Swine Flu Exposure

Pediatric Office-Hours Version

Schmitt-Thompson Clinical Content

DEFINITION

* Exposure (Close Contact) to person with Swine Flu (H1N1 Flu)
* Questions about Swine Flu
* Child has NO symptoms of Swine Flu (no fever, cough, sore throat, runny nose)
* Children with symptoms of Swine Flu following Exposure (Close Contact) should be triaged and managed using the Swine Flu (H1N1 Flu) protocol.

BACKGROUND

EXPOSURE (CLOSE CONTACT) TO SWINE FLU DEFINITION:
* HOUSEHOLD CLOSE CONTACT: Lives with a person with confirmed, probable or suspected swine flu.
* OTHER CLOSE CONTACT (within 3 feet, 1 meter; touching distance) with a person with confirmed, probable or suspected Swine Flu. Examples of such close contact include kissing or embracing, sharing eating or drinking utensils, close conversation, and any other direct contact with respiratory secretions of a person with Swine Flu. Includes being in the same child care center room or carpool.
* NOT CLOSE CONTACT: IN SAME BUILDING. Activities such as walking by a person or sitting across a waiting room from a person with Swine Flu for a brief period of time (per CDC May 2009). Being in the same school, house of worship, workplace or building also is not Close Contact.
* NOT CLOSE CONTACT: IN SAME COMMUNITY. Lives in a community where there are one or more confirmed cases of Swine Flu is not an Exposure. Living in the same state or country (e.g., Mexico) carries even less risk. These patients are triaged using standard respiratory symptom protocols (e.g., Cough).

HIGH RISK CHILDREN FOR COMPLICATIONS FROM SWINE FLU (CDC)
* Lung disease (e.g., asthma, cystic fibrosis, bronchopulmonary dysplasia)
* Heart disease (e.g., congenital heart disease, rheumatic heart disease)
* Muscle disease (e.g., muscular dystrophy)
* Metabolic disease (e.g., diabetes mellitus)
* Sickle cell disease
* Renal disease (e.g., nephrotic syndrome)
* Malignancy and other immunocompromised conditions (e.g., HIV)
* Diseases requiring long-term aspirin therapy (e.g., Kawasaki's disease and rheumatoid arthritis)
* Pregnancy
* Healthy children under 2 years old are also considered High Risk (Reason: higher rate of pneumonia). Whether healthy 2 to 5 year olds should be included is controversial. Based on new data (9-2009), they do not have an increased rate of complications. Your office may decide to include them. The CDC leaves this to clinical judgment.
* Note: all other patients are defined as LOW-RISK

SWINE FLU (H1N1 FLU): GENERAL INFORMATION
* Definition: Swine flu viruses normally do not infect humans. The novel H1N1 virus is a combination virus that contains genes from swine flu, avian flu and human flu. Cases of swine flu in humans were first detected in Mexico during March 2009. An outbreak of swine flu in humans occurred in the U.S. and Canada in April 2009. By June 2009, the WHO declared it a global pandemic.
* Symptoms: The symptoms of swine flu are similar to those of regular human influenza. Main symptoms are sore throat, bad cough and fever. Other common symptoms are a runny nose, muscle pain, headache and fatigue. The onset of symptoms is usually abrupt. Some people also have vomiting and diarrhea, but never as the only symptom.
* Severity of Symptoms: Symptoms of swine flu can be mild to severe, just as with regular human flu.

