Interim Guidance: Considerations Regarding 2009 H1N1 Influenza in Intrapartum and Postpartum Hospital Settings

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This interim guidance has been updated to replace previously posted guidance entitled “Considerations Regarding Novel H1N1 Flu Virus in Obstetric Settings”, dated July 6, 2009. This document clarifies clinical considerations related to management of suspected or confirmed maternal infection with 2009 H1N1 influenza virus infection within labor and delivery, postpartum, and newborn care settings in hospitals. A cautious approach to the management of ill mothers and their newborns is still recommended, but several options are provided based on hospital configuration, staffing, and surge capacity.

Summary

Pregnant women who enter the hospital setting with illness from suspected or confirmed 2009 H1N1 influenza virus infection represent a special population warranting clinical management that considers the specific risks that 2009 H1N1 virus exposure poses to the newborn infant.

The location of the mother and newborn should be considered based on postpartum and/or newborn ward configuration and existing infection control policies. As clinically indicated providers should consider a two-step process to manage postpartum and newborn care.

**Step 1:** Providers should consider temporarily separating the infected mother from the newborn within her room (in an isolette) or in separate rooms until the risk of infectious transmission is reduced, defined as having met ALL of the following criteria:

- The mother has received antiviral medications for at least 48 hours and;
- The mother is without fever for 24 hours without antipyretics and;
- The mother can control cough and respiratory secretions.

Once these criteria are met, the mother and infant can initiate close contact throughout the postpartum period with droplet precautions and the mother can begin infant feedings.

**Step 2:** Once the mother and infant are able to initiate close contact, the following guidance is offered for mothers immediately prior to feeding and handling the infant in order to protect the newborn from droplet exposure:

- The mother should wash her hands with soap and water;
• The mother should put on a face mask;
• The mother should observe all respiratory hygiene/cough etiquette guidelines. (/flu/professionals/infectioncontrol/resphygiene.htm)

These precautions should be followed for 7 days after symptom onset or 24 hours after resolution of symptoms, whichever is longer.

Healthy term newborns of infected mothers with suspected or confirmed 2009 H1N1 should be considered exposed, rather than infected, if they are born in the hospital setting following infection control guidelines. These infants should be observed for signs of infection. Unless clinically indicated, these newborns should be cared for with standard precautions whether they are cared for in the mother’s room or in the term newborn nursery setting.

Background

2009 H1N1 influenza virus appears to be transmitted from person to person through close contact in ways similar to seasonal influenza viruses. Large droplet transmission is believed to be the primary mode of spread, and influenza virus can also potentially be transmitted by contact with mucous membranes (/h1n1flu/guidelines_infection_control.htm) or small particle droplet nuclei.

Pregnant women infected with 2009 H1N1 influenza virus have been more likely to suffer severe complications than other population groups. The epidemiology and spectrum of maternal illness in the immediate postpartum period are not yet fully understood and are under investigation. The observed severity of illness among pregnant women appears greater than that observed with seasonal influenza. There is insufficient data available on transmission of maternal 2009 H1N1 influenza virus infection to the newborn at delivery and immediately postpartum. Currently, there have been no reports of 2009 H1N1 virus infection in the fetus transmitted via the placenta. However, at delivery the newborn may be exposed to infected respiratory secretions through droplet transmission from a symptomatic mother. The newborn’s immune system lacks antigenic experience with microorganisms, including viruses. Some immunologic competence is transferred via maternal antibodies crossing the placenta during the third trimester. Further immunologic maturity is gradually acquired through antigenic experience during the first few months of life. Data currently show that infants under 1 year of age are at risk of severe illness, hospitalization, and death secondary to 2009 H1N1 virus infection. Newborn infants of mothers with suspected or confirmed 2009 H1N1 during the intrapartum period lack specific protective antibodies that might be acquired by a fetus after maternal immunization with 2009 H1N1 vaccine or recovery from infection. In addition, antiviral chemoprophylaxis is not recommended for infants less than 3 months where medication effects are unknown. Separating the mother and newborn in the immediate postpartum period may substantially reduce the risk of droplet exposure and infection during a period when the newborn has little immune protection.

Over 4 million live births occur in the United States each year and approximately 99% of these births occur in hospital settings. Since maternity and newborn care hospitals vary in physical configuration, each institution should consider their appropriate space and staffing needs to adequately isolate the mother and protect the newborn. In addition, careful consideration should be given to avoid exposure of other newborns in the newborn nursery, special care unit, or intensive care unit to suspected or confirmed 2009 H1N1 virus-infected individuals. This information is intended to aid hospitals and clinicians in applying broader CDC interim guidance on infection control to the clinical management of intrapartum and postpartum hospital care of mothers with confirmed, probable, or suspected 2009 H1N1 influenza virus infection and their newborns.

