

Guideline: Maternal Influenza, Isolation and Infection Precautions for the Mother and Newborn

Introduction

Over half of persons who have required hospitalization because of novel influenza A (H1N1) virus infection have had an underlying medical condition or have been pregnant. Diagnosis has been challenging in some cases. DFA tests are reliable if positive and the patient has upper respiratory symptoms but with lower respiratory infection the DFA may be negative, so PCR may be necessary.

NOTE: if the postpartum patient has an adult ID consult, the recommendations from the adult ID physician are medical guidelines for the patient but are not LPCH Infection Control guidelines. Therefore, LPCH Infection Prevention & Control must approve changes to isolation or visitation to the nursery.

While the risk for transmission of novel H1N1 influenza from mother to fetus is unknown, the newborn will be considered to be potentially infected if delivery occurs during the 2 days before through 7 days after illness onset in the mother. Infection control procedures developed for novel H1N1 flu will be used for the newborn during the hospital stay.

In general, guidance for control of novel H1N1 influenza infection in obstetric settings is consistent with that in other healthcare settings but also includes special considerations for prevention of infection in the newborn.

- For additional information on the LPCH intranet and the complete H1N1 procedure for hospitalized patients:
(<https://intranet.lpch.org/pdf/departments/infectionControl/swine-flu/H1N1FluInpatientProcess.pdf>).

Patient Placement Antepartum

- All antepartum patients are assessed for signs and symptoms of influenza-like illness (ILI) at the time of arrival to Labor and Delivery:
 - Fever (100 or greater) **AND** one of the following:
 - Cough
 - Sore throat
 - Runny nose or
 - Nasal congestion
- When ILI is present, obtain a viral DFA nasopharyngeal specimen.
- Patients with ILI are placed on airborne N95 and contact isolation precautions, with eye protection, in accordance with hospital procedure.
- Infection Prevention and Control Department (IPCD) must be notified by OB team about any hospitalized antepartum/postpartum

patient undergoing evaluation and/or treatment for influenza (ph 497-8447 or kmathews@lpch.org).

- During delivery, the ILI symptomatic mother wears a snugly fitted surgical mask just prior to infant delivery for infant protection. OB team should wear mask/goggles throughout labor and delivery period.
- **Isolation may be discontinued when the patient is asymptomatic with an initial negative Direct Fluorescent Antibody test (DFA) or Polymerase Chain Reaction test (PCR) and approval by the LPCH Infection Prevention and Control Department (ph 497-8447). If a patient has a subsequent DFA that is positive, a negative PCR is necessary to discontinue isolation.**

Chemoprophylaxis for the Mother

- Per CDC guidelines Oseltamivir should be initiated for antepartum/postpartum patients with suspected infection and treatment should not be postponed for test results.

Agent, group	Treatment	Chemoprophylaxis
Oseltamivir		
Adults	75-mg capsule twice per day for 5 days	75-mg capsule once per day
Zanamivir		
Adults	Two 5-mg inhalations (10 mg total) twice per day for 5 days	Two 5-mg inhalations (10 mg total) once per day

Postpartum Infection Prevention Precautions (during and after hospitalization)

1.) The postpartum mother who has influenza-like-illness or confirmed influenza, will avoid close contact with her infant until the following conditions have been met:

- She has received antiviral medications for 48 hours,
- **AND** her fever has fully resolved for at least 24 hours, and she can control her cough and secretions.
- **NOTE: Mother must be made aware that meeting these conditions may reduce, but not eliminate, the risk of transmitting influenza to the baby.**

2. When these conditions are met, the mother may be allowed to be in contact with her infant, in her isolation room, IF she agrees to do the following:

- Wear a snugly fitting surgical mask, change to a clean gown or clothing, perform hand hygiene before contact with the infant and practice cough etiquette when in contact with her infant. Nurses will teach the mother cough etiquette technique and confirm ability to perform.
- She continues these protective measures, both in the hospital setting and at home, for at least 7 days after the onset of influenza symptoms or until afebrile for 24 hours, whichever is longer, http://www.cdc.gov/h1n1flu/guidance_homecare.htm#c. If symptoms last more than 7 days, she should discuss the symptoms with her doctor.