Thus far in the US and Canada, the symptoms have generally been mild to moderate. Like seasonal influenza, severe illness and death may occur with Swine Flu.
* Complications: The worst complications are pneumonia, respiratory distress or failure and death. Complications are more likely to occur in patients with chronic diseases or other risk factors (see HIGH RISK PATIENTS list)
* Transmission: The swine flu virus is spread via airborne droplets, from sneezing and coughing, just like other influenza viruses. It also can be transmitted by hands contaminated with secretions. It no longer has anything to do with pigs; it is only spread person-to-person. Swine flu is NOT transmitted by eating pork.
* Expected Course: Like regular flu, the fever lasts 2-3 days, the runny/congested nose 1-2 weeks and the cough 2-3 weeks. With some flu viruses, the fever lasts 4 or 5 days.
* Contagious Period: A person is contagious for 1 day prior to and for 7 days after the onset of symptoms (e.g., the fever and cough)
* Incubation Period: After exposure, a person will come down with swine flu symptoms in 4 to 6 days (5 days on the average). An outer limit rarely could be 7 days. This virus has a longer incubation period than seasonal flu (1 to 3 days).
* Attack Rate: The chance of getting swine flu depends on the degree of exposure and is always higher for household contacts. While the attack rate is unknown for this virus, it should be high (20-30%) because there is no natural immunity to swine flu viruses.
* Diagnostic Test: At this time, testing is mainly indicated for patients with severe disease (CDC, May 2009). Testing has limited value. Offices and EDs only have a rapid test for influenza. It has a sensitivity of 60% and will not identify all infected people. However, if it is positive, that doesn't prove the patient has Swine Flu. An additional swab of nasal secretions needs to be sent to the State Public Health Department to test for Swine Flu. That test takes 2 or 3 days.
* Treatment: The Swine Flu virus currently is sensitive to oseltamivir (Tamiflu) and zanamivir (Relenza). For best results, it needs to be started within 48 hours of symptom onset, but it can be given later for severe cases. Indications for treatment of swine flu include HIGH-RISK patients and severely ill patients, especially those who require hospitalization. Since the disease is usually mild to moderate, most people with swine flu do not require antiviral medicine. Tamiflu resistance has been reported. (CDC, 8/2009)
* Prevention: Some flu viruses are more contagious than others. It is not yet clear how quickly this swine flu virus will spread. Prevention measures include avoiding sick people and crowds (social distancing). Hand washing is very important. A complete list of preventive tips is available from the CDC website.
* Vaccine: No vaccine is currently available to prevent swine flu. The vaccine should become available in late fall 2009. The yearly seasonal flu vaccine offers no protection against swine flu.

RETURN TO SCHOOL
* If you or your child get sick with swine flu, the CDC recommends that you stay home from work or school.
* Limit contact with others to keep from infecting them.
* Stay home for at least 24 hours after the fever is gone (CDC: August 2009).

PRESCRIPTION ANTI-VIRAL MEDICATIONS FOR SWINE FLU (CDC)
* Two medications licensed in the U.S. and Canada are believed to be effective against the swine influenza virus: oseltamavir (Tamiflu) and zanamivir (Relenza). Tamiflu is given orally. Relenza is given by inhalation.
* TREATMENT: Treatment should strongly be considered for patients with illness severe enough that require hospitalization and symptomatic patients at HIGH RISK for complications (see that list).
* Treatment IS NOT generally recommended for influenza-like illness in most healthy patients. In summary, the CDC recommends to 'treat patients with severe flu illness'. (CDC: May 2009) If Swine Flu becomes more severe, the indication for antiviral treatment may change.
* PREVENTION: These medications can also be taken prophylactically to prevent illness. Two groups that may especially benefit from prophylaxis are health care workers and patients at HIGH RISK for complications. The CDC only recommends antiviral prophylaxis if the exposure is 'close

contact' type (e.g., embracing, close conversation, within 3 feet or 1 meter)

SWINE FLU AND TAMIFLU
* Oseltamivir (Tamiflu) has become the drug of choice for treating severe influenza in children.
* Tamiflu is licensed for children over 1 year of age. It has authorization for emergency use in infants 3-12 months of age.
* Tamiflu comes in a liquid or pill form and is taken for 5 days.
* Main side effect: nausea and vomiting
* Tamiflu is useful for both Influenza A and B. It appears to be effective for this strain of Swine flu.
* Limitations of all antiviral agents (including Tamiflu):
* All antiviral drugs must be started within 48 hours of the onset of influenza symptoms to have an optimal impact. However, for Swine Flu, starting it later is also recommended for severe cases.
* Their benefits are limited: they reduce the duration of symptoms by 1 to 1.5 days. They also reduce the severity of flu symptoms, but they do not cure the disease nor remove all the symptoms.

INTERNET RESOURCES FOR U.S.
* Centers for Disease Control and Prevention, United States (CDC)
* For most up to date information, visit CDC's Swine Flu web site at: http://www.cdc.gov/swineflu
* Also, the AAP website at: www.aap.org/swine flu

INFORMATION FROM THE WORLD HEALTH ORGANIZATION (WHO) ABOUT SWINE FLU
* WHO Swine Influenza (H1N1) Website: http://www.who.int/csr/disease/swineflu/en/index.html
* WHO complete list of guidance documents:
http://www.who.int/csr/disease/swineflu/guidance/en/index.html

FIRST AID

N/A

TRIAGE ASSESSMENT QUESTIONS FOR SWINE FLU (H1N1) EXPOSURE

See More Appropriate Protocol

- Swine Flu EXPOSURE (Close Contact) within last 7 days AND fever or respiratory symptoms (cough, sore throat, or runny nose)

  Go to Protocol: Swine Flu (H1N1 Flu) (Pediatric)

