Considerations Regarding 2009 H1N1 in Intrapartum and Postpartum Hospital Settings

Katherine Shealy, MPH, IBCLC, RLC
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
On behalf of the 2009 H1N1 Maternal Health Team

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

- Proposed guidance would replace *"Considerations Regarding Novel H1N1 Flu Virus in Obstetric Settings"* dated July 6, 2009.
- Applies to intrapartum and postpartum hospital settings for uncomplicated term deliveries with guidance upon discharge to home.
- Incorporates feedback from AAP Committee on Fetus and Newborn (COFN) and Perinatal Section Executive Committee (SoPPe).
- Consistent with updated infection control guidance.
- Considers current design and staffing of labor, delivery, recovery, and postpartum (LDRP) wards.

PRIOR Guidance*

- Mother should consider avoiding close contact with infant until:
  - Antiviral medication for 48 hours
  - Fever has fully resolved
  - She can control coughs and secretions
- Before these conditions are met:
  - Newborn cared for in separate room by well caregiver
  - Mother encouraged to pump breast milk
- Infant considered as potentially infected

*Considerations Regarding Novel H1N1 in Obstetric Settings (July 6, 2009)

Feedback on Prior Guidance

Solicited:

- External experts in:
  - Infection Control
  - Influenza
  - Obstetrics and Gynecology
  - Neonatology
  - Pediatrics
  - Human lactation
  - Immunobiology
- American Academy of Pediatrics
  - Committee on Fetus and Newborn
  - Section on Perinatal Practices
  - Section on Breastfeeding
- Academy of Breastfeeding Medicine
- International Lactation Consultant Association

Received:

- Feedback during COCA and other conference calls
- Feedback at professional meetings
- More than 90 emails/phone calls
  - Pediatricians
  - Lactation Consultants
  - Epidemic Response Coordinators
  - Medical Officers
  - State Health Departments
  - State Breastfeeding Coalitions
  - Health Professional Associations

Major Themes in Feedback on Prior Guidance

Content:

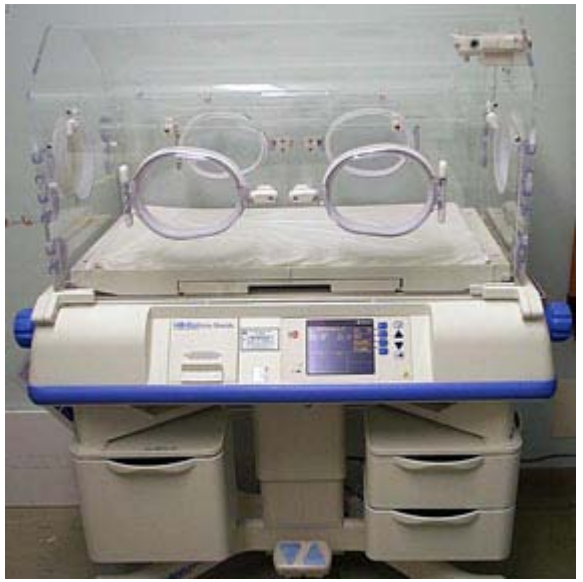
- Limited evidence on necessity for separation
- Inconsistent with analogous international guidance
- Limited evidence for infection of the fetus

Application:

- Inappropriate application of guidance
- Configuration and staffing of LDRP and newborn nursery
- Ability to implement isolation protocols

Consequences:

- Increased risks to infant due to separation
  - Supplemented feeding
  - Lactation failure
  - Exposure to potentially infected individuals
- Exposure of the newborn
  - Other infants in the hospital
  - Potentially infected individuals at home



Newborn Isolette

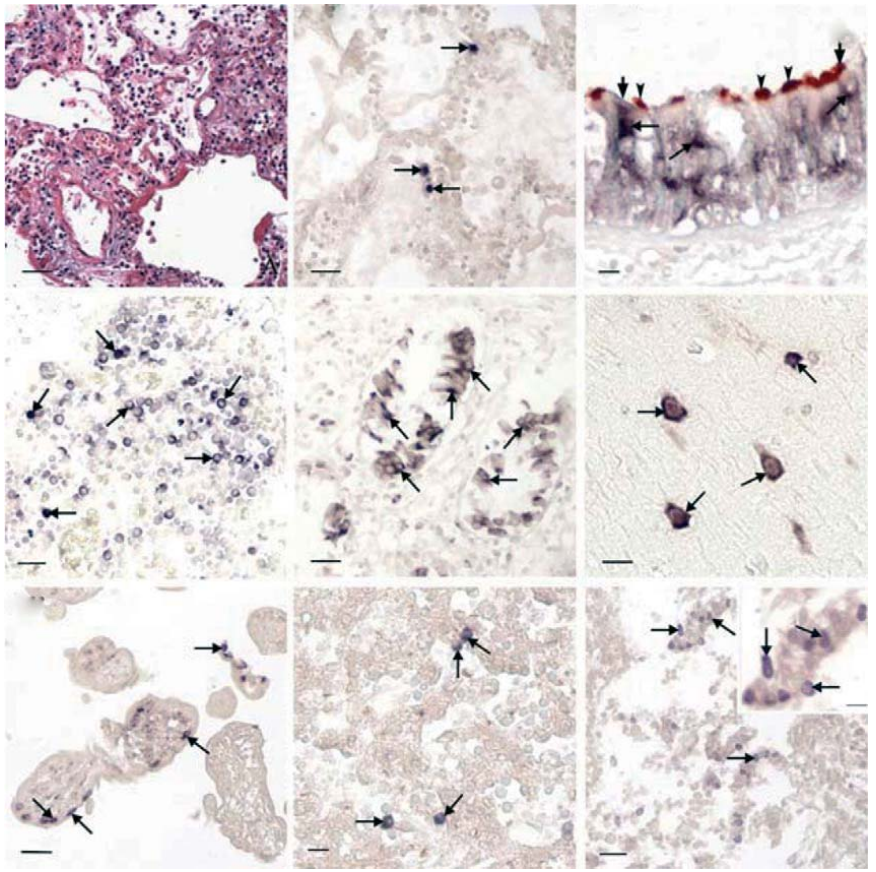
Modes of 2009 H1N1 Transmission: Considerations for the Fetus

