Guidance on Evaluation and Management of Swine-Origin Influenza A H1N1 (S-OIV)

Dated May 1, 2009

CDC is working with the World Health Organization (WHO), state and local officials in all affected states and cities to conduct an ongoing investigation of a nationwide outbreak of human cases of S-OIV infection to determine the source and extent of the infection both in the US and internationally. Cases were first identified when specimens were determined to be positive for influenza A but could not be subtyped with standard methods. Subsequent subtyping at CDC determined that patients were infected with swine-origin influenza A (H1N1) virus (S-OIV).

The guidance in this advisory is based on currently available information and will likely change as additional information becomes available.

Clinical guidance for testing and treatment

Current assumptions made for these clinical guidance recommendations:

- There are adequate stores of antiviral medications to treat all seriously ill patients.
- Prophylactic medication supply limitations are a likely inevitability that will require a focused approach to post exposure prophylaxis for both health care workers (HCW) and high-risk individuals.
- Most influenza illness, including S-OIV infection, will be mild to moderate and self-limiting.
- As a vaccine against S-OIV is developed, antiviral recommendations are likely to change.
- There are insufficient laboratory testing resources to perform S-OIV confirmatory testing on all patients with symptoms of influenza.

Clinical Assessment

These guidelines are intended to provide a general approach.

Clinicians are urged to continue their normal practice to every extent possible and apply sound clinical judgment to the approach of each individual patient. It is important to remember that the clinical symptoms and presentation of S-OIV infection may be similar to other respiratory illnesses and should be considered in the context of a complete differential diagnosis.

It is important to note that for patients already tested by New York State Department of Health (Wadsworth Laboratory) and negative for H1N1, seasonal influenza and other usual respiratory viruses have still been identified. Therefore, clinicians should bear in mind the CDC recommendations regarding antiviral resistance in certain strains of seasonal influenza, and act accordingly. CDC guidance for *seasonal influenza* is available through their website at www.cdc.gov/flu/professionals/antivirals/index.htm

Exposure (to a confirmed or probable S-OIV case or to a geographic area where S-OIV has been identified) alone is not an indication for hospital or emergency room referral.

Patients who report mild illness AND who have no underlying medical conditions that place them at higher risk of complications from influenza need not be seen in the office.

These patients can be screened by phone, given symptomatic treatment recommendations, and instructed to contact their physician for any signs of worsening severity of illness.

With the current limitations in confirmatory testing capacity, for typical clinical management purposes, **patients with mild illness should NOT be tested for influenza because screening tests will not influence treatment decisions.**

Patients who report serious illness should be further evaluated; the most appropriate setting for the evaluation of a severely ill patient may be the hospital emergency room.

Do NOT send patients to an emergency department unless you believe hospital admission may be warranted.

Groups at Possible Risk of Complications

*At this time, the same age and risk groups who are at higher risk for seasonal influenza complications should also be considered at higher risk for S-OIV infection complications:

- Chronic pulmonary, cardiovascular, renal, hepatic, hematological, or metabolic disorders (including diabetes mellitus)
- Immunosuppression
- HIV-infected persons
- Compromised respiratory function, including conditions which increase the risk for aspiration
- Pregnancy (see special guidance on pregnant women noted in Section 6)
- Persons aged ≥50 years (especially those > 65 years)
- Residence (regardless of age) in a nursing home or other long-term care institution
- Children <5 years (especially those ≤2 years, see special guidance on young children in Section 6)

CDC Definitions for S-OIV

For purposes of applying the information in the guidance, please use the following:
Acute febrile respiratory illness is defined as a measured temperature of ≥37.8°C (100°F) and recent onset of at least one of the following:

1. rhinorrhea or nasal congestion
2. sore throat
3. cough

A ***suspected case***: acute febrile respiratory illness with

- onset within 7 days of close contact with a person who is a *confirmed* case of S-OIV infection,

or

- onset within 7 days of travel to a community either within the United States or internationally, where there are one or more confirmed S-OIV cases,

or

- that resides in a community where there are one or more confirmed S-OIV cases.

SUFFOLK COUNTY LIKELY CONSTITUTES SUCH A COMMUNITY AT THIS TIME.

A *probable case:* acute febrile respiratory illness positive for influenza A, but negative for H1 and H3 by influenza RT-PCR.