See Today in Office

- Parent wants child seen

Discuss with PCP and Callback by Nurse Today

- Swine Flu EXPOSURE (Close Contact) within last 7 days AND exposed person is HIGH RISK (age under 2 years OR underlying heart or lung disease OR weak immune system, etc) (see that List) AND NO fever OR respiratory symptoms

  Reason: Prophylaxis with antiviral medication can be considered (CDC) OR PCP could consider calling in prescription

Home Care

- Swine Flu Questions AND NO EXPOSURE in the last 7 days

- Swine Flu Prevention Questions

- Tamiflu Questions or Request for Prescription
- Swine Flu EXPOSURE within the last 7 days AND NO respiratory symptoms or fever AND Low Risk Child
- Swine Flu Minor Contact (same school or gathering, etc) BUT NO True EXPOSURE (Close Contact) AND no respiratory symptoms or fever

HOME CARE ADVICE FOR SWINE FLU (H1N1) EXPOSURE

Swine Flu Questions AND NO EXPOSURE in the last 7 days

1. SWINE FLU - GENERAL INFORMATION:
   * An outbreak of swine flu in humans started in Mexico and the U.S. in April 2009.
   * By June, it had spread to most countries in the world.
   * So far, this Swine Flu virus is not as dangerous as feared.

2. SWINE FLU - SYMPTOMS:
   * The symptoms of swine flu are the same as those seen with regular human influenza.
   * The main symptoms are fever, cough, sore throat and runny nose.
   * FEVER must be present to make this diagnosis (CDC).
   * Other common symptoms are muscle pain, headache and fatigue.
   * Some people also have vomiting and diarrhea, but never as the only symptom.

3. SWINE FLU - DIAGNOSIS AND FLU TESTS:
   * If Swine Flu is widespread in your community and your child develops flu symptoms with fever, then he or she probably has Swine Flu.
   * Your child doesn't need any special tests.
   * You should call your doctor if your child is HIGH-RISK: 1) under 2 years of age OR 2) has underlying health problems. (e.g., asthma or weak immune system) (see that List)
   * For LOW-RISK children, you don't need to call or see your child's doctor, unless your child develops a complication of the flu.

4. SWINE FLU - TREATMENT:
   * Tamiflu (oseltamivir) is the main antiviral drug used to treat Swine Flu in children.
   * Treatment is recommended for any patient with severe symptoms AND HIGH RISK patients (see that List) with any symptoms.
   * Treatment is generally not recommended for LOW RISK children with mild to moderate Swine Flu illness (per CDC).
   * Most patients recover without taking Tamiflu.

5. SWINE FLU - CONTAGIOUSNESS:
   * Symptoms usually start within 4-6 days of exposure to a person with swine flu (7 days is an outer limit). If more than 7 days pass from exposure without your child developing symptoms, your child should be safe and not get swine flu.
   * Keep your child home and out of child care or school for at least 24 hours after the fever is gone (CDC: August 2009).
   * The swine flu virus is spread by airborne droplets, from sneezing and coughing, just like other influenza viruses. It also can be transmitted by hands contaminated with secretions.
   * Swine flu is NOT transmitted by eating pork.

6. CALL BACK IF:
   * You have other questions or concerns

Swine Flu Prevention Questions

1. HOW TO PROTECT YOURSELF FROM GETTING SICK:
   * Wash hands often with soap and water.
   * Alcohol-based hand cleaners are also effective.
   * Avoid touching the eyes, nose or mouth. Germs on the hands can spread this way.
   * Try to avoid close contact with sick people.
   * Try to avoid unnecessary visits to the ER and urgent care centers because those are the places where you are more likely to be exposed to Swine Flu, if you don't have it.

2. HOW TO PROTECT OTHERS - STAY HOME WHEN SICK:
   * Cover the nose and mouth with a tissue when coughing or sneezing.
   * Wash hands often with soap and water, especially after coughing or sneezing.
   * Limit contact with others to keep from infecting them.
   * Stay home from school or work for at least 24 hours after the fever is gone (CDC, August 2009).

3. FACE MASKS:
   * Face masks refer to disposable masks labeled as surgical or dental masks.
   * For healthy people, face masks may help reduce the risk of getting swine flu in crowded settings, if swine flu becomes prevalent (CDC).
   * Avoiding sick people and frequent handwashing are more effective preventive measures.
   * At the present time, face masks are not needed in the U.S. for healthy people. (Possible exception: households where a family member has Swine Flu).
   * Sick people should wear a face mask if they must leave their home to seek medical care.

4. SWINE FLU VACCINE:
   * A Swine Flu vaccine is in development.
   * It should be available by late fall 2009.
   * When available, the CDC will provide guidelines about who should receive the vaccine.
   * This is the best way to prevent Swine Flu.

