



# Time Sensitive Information from Le Bonheur Children's

## Pediatric Infections caused by the "Swine-Origin Influenza A (H1N1) Virus (S-OIV) 5/1/09 Update

The Centers for Disease Control and Prevention (CDC) has confirmed the presence of a novel swine influenza virus (S-OIV) in the U.S. As you know, yesterday we had the first report of a probable, but NOT yet confirmed case, in the Memphis area. CDC has set up a (frequently updated) swine influenza website at [www.cdc.gov/swineflu](http://www.cdc.gov/swineflu).

Based on currently available information (please note that more information is accumulating rapidly), the CDC recommends that patients with suspected or confirmed S-OIV infection be managed in the same manner as patients with suspected or confirmed seasonal influenza. Thus, the criteria that parents should use to determine when to contact their physician's office or take their children to be evaluated in a physician's office, clinic or emergency department are the same today as they were a week ago or three months ago.

CDC has provided some interim guidance for clinicians on the prevention and management of S-OIV infection in young children (<http://www.cdc.gov/swineflu/childrentreatment.htm>) and also has a website that provides useful information about S-OIV infection for parents and other members of the general public ([http://www.cdc.gov/swineflu/swineflu\\_you.htm](http://www.cdc.gov/swineflu/swineflu_you.htm)), including advice to parents about signs and symptoms that should lead parents to contact their physician's office and about warning signs that should lead parents to seek emergency medical care for their children.

Currently, the Tennessee Department of Health (TDH) recommends that diagnostic testing for swine influenza primarily be performed on inpatients with influenza-like illnesses associated with abnormal CXRs and patients with epidemiologic links to other patients or areas with confirmed cases of S-OIV infection. Note that since at this time, S-OIV is not confirmed in the Memphis area (or the entire state of TN for that matter), the epidemiologic links must be to those in Mexico or to the cases already confirmed in the USA. Testing can be performed on outpatients but should not influence treatment decisions and generally is

not recommended unless there are public health reasons to do these tests (e.g., investigation of possible outbreak in school or day care or other “closed communities”). Testing can be done at the TDH lab in Nashville.

The Methodist/Le Bonheur laboratories (Virology and Molecular Diagnostics Laboratories located within Le Bonheur) have two tests that can diagnose whether a patient has Influenza. The first test (rapid antigen detection) is likely to be insensitive but has a rapid turn-around time. The second test (PCR) is theoretically able to detect Influenza (swine or seasonal) but will also not differentiate between these types of influenza. The PCR assays will be run daily for patient care. We are still seeing circulating seasonal Influenza in Memphis. The Le Bonheur virology experience with respiratory viruses, including Influenza, is updated on a weekly basis and can be found at <http://www.lebonheurmd.org/lebonheurmd.asp?ID1=Updates&ID2=Virology+News>

TDH has also published Interim Guidelines for infection control in outpatient settings (see attached). Please note that this emphasizes droplet precautions (wearing a surgical mask when within 6 feet of the patient with an acute febrile respiratory illness), respiratory etiquette (e.g., having the patient wear a mask, use hand hygiene and tissues, etc) and, **for all aerosol-generating procedures (including the collection of respiratory specimens such as NP or OP swabs or nasal washes)**, the use of gowns, gloves, N95 respirators and eye protection (goggles or face masks).

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**Implement “Cover your Cough” Education** (also known as “respiratory hygiene / cough etiquette” or “good health manners”)

**Objective:** Reduce the spread of illnesses (including influenza) spread via respiratory droplets in areas such as waiting rooms of Emergency Departments or outpatient clinics.

- All patients or visitors with fever + cough should be provided with a surgical mask.
- A screening form for swine influenza is available for use (attached).
- Provide instructions on proper use and disposal of masks. Posters developed by CDC can be found at the following URL: <http://www.cdc.gov/flu/protect/covercough.htm>. Other educational materials can be found at <http://www.publichealth.va.gov/InfectionDontPassItOn/>
- For patients who cannot wear a surgical mask, provide tissues and instructions on when to use them (i.e., when coughing, sneezing, or controlling nasal secretions), how and where to dispose of them and the importance of hand hygiene after handling this material.
- Provide hand hygiene materials in waiting room areas and encourage patients with respiratory symptoms to perform hand hygiene. Alcohol concentrations of alcohol-based hand sanitizers should be between 60 and 95%.
- Designate an area in the waiting room where patients with respiratory symptoms can be segregated (ideally by at least 3 feet) from other patients who do not have respiratory symptoms.
- Place patients with respiratory symptoms in a private room (preferred) or cubicle as soon as possible.
- Implement use of surgical masks by healthcare personnel during the evaluation of patients with respiratory symptoms.
- Consider the installation of plexiglass barriers at the point of triage or registration to protect healthcare personnel from contact with respiratory droplets.
- If no barriers are present, instruct registration and triage staff to remain at least 3 feet from unmasked patients and to consider wearing surgical masks. If triage staff are in an area where aerosol-generating procedures are performed, N95 respirators should be considered.
- Continue to use droplet precautions to manage patients with respiratory symptoms until it is determined that the cause of symptoms is not an infectious agent that requires precautions beyond Standard Precautions.
- Staff should wear N-95 respirators if performing aerosol-generating procedures (including collection of respiratory specimens)
- CDC recommends wearing of N-95 respirators, gowns, gloves and eye-protection when obtaining upper respiratory specimens such as nasopharyngeal swabs

