Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

## Swine Flu

# Interim Guidance—Pregnant Women and Swine Influenza: Considerations for Clinicians

April 28, 2009 1:45 PM ET

## Background

Human infections with a swine influenza A (H1N1) virus that is easily transmissible among humans were first identified in April 2009 with cases in the United States and Mexico. The epidemiology and clinical presentations of these infections are currently under investigation. There are insufficient data available at this point to determine who is at higher risk for complications of swine influenza A (H1N1) virus infection. However, in 1988 a previously healthy 32-year-old pregnant woman was hospitalized for pneumonia and died 8 days later after infection with another variant of swine influenza virus. Pregnant women are also known to be higher risk for seasonal influenza complications and during prior pandemics, and it is reasonable to assume that pregnant women are also at higher risk for swine influenza complications.

Evidence that influenza can be more severe in pregnant women comes from observations during previous pandemics and from studies among pregnant women who had seasonal influenza. An excess of influenza-associated deaths among pregnant women were reported during the pandemics of 1918–1919 and 1957–1958. Adverse pregnancy outcomes have been reported following previous influenza pandemics, with increased rates of spontaneous abortion and preterm birth reported, especially among women with pneumonia. Case reports and several epidemiologic studies conducted during interpandemic periods also indicate that pregnancy increases the risk for influenza complications for the mother and might increase the risk for adverse perinatal outcomes or delivery complications.

## Clinical Presentation

Pregnant women with swine influenza would be expected to present with typical acute respiratory illness (e.g., cough, sore throat, rhinorrhea) and fever or feverishness. Many pregnant women will go on to have a typical course of uncomplicated influenza. However, for some pregnant women, illness might progress rapidly, and might be complicated by secondary bacterial infections including pneumonia. Fetal distress associated with severe maternal illness can occur. Pregnant women who have suspected swine influenza A (H1N1) virus infection should be tested (http://www.cdc.gov/swineflu/specimencollection.htm), and specimens from women who have unsubtypeable influenza A virus infections should have specimens sent to the state public

health laboratory for additional testing to identify swine influenza A (H1N1).

# Treatment and chemoprophylaxis

The currently circulating swine influenza A (H1N1) virus is sensitive to the neuraminidase inhibitor antiviral medications zanamivir and oseltamivir, but is resistant to the adamantane antiviral medications, amantadine and rimantadine. Pregnant women who meet current case-definitions for confirmed, probable or suspected swine influenza A (H1N1) infection (http://www.cdc.gov/swineflu/casedef_swineflu.htm) should receive empiric antiviral treatment. Pregnant women who are close contacts with persons with suspected, probable or confirmed cases of swine influenza A (H1N1) should receive antiviral chemoprophylaxis. These recommendations for treatment and chemoprophylaxis are the same ones used for others who are at higher risk of complications from influenza.

As is recommended for other persons who are treated, antiviral treatment with zanamivir or oseltamivir should be initiated as soon as possible after the onset of influenza symptoms, with benefits expected to be greatest if started within 48 hours of onset based on date from studies of seasonal influenza. However, some data from studies on seasonal influenza indicate benefit for hospitalized patients even if treatment is started more than 48 hours after onset. Recommended duration of treatment is five days, and for chemoprophylaxis is 10 days. Oseltamivir and zanamivir treatment and chemoprophylaxis regimens recommended for pregnant women are the same as those recommended for adults who have seasonal influenza. Recommendations for use of antivirals for pregnant women might change as additional data on the benefits and risks of antiviral therapy in pregnant women become available (http://www.cdc.gov/swineflu/recommendations.htm).

Oseltamivir and zanamivir are "Pregnancy Category C" medications, indicating that no clinical studies have been conducted to assess the safety of these medications for pregnant women. Because of the unknown effects of influenza antiviral drugs on pregnant women and their fetuses, oseltamivir or zanamivir should be used during pregnancy only if the potential benefit justifies the potential risk to the embryo or fetus. However, no adverse effects have been reported among women who received oseltamivir or zanamivir during pregnancy or among infants born to women who have received oseltamivir or zanamivir. Pregnancy should not be considered a contraindication to oseltamivir or zanamivir use. Pregnant women might be at higher risk for severe complications from swine influenza, and the benefits of treatment or chemoprophylaxis with zanamivir or oseltamivir likely outweigh the theoretical risks of antiviral use. Because of its systemic activity, oseltamivir is preferred for treatment of pregnant women. The drug of choice for prophylaxis is less clear. Zanamivir may be preferable because of its limited systemic absorption; however, respiratory complications and medication delivery system challenges that may be associated with zanamivir because of its inhaled route of administration need to be considered, especially in women at risk for respiratory problems.

Several studies have shown that fever during pregnancy is associated with an increased risk of birth defects and other adverse outcomes. For this reason, fever in pregnant women should be treated. Acetaminophen appears to be the best option for treatment of fever during pregnancy.

# Other ways to reduce risk for pregnant women

The risk for swine influenza A (H1N1) might be reduced by taking steps to reduce the chance of being exposed to respiratory infections. There is no vaccine available yet to prevent swine influenza A (H1N1). These actions include frequent handwashing, covering coughs, and having ill persons stay home, except to seek medical care, and minimize contact with others in the household who may be ill with swine flu. Additional measures that can limit transmission of a new influenza strain include voluntary home quarantine of members of households with confirmed or probable swine influenza cases, reduction of unnecessary social contacts, and avoidance whenever possible of crowded settings. If used correctly, facemasks and respirators may help reduce the risk of getting influenza, but they should be used along with other preventive measures, such as avoiding close contact and maintaining good hand hygiene. A respirator that fits snugly on the face can filter out small particles that can be inhaled around the edges of a facemask, but compared with a facemask it is harder to breathe through a respirator for long periods of time.

# Breastfeeding considerations

Women who are breastfeeding can continue while receiving antivirals. However, women who are ill with swine influenza A (H1N1) should take steps to reduce the risk to their infants, such as frequent hand washing and possibly wearing a mask (see below). The risk for swine influenza transmission through breast milk is unknown.  However, reports of viremia with seasonal influenza infection are rare.

Efforts to identify the risk for pregnant women from swine influenza A (H1N1) during 2009 are underway. Enhanced surveillance for hospitalized patients with swine influenza A (H1N1) has been initiated. Additional information about swine influenza is available.

- Links to non-federal organizations are provided solely as a service to our users. These links do not constitute an endorsement of these organizations or their programs by CDC or the federal government, and none should be inferred. CDC is not responsible for the content of the individual organization Web pages found at these links.

## File Formas Help:

How do you view different file formats(PDF, DOC, PPT, MPEG) on this site?

- Page last reviewed April 28, 2009 1:45 PM ET
- Page last updated April 28, 2009 1:45 PM ET
- Content source: Centers for Disease Control and Prevention

---

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov