) virus. Additional strains include seasonal influenza A H3N2 and influenza B. It is important to note that seasonal influenza A H1N1 has not been detected in northern California for several weeks.

<u>Strain-Specific Resistance</u>. In 2008-09, seasonal H1N1 influenza A was found to be resistant to oseltamivir, but sensitive to zanamivir and the adamantane drugs rimantadine and amantadine. However novel influenza A H1N1 (swine) virus is sensitive to oseltamivir and zanamivir but resistant to the adamantanes. The adamantanes are not active against influenza B strains. See Table 1.

#### Table 1: Antiviral Resistance 2008-2009, US Influenza Isolates

	Zanamivir	Oseltamivir	Adamantanes
Influenza A H1N1 (Swine)	S	S	R
Influenza A H1N1 (Seasonal)	S	R	S
Influenza A H3N2	S	S	R
Influenza B	S	S	Not active

S= Sensitive, R= Resistant

<u>Laboratory Test Results</u>. Distinguishing between seasonal influenza A subtypes H1N1 and H3N2, and novel influenza A H1N1 (swine) virus requires specialized techniques not available at most clinical laboratories. Thus clinicians typically must select an antiviral drug based on rapid diagnostic tests, or clinical presentation alone.

<u>Recommendations.</u> Table 2 provides recommendations based on results of rapid diagnostic testing and currently circulating strains. All strains are susceptible to zanamivir, therefore, for empirical treatment, it is a practical single-drug option. Also, given that the strains currently circulating in northern California (novel influenza A H1N1 (swine) virus, influenza A H3N2 and influenza B) are susceptible to oseltamivir, it is also an appropriate empirical treatment. Information about circulating influenza strains may change over time.

Rapid Diagnostic Test Result	Single Drug Option
Not done or negative, but clinical suspicion for flu	Oseltamivir or Zanamivir
Positive: Influenza A	Oseltamivir or Zanamivir
Positive: Cannot distinguish Influenza A vs. B	Oseltamivir or Zanamivir
Positive: Influenza B	Oseltamivir or Zanamivir

Table 2:	Recommended	antiviral	drug(s)	based o	n results of	rapid	diagnostic t	ests*
I able 2.	Recommended	antivitai	ul ug(b)	buscu u	in results of	rapiu	ulugnostic t	COLD

Modified from CDC Interim Recommendations for the Selection of Antiviral Treatment Using Laboratory Test Results and Viral Surveillance Data, United States (www.cdc.gov/flu/professionals/antivirals/antiviraltable.htm).

Recommended doses of antiviral drugs for novel influenza A H1N1 (swine) virus infection in adults and children age 1 year and older are the same as those recommended for seasonal influenza. Oseltamivir recently received FDA approval for use in children less than 1 year of age under an Emergency Use Authorization.

#### Table 3: Recommended doses of antiviral drugs for adults and children<sup>1</sup>

Agent	Treatment Dose X 5 days	Prophylaxis Dose X 10 days after last known exposure <sup>2</sup>
Zanamivir (Adults; Children age $\geq$ 5 years <sup>3</sup> )	10 mg (two 5mg inhalations) BID	10 mg (two 5mg inhalations) QD
Oseltamivir (Adults; Children > 40 kg)	75 mg BID	75 mg QD
Oseltamivir (Children age ≥12 months) ≤ 15 kg 16-23 kg 24-40 kg	30 mg BID 45 mg BID 60 mg BID	30 mg QD 45 mg QD 60 mg QD
Oseltamivir (Children <12 months ) Age 6-11 months Age 3-5 months Age <3 months	25 mg BID 20 mg BID 12 mg BID	25 mg QD 20 mg QD Not recommended <sup>4</sup>

<sup>1</sup> Modified from Table in CDC Interim Guidance on Antiviral Recommendations for Patients with Novel Influenza A (H1N1) Virus Infection and their Close Contacts (<u>www.cdc.gov/h1n1flu/recommendations.htm</u>).

<sup>2</sup> Duration of antiviral chemoprophylaxis for outbreaks is for a minimum of two weeks. If new cases continue to appear, duration may be extended.

<sup>3</sup> Zanamivir is approved for treatment in children  $\geq$ 7 years old and for chemoprophylaxis in children  $\geq$ 5 years old

<sup>4</sup> Due to limited data in this age group, Oseltamivir is not recommended for prophylaxis for children <3 months old unless the situation is judged critical. If deemed critical, the recommended dosage is 12 mg OD x 10 days after last exposure.