### **Interim Guidance for Antiviral Treatment**

**Objective:** To reduce mortality and complications from influenza

- Treat all patients with influenza like illness [ILI] as you would for seasonal influenza:
  - Consider antivirals for persons at high risk of complications from severe flu (e.g., elderly, serious chronic disease)
  - Remember seasonal H1N1 may still be present and is resistant to oseltamivir
  - Use zanamivir (Relenza) or oseltamivir (Tamiflu) + amantadine or rimantadine if considering possible seasonal flu vs. swine flu
  - Dosage and duration of therapy is the same as for seasonal influenza.
- Patients at low risk for complications and patients with uncomplicated infections do not necessarily require antivirals
- Secondary bacterial infections are possible during any influenza illness (consider methicillin-resistant *Staphylococcus aureus* [MRSA])
- Details can be found at: <http://www.cdc.gov/swineflu/recommendations.htm>

### **Interim Guidance for Antiviral Prophylaxis**

**Objective:** To reduce mortality and complications from influenza

- Treat contacts of possible novel/swine flu cases like contacts of a seasonal influenza case:
  - Consider antivirals for persons at high risk of complications from severe flu (e.g., elderly, serious chronic disease)
- Seasonal H1N1 may still be present and is resistant to oseltamivir
  - Use zanamivir (Relenza) or oseltamivir (Tamiflu) + amantadine or rimantadine if considering possible seasonal flu vs. swine flu
- Prophylaxis is for 7 days after last contact with infectious patient
- Details can be found at: <http://www.cdc.gov/swineflu/recommendations.htm>

### **Interim Guidance for Diagnostic Testing for Novel H1N1 (Swine) Influenza:**

**Objective:** To characterize the presence of novel/swine influenza virus in Tennessee, **not** to diagnose every ILI. Results of testing will **not** influence treatment decisions

- Instructions on collection and shipping of specimens (prefer nasopharyngeal vs. oropharyngeal) are attached.
  - Use only sterile Dacron or rayon swabs with plastic shafts. Do **not** use calcium alginate swabs or swabs with wooden sticks, as they may contain substances that inactivate some viruses and inhibit PCR testing.
  - Place in viral transport medium
  - Refrigerate specimen, do **not** freeze.
  - Send to State Public Health Laboratory for PCR testing
    - Do **not** send to commercial/in-house laboratory
    - Due to risk to laboratory staff, viral cultures should **not** be performed.

**Respiratory Viral Testing**  
**During the “Swine-Origin” Influenza A (H1N1) Virus (S-OIV) Time Period**  
**5/1/09 Update**

Respiratory viral diagnostic testing has changed in response to the S-OIV problem. We are temporarily suspending respiratory viral culture. In its place, you should send rapid antigen and PCR testing. The current preferred diagnostic techniques are listed below.

Our current Flu testing capability at Le Bonheur should also be able to detect S-OIV, but will not be able to differentiate S-OIV from the regular Flu A which is still circulating in Memphis. For daily updates as to the numbers of Flu identifications at LeBonheur, please go to: <http://www.lebonheurmd.org> and click on the “Virology News” icon.

We always prefer a nasal wash\*\*, but a swab\*\* is OK. The preferred swab to send to the Le Bonheur virology laboratory for viral testing is the Copan swab (tip flocced with synthetic fiber). These swabs have already been in use for several months at Le Bonheur (see attached instructions for their use).

Patients with acute febrile respiratory viral illnesses (including but not limited to "influenza-like illness") should have 2 nasopharyngeal swabs or wash\*\* submitted in saline. One for Rapid Antigen for influenza and another swab submitted for influenza PCR. We are no longer seeing RSV in the community, but it still can be ordered. Since our diagnosis of adenoviruses and parainfluenza viruses was culture-based, we are temporarily not able to diagnose these viruses. Consult the Infectious Disease Service if there is a need to test for these viruses, as contingencies have been arranged.

Patients admitted to Le Bonheur with influenza-like illness with an abnormal CXR or influenza-like illness with known epidemiologic links to patients or locations with confirmed swine flu should have a NP swab (or wash) submitted to the lab in saline for rapid antigen testing, a second swab (or wash) submitted in saline for PCR (as above in #2) and a third additional nasal swab only (placed within a tube containing viral transport media) submitted to the Tennessee Department of Health laboratory for testing for the novel Swine-Origin Influenza A (H1N1) Virus (S-OIV). The Lab can tube all these materials to you if you have the need.

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\*\* Note that collection of nasopharyngeal swabs or washes for viral diagnostic testing is one of the aerosol-generating activities that now requires the use of personal protective equipment including a fit-tested disposable N95 respirator and goggles. As per the TDH; "Personnel engaged in aerosol generating activities (e.g., collection of clinical specimens, endotracheal intubation, nebulizer treatment, bronchoscopy, and resuscitation involving emergency intubation or cardiac pulmonary resuscitation) for suspected or confirmed swine influenza A (H1N1) cases should wear a fit-tested disposable N95 respirator.\* The TDH recommends that these precautions be taken with all patients with influenza-like illnesses (ILI); not just those with epidemiologic links (e.g., travel to Mexico). "

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### **NASAL SWAB COLLECTION PROCEDURE**

1. Always use proper hand hygiene and gloves when collecting samples.
2. Remove the swab from the wrapper.
3. Visualize both nares for an obstruction, narrowing or irritation. If none determined, either nostril can be used.
4. Gently insert the Copan swab into the nostril in the direction parallel to the palate. Do not point the swab upwards when inserting.
5. Insert the swab deeply into the nares all the way up to the thick part of the swab.
6. Leave swab in place for 10 seconds to allow for collection of sample. Turn swab two to three times and remove.
7. Return swab to the plastic tube provided.
8. Break off the swab at the “break point” marked with red.
9. Cap the tube appropriately and send to the lab.