A *confirmed case:* acute febrile respiratory illness with laboratory confirmed S-OIV infection by one or more of the following tests:
1. real-time RT-PCR
2. viral culture

Antiviral Treatment

Antiviral treatment is ***recommended*** for:
1. Confirmed, probable, or suspected cases of S-OIV infection in hospitalized patients.
2. Confirmed, probable, or suspected cases of S-OIV infection in patients with high-risk for influenza complications. [see above]

Antiviral treatment can be ***considered*** for any other confirmed, probable, or suspected cases of S-OIV infection.

Summary of testing and treatment recommendations for patients with suspect, probable, or confirmed S-OIV infection:

High-risk medical conditions that increase complications of influenza

Mild Illness	**Test?**	**NO**
	Treat?	Recommended
Severe Illness	**Test?**	**YES**
	Treat?	Recommended

NO high-risk medical conditions that increase complications of influenza

Mild Illness	**Test?**	**NO**
	Treat?	Consider
Severe Illness	**Test?**	**YES**
	Treat?	Recommended

Antiviral treatment with zanamivir (Relenza) or oseltamivir (Tamiflu) should be initiated as soon as possible (ideallywithin 48 hours) after the onset of symptoms. Recommended duration of treatment is 5 days.

The S-OIV is sensitive (not resistant) to the neuraminidase inhibitors, oseltamivir and zanamivir, and resistant (not sensitive) to the adamantanes, amantadine and rimantadine as of this writing.

Antiviral Prophylaxis

Antiviral chemoprophylaxis is ***recommended*** for:
1. Household close contacts who are at high-risk for complications of influenza of a confirmed or probable case.
2. Health care workers or public health workers who were not using appropriate personal protective equipment during close contact with an ill confirmed, probable, or suspected case of S-OIV infection during the case's infectious period.

Antiviral chemoprophylaxis can be ***considered*** for:
1. Household close contacts who are at high-risk for complications of influenza of a suspected case.
2. Children attending school or daycare who are at high-risk for complications of influenza and who had close contact (face-to-face) with a confirmed, probable, or suspected case.
3. Health care workers who are at high-risk for complications of influenza who are working in an area of the healthcare facility that contains patients with confirmed S-OIV cases, or who are caring for patients with any acute febrile respiratory illness.
4. Travelers to Mexico who are at high-risk for complications of influenza. (Note: A travel warning is currently in effect indicating that nonessential travel to Mexico should be avoided).
5. First responders who are at high-risk for complications of influenza and who are working in areas with confirmed cases of S-OIV infection.

When prophylaxis is indicated, either oseltamivir or zanamivir should be initiated as soon as possible following the exposure and should continue for **10 days** following the last known exposure to S-OIV infection.

S-OIV antiviral medication dosing recommendations (table extracted from Infectious Disease Society of America guidelines for seasonal influenza)

Oseltamivir

Adults Treatment: 75 mg capsule twice per day for 5 days
Prophylaxis: 75 mg capsule once per day

Children (age 12 months or older)** by weight

</= 15 kg	Treatment =>	60 mg per day divided into 2 doses
	Prophylaxis =>	30 mg once per day
15 - 23 kg	Treatment=>	90 mg per day divided into 2 doses
	Prophylaxis=>	45 mg once per day
24 - 40 kg	Treatment=>	120 mg per day divided into 2 doses
	Prophylaxis=>	60 mg once per day
>40 kg	Treatment=>	150 mg per day divided into 2 doses
	Prophylaxis=>	75 mg once per day

Zanamivir

Adults Treatment: Two 5-mg inhalations (10 mg total) twice per day
Prophylaxis: Two 5-mg inhalations (10 mg total) once per day

Children Treatment: Two 5-mg inhalations (10 mg total) twice per day (age >/= 7 years)
Prophylaxis: Two 5-mg inhalations (10 mg total) once per day (age >/= 5 years)

** Oseltamivir use for children < 1 year old was recently approved by the U.S. Food and Drug Administration (FDA) under an Emergency Use Authorization (EUA) and dosing for these children is age-based. See http://www.cdc.gov/swineflu/recommendations.htm.

Infection control for outpatient and emergency room settings

Note: Further guidance on infection control, including for inpatient settings, is being revised by CDC and will be available on their website at: http://www.cdc.gov/swineflu/guidance/.

•Clinics and private practice settings where patients typically call ahead to schedule an appointment should try to group patients with acute febrile respiratory illness towards the end of the day, to avoid exposure to other patients.