#### Infection Control Precautions for Novel Influenza A H1N1 (Swine) Virus (Updated 6/24/09)

All healthcare facilities should adopt standard and droplet precautions when caring for patients with influenzalike illness, seasonal flu or suspected or confirmed novel flu A H1N1 (swine) virus infection:

- Persons with influenza-like illness should be instructed to stay at home until they have fully recovered.
- Place signs at entryway and in all patient areas instructing ALL PERSONS to cover their mouth and nose when they cough or sneeze and to wash hands or use waterless hand cleanser after coughing or sneezing.
- Instruct all persons to cover the mouth/nose with a tissue when coughing or sneezing. Throw tissue in the trash after use. If tissue is not available then use an elbow rather than hands. Wash hands or use waterless hand sanitizer after contact with respiratory secretions.
- Request all persons with fever or cough to wear a surgical mask.
- Provide masks, tissues and waterless hand cleanser in all patient areas and entryways;
- Isolate patients with influenza-like illness as soon as possible, ideally in a private exam room or at a distance of at least 3 feet from others.
- Staff entering the exam room of a patient with influenza-like illness should wear a surgical mask until an infectious cause of illness is ruled out and should wash their hands or use waterless hand cleanser before and after interactions with the patient.
- Aerosol-generating procedures should be performed, when feasible, in a negative pressure airborne infection isolation room (AIIR). Disposable fit-tested N95 respirators, eye protection (goggles or face shield), a clean, non-sterile, long-sleeved gown and gloves should be worn by health care personnel performing these procedures. Aerosol-generating procedures include: bronchoscopy, open suctioning of airway secretions, resuscitation involving emergency intubation or cardiac pulmonary resuscitation, and endotracheal intubation.
- Collection of nasopharyngeal specimens for testing, closed suctioning of airway secretions and administration of nebulized medications are not considered aerosol-generating procedures, thus an N95 mask is not required.

Note: Respiratory Hygiene/Cough Etiquette is now a component of Standard Precautions. To limit disease transmission year round, health care providers should implement respiratory hygiene/cough etiquette and hand hygiene procedures in the health care setting and, when possible, in the community.

Note: Please refer to CAL-OSHA for employee health and safety regulations.

#### Information for International Travelers (updated 6/24/09)

Human cases of novel influenza A H1N1 (swine) virus have been identified in dozens of countries around the world. As stated above, on June 11, 2009 the WHO raised the worldwide pandemic alert level to Phase 6, indicating global spread and ongoing community level outbreaks in multiple parts of the world.

In the Southern Hemisphere, the normal flu season typically occurs during April-September, and some countries in the Southern Hemisphere are reporting increasing numbers of cases of novel influenza A H1N1 (swine) virus.

CDC recommends that those at high risk for complications from any form of influenza should discuss travel plans with their health care provider, and consider the risks and benefits of travel in the context of the novel influenza A H1N1 (swine) virus situation in their destination and the available health care options in the area.

There are at present no specific recommendations for antiviral prophylaxis in travelers. CDC removed its recommendation to avoid travel to Mexico, and does not recommend avoiding travel to any country due to novel influenza A H1N1 (swine) virus. (See http://wwwn.cdc.gov/travel/content/novel-h1n1-flu.aspx.)

#### Adverse Events from Influenza Antiviral Medications (4/29/09)

For information about influenza antiviral medications, including contraindications and adverse effects, go to

- <u>www.cdc.gov/flu/professionals/antivirals/side-effects.htm</u>
- <u>www.cdc.gov/mmwr/preview/mmwrhtml/rr5707a1.htm</u>

Please report adverse events from influenza antivirals to the FDA: www.fda.gov/medwatch

#### Solicitation for Sentinel Providers for the Influenza Surveillance Program (6/24/09)

Primary care providers (physicians, nurse practitioners, and physician assistants) are invited to enroll as sentinel physicians in SF. The California Sentinel Provider Influenza Surveillance Program conducts surveillance for influenza-like illness (ILI) in the outpatient setting. Sentinel Providers report the number of patients seen with ILI and the total number of patients seen for any reason on a weekly basis to the CDC by fax or internet. Specimen collection materials and shipping to the California Department of Public Health are provided at no cost to the provider. Testing of specimens from Sentinel Providers is prioritized. Results are sent to participating providers, who also receive weekly updates on state and national influenza activity. If interested in becoming a Sentinel Provider, contact Melissa Dahlke at 510-620-3494 or melissa.dahlke@cdph.ca.gov.

#### Local Resources (6/24/09)

SFDPH website:

• Swine flu page: <u>www.sfcdcp.org/H1N1.html</u>

Phone contact:

- Hospital-based clinicians should call their hospital's Swine Flu Point of Contact. Most hospitals designated an Infection Control Professional as their Swine Flu Point of Contact.
- For more urgent issues clinicians may call 415-554-2830.
- The public can call 311 for basic information about swine flu.