5. ANTI-VIRAL MEDICATION:
   * Tamiflu can be used for prevention following close contact with a person who has Swine Flu.
   * It is only recommended for HIGH-RISK patients (CDC).

6. CALL BACK IF:
   * You have other questions or concerns

Tamiflu Questions or Request for Prescription

1. TREATING SWINE FLU - TAMIFLU:
   * Tamiflu is effective in treating the current Swine Flu virus.
   * Indications: Severe symptoms OR underlying health problems (HIGH-RISK group)
   * For HIGH RISK children, call your doctor at the start of flu symptoms.
   * Most patients have mild to moderate symptoms and Tamiflu treatment is not necessary.
   * Unnecessary overuse of Tamiflu causes resistant strains of the virus. (8/2009 some resistance has occured)
   * Tamiflu also has side effects: Vomiting in 10% of children.

2. PREVENTING SWINE FLU - TAMIFLU:
   * The drug Tamiflu may help prevent swine flu (prophylaxis).
   * Indications: Recent close contact with person with confirmed Swine Flu AND the exposed person is in HIGH-RISK group (see that List).
   * It is effective only while your child is taking it and ceases once your child stops taking it.
   * Your child should only take Tamiflu if your child's physician recommends it.

3. PERSONAL STOCKPILING OF TAMIFLU - NOT RECOMMENDED:
   * Some callers request a prescription for Tamiflu for all family members just in case they come down with flu symptoms. They currently are well and have not been exposed to Swine Flu.
   * Your child's doctor is opposed to this practice, as is the CDC and your State's Public Health Department.
   * The supply of Tamiflu is limited and needs to be kept available for patients who have severe symptoms OR have underlying health problems.

4. CALL BACK IF:
   * You have other questions or concerns

Swine Flu EXPOSURE within the last 7 days AND NO respiratory symptoms or fever

1. REASSURANCE:
   * Although your child was exposed to Swine Flu, your child does not have any symptoms.
   * Symptoms usually develop within 4-6 days of exposure to another person with swine flu (7 days is an outer limit).
   * Most likely your child will not get Swine Flu.
   * So far, the symptoms of Swine Flu have been mild to moderate and the same as those seen with regular human flu.
   * Patients recover from Swine Flu with supportive symptom care.

2. CALL BACK IF:
   * You have other questions or concerns

Swine Flu Minor Contact (same school) BUT NO True EXPOSURE (Close Contact) AND asymptomatic

1. REASSURANCE:
   * To catch Swine Flu, your child would need to have close contact with an infected person.
   * Close contact includes kissing or embracing, sharing eating or drinking utensils, close conversation, interactions within 3 feet (1 meter), being in the same child care group or car pool, etc.
   * Because your child did not have close contact, it is highly unlikely that he will develop Swine Flu.
   * Even if your child did develop symptoms of Swine Flu, at this time, anti-viral treatment (Tamiflu) is not indicated for Low Risk children.
   * Patients recover from Swine Flu with supportive symptom care.

2. CALL BACK IF:
   * You have other questions or concerns

REFERENCES

1. ACIP. Prevention and Control of Influenza.Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2008. MMWR Recomm Rep. 2008 Aug 8;57(RR-7):1-60.

2. Centers for Disease Control and Prevention. Update: Infections With a Swine-Origin Influenza A (H1N1) Virus --- United States and Other Countries, April 28, 2009. MMWR Dispatch. April 28 2009;54(Dispatch):1-3.

3. Centers of Disease Control and Prevention (CDC). Interim Guidance on Case Definitions to be Used For Investigations of Swine-Origin Influenza A (H1N1) Cases. CDC Swine Flu Website. Last Accessed 08.07.2009. Available at: http://www.cdc.gov/swineflu/recommendations.htm.

4. Centers of Disease Control and Prevention (CDC). Interim CDC Guidance for Nonpharmaceutical Community Mitigation in Response to Human Infections with Swine Influenza (H1N1) Virus. CDC Swine Flu Website. Last Accessed 08.07.2009. Available at: http://www.cdc.gov/swineflu/mitigation.htm.

5. Centers of Disease Control and Prevention (CDC). Updated Interim Recommendations for the Use of Antiviral Medications in the Treatment and Prevention of Influenza for the 2009-2010 Season. Last updated September 9, 2009. CDC Swine Flu Website. Last Accessed 09.15.2009. Available at: http://www.cdc.gov/swineflu/recommendations.htm.

Author: **Barton D. Schmitt, M.D**

Content Set: **Telephone Triage Protocols - Pediatric Office-Hours Version**

Version Year: **2009**

Last Revised: **9/20/2009**