These considerations relate only to care of the suspected or confirmed 2009 H1N1 virus-infected mother in stable condition and the healthy term newborn cared for within the main labor, delivery,
Definitions

| Influenza like illness (ILI) (/h1n1flu/clinician_pregnant.htm) | Based on clinical judgement. Patients with uncomplicated disease due to confirmed novel influenza A (H1N1) virus infection have experienced fever, chills, headache, upper respiratory tract symptoms (cough, sore throat, rhinorrhea, shortness of breath), myalgias, arthralgias, fatigue, vomiting, or diarrhea. People may be infected with influenza virus, including 2009 H1N1 and have respiratory symptoms without a fever. |
| Standard precautions (/ncidod/dhqp/gl_isolation_standard.html) | Infection prevention practices that apply to all patients, regardless of suspected or confirmed infection status, in any setting in which healthcare is delivered. |
| Contact precautions (/ncidod/dhqp/gl_isolation_contact.html) | Measures to prevent transmission of infectious agents, including epidemiologically important microorganisms, which are spread by direct or indirect contact with the patient or the patient’s environment |
| Droplet precautions (/ncidod/dhqp/gl_isolation_droplet.html) | Measures to prevent transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions. |

Labor/Antepartum Considerations

Pregnant women who enter the hospital setting with suspected or confirmed 2009 H1N1 influenza should be placed in a private room and if hospitalized, should be cared for using current infection control guidance throughout hospitalization. This includes a single-patient room when possible, the use of facemask by patients when outside of the room, standard precautions for all patient care, use of a respirator when within 6 feet of an infectious patient, and in situations where respirator supplies are limited, referral to the prioritization recommendations in the infection control guidance. Diagnostic testing and empiric antiviral therapy with a neuraminidase inhibitor (oseltamivir or zanamivir) should be initiated immediately. Do not delay antiviral treatment pending diagnostic testing results. A negative result of rapid influenza diagnostic testing or immunoflorescence does not exclude 2009 H1N1 virus infection.

Accompanying healthy adults who are necessary for the woman’s emotional well-being and care may be present in labor/antepartum room. Inform and instruct patient and family of procedures for infection control for the mother and newborn. Because of the many benefits of breast milk, including newborn protection against respiratory illnesses, encourage the mother to provide her breast milk as an important method of protection for the infant.

Delivery/Intrapartum Considerations

In order to protect the infant from exposure to respiratory secretions during or immediately after delivery, the following guidance is provided:

- The mother should use a face mask throughout labor, as tolerated.
- Adhere to current infection control guidance. This includes a single-patient room when possible, the use of facemask by patients when outside of the room, standard precautions for all patient care, use of a respirator when within 6 feet of an infectious patient, and in situations where respirator
supplies are limited, referral to the prioritization recommendations in the infection control guidance. During delivery, all persons should wear a surgical mask with face shield, gloves and gown.

- Upon delivery of the newborn, immediately separate the newborn to an open warmer by a distance of > 6 feet. If stable, the newborn may remain in the delivery room prior to transition to newborn/postpartum care.
- Bathe the infant as soon as the temperature is stable.

Recovery/Postpartum Considerations

As clinically indicated, providers should consider a two-step process to manage postpartum and newborn care. **Step 1:** During the immediate recovery/postpartum period, providers should consider temporarily separating the infant from the mother until ALL of the following criteria are met:

- The mother has received antiviral medications for at least 48 hours and;
- The mother is without fever for 24 hours without antipyretics and;
- The mother can control cough and respiratory secretions.

The location of postpartum mothers and newborns requires careful consideration based on each hospital’s physical configuration, availability of isolation rooms, and number of patients in need of isolation. Additionally, careful consideration should be made to reduce the risk of inadvertent transmission of infection to other unexposed maternity patients, healthy term infants, and preterm or critically ill newborns in designated newborn nurseries, special care nurseries, or intensive care units.

The most appropriate option for the placement of the mother and newborn should be considered based on hospital configuration and existing infection control policies. One option is to co-locate the newborn in the same room as mother within an isolette. If an isolette is not feasible or available, the newborn can be placed in an open bassinet at a distance of greater than 6 feet away, ideally separated by a plexiglass barrier or curtain. Depending on staff/resources, the newborn may also be placed in separate room, including the newborn nursery using standard precautions. Infant care should be provided by a healthy family or staff member.

Newborn Care/Infant Feeding Considerations

Otherwise healthy term newborns of infected mothers with suspected or confirmed 2009 H1N1 should be considered exposed, rather than infected, if they are born in the hospital setting following infection control guidelines. These infants should be observed for signs of infection. Unless clinically indicated, these newborns should be cared for with standard precautions in the term newborn nursery setting.

Throughout the course of temporary separation (**Step 1**), all feedings should be provided by a healthy caregiver until criteria are met for close contact.