• Signs in appropriate languages for the community should be posted at entrances instructing persons with acute febrile respiratory illness to:

- Perform hand hygiene, don a surgical mask, and notify staff as soon as possible prior to or upon entry to the office/clinic;
- Cover their nose/mouth when coughing or sneezing;
- Cough or sneeze into a tissue or their sleeve;
- Dispose of tissues in the nearest waste receptacle after use; and
- Perform hand hygiene after contact with respiratory secretions.

• Place symptomatic patients in a separate room with the door closed as soon as possible to limit their time in common waiting areas. There is *no longer a need* to place these patients in an Airborne Infection Isolation Room (AIIR) *unless* performing aerosol-generating procedures.

•If necessary, designate separate waiting areas for patients with acute febrile respiratory illness to sit at least three to six feet away from others.

• Masks, tissues, and alcohol hand rub products should be easily available for staff and patient use.

• Provide tissues and no-touch receptacles (e.g., waste containers with pedal-operated lid or uncovered waste container) for used tissue disposal.

• Provide soap and disposable towels for hand washing where sinks are available.

• Healthcare workers evaluating, treating, or collecting specimens from a patient with acute febrile respiratory illness should don maximal personal protective equipment (PPE) whenever in the patient's room. This includes:

- Gloves, face shield or goggles, and gowns
- N95 respirator or equivalent, when available
- If N95 respirators are unavailable, a surgical mask should be used
- Because N95 respirator supply is likely to be limited, practices may elect to reserve their use for aerosol-generating procedures (nebulizer treatments, suctioning, intubation, sputum collection, and bronchoscopy)
- PPE should be removed and disposed of in a receptacle prior to or upon exiting a patient room and hand hygiene performed immediately

• Aerosol-generating procedures should be performed in an AIIR.

• Routine cleaning and disinfection strategies used during influenza season can be applied

to the environmental management of S-OIV.

• Management of laundry, utensils, and medical waste should also be performed in accordance with procedures followed for seasonal influenza.

• More information can be found at: http://www.cdc.gov/ncidod/dhqp/gl_environinfection.html.

• High touch surfaces and items (doorknobs, elevator buttons, restrooms, chairs, etc.) should be regularly cleaned and disinfected with appropriate agents.

• All staff should be aware of the policies and enforce them strictly.

Public health notification

Clinicians should contact their LHD to report any unusual clusters of acute febrile respiratory illness and any suspect case(s) meeting the case definitions, especially if the patient(s) is (are) severely ill. The Suffolk County Department of Health number Monday through Friday during business hours is 863 – 3055. After hours and on weekends, the emergency number currently designated is 852 – 4820.

Additional Information

Updated information is frequently posted on the CDC website at: http://www.cdc.gov/flu/swine/investigation.htm.

Several additional CDC guidance documents can be found at http://www.cdc.gov/swineflu/guidance/. These are frequently updated.

Currently posted guidance documents include:
• Guidance-HIV-Infected Adults and Adolescents: Considerations for Clinicians Regarding Swine-Origin Influenza A (H1N1) Virus, 4/30/09
• Guidance for Emergency Medical Services (EMS) Systems and 9-1-1 Public Safety Answering Points (PSAPs) for Management of Patients with Confirmed or Suspected Infection, 4/29/09
• Emergency Use Authorization (EUA) of Medical Products and Devices, 4/29/09
• Guidance for Clinicians on Identifying and Caring for Patients, 4/29/09
• Guidance for Clinicians on Prevention and Treatment in Young Children, 4/28/09
• Antiviral Recommendations for Patients and Close Contacts, 4/29/09
• Biosafety Guidelines for Lab Workers, 4/24/09
• Interim Guidance for Infection Control for Care of Patients with Confirmed or Suspected Swine Influenza A (H1N1) Virus Infection in a Healthcare Setting, 4/29/09
• Guidance on Case Definitions for Investigations of Cases, 4/30/09
• Taking Care of a Sick Person in Your Home, 4/25/09
• Guidance for Airlines Regarding Flight Crews Arriving from Domestic and International Areas Affected by Swine Influenza, 4/28/09
• Guidance to Assist Flight Deck and Cabin Crew in Identifying Passengers Who May Have Swine Influenza, 4/28/09
• Pregnant Women: Considerations for Clinicians, 4/28/09