3. The postpartum patient who was **DFA or culture positive previously**, and is now DFA negative but still symptomatic requires a **peds ID consult** and a PCR to determine if she is not infectious and whether or not she may enter the NICU or other nursery.

4.–The asymptomatic postpartum patient who was previously DFA or PCR positive will require a negative PCR on a nasopharyngeal specimen to visit any of the LPCH nurseries. Arrangements for visitation will be made by the mother's physician.

5. The postpartum patient whose previous symptoms completely resolve and DFA or PCR is negative may have isolation discontinued with the approval of LPCH Infection Prevention and Control.

6. If the postpartum patient is a SUH patient or an outpatient and has had influenza and is asymptomatic, contact LPCH Infection Prevention and Control for guidance for newborn visitation. Evidence of a negative PCR will be required. The resource nurse will advise Infection Prevention and Control of transfers.

Breastfeeding

- Mothers who have ILI and are on isolation are encouraged to express their milk. Mother will wear a surgical mask, wash her hands and wear gloves when expressing milk. The breast milk bottle will be wiped with a sanicloth germicide and appropriately labeled before taking it to the refrigerated storage area. Infants should be fed expressed milk by healthy family members or hospital personnel.

- Breast milk is not thought to be a potential source of influenza virus infections. Expressed milk from mothers with influenza can be safely fed to their newborn infants.
- Antiviral medication treatment or prophylaxis is not a contraindication for breastfeeding.
- The postpartum mother who has influenza-like-illness or confirmed influenza, will avoid direct feeding of her infant until the following conditions have been met: she has received antiviral medications for 48 hours, **AND** her fever has fully resolved for at least 24 hours, and she can control her cough and secretions. **NOTE: Mother must be made aware that meeting these conditions may reduce, but not eliminate, the risk of transmitting influenza to the baby.**

Algorithm for Patient Placement for Newborn

- All ILI exposed (well or ill) newborns will be admitted to a NICU isolation room or a cohort in the NICU and placed on contact and airborne N95 isolation with eye protection. Contact Infection Prevention and Control when establishing a cohort. A separate cohort is needed for well vs. sick infants.
- If both NICU isolation rooms are full:
 - Ill newborns requiring critical care will be cohorted on isolation. All ill newborns will be placed on airborne N95 and contact precautions, with eye protection available at each bed space. Appropriate isolation precautions signage will be visible at the bed space and there will be distance of 6 feet placed between bassinets.
 - Well newborns will be cohorted in a designated nursery, preferably the PSCN, placed on airborne N95 and contact precautions, with eye protection available at each bed space. Appropriate isolation precautions signage will be visible at the bed space and there will be distance of 6 feet placed between bassinets.

Isolation Precautions for the Newborn

- Airborne N95 and Contact precautions, with eye protection are required for care of the newborn, potentially exposed to influenza.
- The newborn is closely monitored for signs and symptoms of influenza, including diarrhea. If signs or symptoms develop, testing will be performed, isolation will be continued, and treatment with antiviral medications will be considered.

- For mothers who are DFA or PCR positive for prolonged periods, and the newborn remains well, the infant can come out of isolation 7 days after birth. The mother remains on isolation until PCR negative.

Chemoprophylaxis

Chemoprophylaxis of infants less than 3 months of age is not typically recommended, as there are very limited data available on the safety and effectiveness of chemoprophylaxis for infants less than 3 months. However, in situations which are judged to be critical, chemoprophylaxis with oseltamivir can be considered. Contact the Pediatric Infectious Disease Service.

Discontinuation of Isolation: Newborn

Isolation of the newborn will be consistent with isolation of his/her mother i.e., if a mother's PCR is negative and she is asymptomatic, the newborn returns to routine newborn care practices, including rooming in.