The mother who plans to breastfeed should be fully supported as it is the best way to protect the infant against 2009 H1N1 virus and other respiratory pathogens. However, the mother who acquires 2009 H1N1 virus infection during the intrapartum period may not develop passive antibodies to further protect her newborn baby via breast milk until 2 weeks after infection. A lactation consultant should be involved in the care of the mother and infant to assure effective establishment of breastfeeding. Immediately following delivery, the mother should be assisted and supported to express her milk/colostrum. The mother’s milk should be fed to the newborn by a healthy caregiver until criteria are met for close contact (see above). Unlike other body fluids and secretions, human milk is not considered a body fluid to which standard, droplet, or contact precaution recommendations apply and milk from an infected mother is not considered infectious. Anti-viral medication use by the mother is not a contraindication to breastfeeding.
Step 2: Once the mother and infant are able to initiate close contact, the following guidance is offered for mothers immediately prior to feeding and caring for the infant (including direct breastfeeding) in order to protect the newborn from droplet exposure:

- The mother should wash her hands with soap and water;
- The mother should put on a face mask;
- The mother should observe all respiratory hygiene/ cough etiquette guidelines.

These precautions should be followed for 7 days after symptom onset or 24 hours after resolution of symptoms, whichever is longer. During this time, the mother should refrain from visiting the newborn nursery. Instead, the infant should be brought to the mother’s room for feeding and care. Continue to monitor the infant closely for evidence of influenza illness and, should symptoms develop, test for influenza virus infection. [Antiviral chemoprophylaxis of the infant is currently not recommended, due to limited data on safety and efficacy. However, oseltamivir treatment, as clinically indicated, is authorized for infants less than 1 year of age under FDA Emergency Use Authorization.](/h1n1flu/eua/tamiflu.htm)

### Visitation, Hospital Discharge, and Home Considerations

In the hospital, limit visitors to healthy persons who are necessary for the patient’s emotional well-being and care. At discharge, inform and instruct the mother, family, and other caregivers on ways to prevent the risk of transmission of 2009 H1N1 virus and other viral infections, and how to monitor for signs and symptoms of illness in the infant. Assure appropriate post-partum and newborn follow-up. Support and encourage the mother to continue breastfeeding as an important method of protection for the infant, and assure lactation support follow-up.

Cases of 2009 H1N1 have been reported in apparently healthy infants at home weeks after discharge from the hospital. Intra-family spread is common with 2009 H1N1 influenza, just as with seasonal influenza. It is possible that the infant may become infected in the home setting by exposure to droplets from ill family members or asymptomatic family members who are in the prodrome period. This concern underscores the need for all ill persons to avoid contact with the newborn. All persons in the home with suspected or confirmed 2009 H1N1 virus infection, should avoid close contact with the newborn until they have been without fever for 24 hours without medication or until 7 days after symptom onset, whichever is longer. If avoidance is not feasible, they should pay special attention to hand hygiene, environmental hygiene (e.g. cleaning frequently touched surfaces) and covering coughs whenever in the vicinity of the newborn. This is important for protection against 2009 H1N1 virus infection as well as other respiratory infections. In addition, all persons who live with or provide care for infants younger than 6 months of age (e.g., parents, guardians, siblings, and day care providers) should be vaccinated against 2009 H1N1 as well as seasonal influenza.

### Prevention

Prevention of severe illness with 2001 H1N1 influenza in pregnant women should ideally occur through prenatal care and vaccination well before the intrapartum period.

### Additional Resources:

- H1N1 Flu (Swine Flu): Resources for Obstetric Health Care Providers ([/H1N1flu/clinician_pregnant.htm](/H1N1flu/clinician_pregnant.htm))
- Interim Guidance on Infection Control Measures for 2009 H1N1 Influenza in Healthcare Settings, Including Protection of Healthcare Personnel ([/h1n1flu/guidelines_infection_control.htm](/h1n1flu/guidelines_infection_control.htm))
Updated Interim Recommendations for Obstetric Health Care Providers Related to Use of Antiviral Medications in the Treatment and Prevention of Influenza for the 2009-2010 Season (/h1n1flu/vaccination/acip.htm)

2009 H1N1 Influenza Vaccine and Pregnant Women: Information for Healthcare Providers (/h1n1flu/vaccination/acip.htm)

Interim Guidance for 2009 H1N1 Flu (Swine Flu): Taking Care of a Sick Person in Your Home (/h1n1flu/guidance_homecare.htm)

2009 H1N1 Flu (Swine Flu) and Feeding your Baby: What Parents Should Know (/h1n1flu/infantfeeding.htm)

Interim Recommendations for Clinical Use of Influenza Diagnostic Tests During the 2009-10 Influenza Season (/h1n1flu/guidance/diagnostic_tests.htm)