Treatment

Children under one year of age are at high risk for complications from seasonal human influenza virus infection. The characteristics of human infection novel (H1N1) influenza virus are still being studied, and it is not known whether infants are at higher risk for complications associated with novel (H1N1) influenza virus infection compared to older children and adults. Oseltamivir is not licensed for use in children less than 1 year of age. However, limited safety data on oseltamivir treatment for seasonal influenza in children less than one year of age suggest that severe adverse events are rare. Because infants experience high rates of morbidity and mortality from influenza, infants with novel (H1N1) influenza virus infections may benefit from treatment using oseltamivir. Additional information can be found at <http://www.cdc.gov/H1N1flu/eua/>

Tables 1 and 2, Emergency Use Authorization of Tamiflu (oseltamivir).

Table 1. Dosing recommendations for antiviral treatment of children younger than 1 year using oseltamivir.

Age	Recommended treatment dose for 5 days
<3 months	12 mg twice daily
3-5 months	20 mg twice daily
6-11 months	25 mg twice daily

Table 2. Dosing recommendations for antiviral chemoprophylaxis of children

younger than 1 year using oseltamivir.	
Age	Recommended prophylaxis dose for 10 days
<3 months	Not recommended unless situation judged critical due to limited data on use in this age group
3-5 months	20 mg once daily
6-11 months	25 mg once daily

Healthcare providers should be aware of the lack of data on safety and dosing when considering oseltamivir use in a seriously ill young infant with confirmed novel (H1N1) influenza virus infection or who has been exposed to a confirmed novel (H1N1) influenza case, and carefully monitor infants for adverse events when oseltamivir is used. Additional information on oseltamivir for this age group can be found at: Swine Flu: Emergency Use Authorization (EUA) of Medical Products and Devices <http://www.cdc.gov/h1n1flu/eua/tamiflu.htm>.

Visitation

- Only well visitors may have contact with the mother and newborn.
- Father's who have been exposed to influenza within 7 days and are completely asymptomatic, may visit with a surgical mask and gown. Hand washing must be performed before contact with the mother or infant. If father develops ILI, he may not visit.
- Father's who have had ILI within the last 7 days must be asymptomatic and without fever for at least 24 hours before they will be allowed to visit. The father must don a surgical mask and gown. Hand washing must be performed before contact with mother or baby. If father develops ILI, he may not visit.
- Siblings under 16 years of age are not allowed to visit during influenza season. IPCD will announce when influenza season has ended.

Discharge Teaching

Parents will receive training on how to protect their newborn from being exposed to influenza after leaving the hospital. Steps to help prevent the spread of germs and protect the infant's health include:

- Cover your nose and mouth with a tissue when you cough or sneeze, or sneeze into your sleeve. Throw the tissue in the trash after you use it. (If mother is symptomatic at time of discharge, send home with sufficient surgical masks.)
- Wash your hands, for 15-20 seconds, often with soap and warm water, especially after you cough or sneeze.
- Use alcohol-based hand sanitizers. Rub the gel on your hands until dry.
- Avoid touching your eyes, nose or mouth. Germs spread this way.
- Try to avoid close contact with sick people. (If you are pregnant and you live or have close contact with someone who has H1N1 flu, talk to your doctor about medicines to prevent flu.)
- Have a plan to care for sick family members.
- Stock up on household, health, and emergency supplies, such as water, Tylenol®, non-perishable foods.

Readmission of recently discharged infant with ILI

Recently discharged infants with ILI may not be admitted to the satellite nurseries. These infants will be admitted to the NICU isolation rooms.

- . **REFERENCES:** http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm
<http://www.cdc.gov/h1n1flu/guidance/obstetric.htm>
http://www.cdc.gov/h1n1flu/clinician_pregnant.htm
<http://www.cdc.gov/h1n1flu/recommendations.htm>

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