Placental Transmission

- Effects of H1N1 influenza on the fetus are unknown and difficult to predict
- In seasonal influenza, viremia is believed to occur infrequently and placental transmission appears to be rare – may differ with novel influenza strains
- For 2009 H1N1, no confirmed reports of placental transmission – may possibly occur in severe maternal illness.
- Gu et al. *Lancet* 2007. Placental transmission of H5N1

THE LANCET

Gu et al. H5N1 infection of the respiratory tract and beyond: a molecular pathology study. *Lancet* 2007



Modes of 2009 H1N1 Transmission: Considerations for the Newborn

Postpartum Transmission

- Possible for the mother with ILI and fever.
- Small particle aerosols from infectious mother to newborn in close vicinity.
- Droplet exposure to newborn mucosal surfaces.
- Inoculation of newborn mucosal surfaces by him/herself or caregivers.

Vulnerability of the Newborn

- Immature immune system
  - Less protection against droplet infection
  - Significantly affected by feeding
    - **Mother's milk establishes immune response** – regardless of viral-specific antibodies
    - **Formula impairs immune response** – 3.5 times greater risk of severe respiratory infection
- Requires constant close contact, esp. with mother
  - Systemic regulation:
    - Cardio-respiratory, neurobehavioral, and thermoregulation
  - Breastfeeding:
    - Spontaneous and effective latch
- Multiple opportunities for exposure to droplet infection from:
  - Health care providers, caregivers, siblings
- Ineligible for preventive pharmacology:
  - Vaccine
  - Chemoprophylaxis

Infection Control in Intrapartum and Postpartum Hospital Settings: General Considerations

- Keep newborns separated from ill caregivers and providers.
- Avoid transmission from infected infants to uninfected/critically ill infants (e.g. NICU).
- Include flexibility based on LDRP configuration.
- Assure the availability of mother's milk to the newborn.
- Provide guidance for discharge to home where newborn may be more vulnerable.

NEW Guidance

Cautious approach, provides for flexibility based on hospital configuration, staffing, and surge capacity.

- Priority focus: Minimizing infant's risk of exposure to droplets
- Considers infant ***exposed*** rather than ***infected***
- Provides two-step process for postpartum and newborn management
- Provides guidance for hospital discharge planning

NEW Guidance

Intrapartum (Labor/Delivery)

- Place surgical mask on ill mother during labor & delivery, if tolerable
- Treat mother with antiviral medication as soon as possible
- **Step 1:**
  - Temporarily separate mother and infant in immediate postpartum period (>6 feet) until infection control criteria are met
  - Bathe the infant early, consider infant exposed, not infected, unless otherwise clinically indicated

NEW Guidance

Recovery/Postpartum

- Place mother in single-patient (isolation) room
- Newborn can accompany mother, if placed in isolette
  - If isolette unavailable, consider bassinette/curtain at > 6 feet
    - If not feasible, infant in newborn nursery with standard precautions if well; infant should be placed in isolation if suspected H1N1 infection
- **Step 1:** Infant is fed by healthy caregiver
  - Encourage/support breastfeeding
  - Assist mother to express milk
  - Give all expressed milk to newborn as soon as possible
- **Step 2:** Mother initiates contact (and direct feeding) after:
  - Afebrile for 24 hours
  - Antivirals for 48 hours
  - Coughs and secretions can be covered/controlled

NEW Guidance

Postpartum/Discharge Planning

- **Step 2:** Precautions continue for 7 days after symptom onset and symptom-free for 24 hours:
  - Adhere to strict hand hygiene
  - Change to clean gown or clothing
  - Use cough etiquette and consider wearing a mask
  - Instruct family on newborn care at home
    - Strict hand hygiene, cough etiquette
    - Limit contacts to newborn
    - Instruct caregivers to obtain H1N1 vaccine

Additional CDC Resources

- http://www.cdc.gov/H1N1flu/clinician_pregnant.htm
- http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm
- http://www.cdc.gov/h1n1flu/vaccination/acip.htm
- http://www.cdc.gov/h1n1flu/vaccination/acip.htm
- http://www.cdc.gov/h1n1flu/guidance_homecare.htm
- http://www.cdc.gov/h1n1flu/infantfeeding.htm
- http://www.cdc.gov/h1n1flu/guidance/diagnostic_tests.htm

Conclusions

- **During an influenza pandemic, pregnant women are expected to be a high-risk population, based on the experience with previous pandemics and with seasonal influenza**
- **Data available thus far suggest that pregnant women are at increased risk for complications and death from 2009 H1N1 influenza**

Conclusions

- **Pregnant women should be informed about the signs and symptoms of 2009 H1N1 influenza**
- **Pregnant women who present with signs and symptoms consistent with influenza should be treated empirically with oseltamivir**
- **Post-exposure prophylaxis with zanamivir or oseltamivir can be considered for pregnant women**

Conclusions

- **Healthy infants born to mothers with suspected/confirmed 2009 H1N1 flu should be considered** *exposed,* **not** *infected*
- **If a mother has suspected/confirmed 2009 H1N1 infection during labor/delivery, important steps can be taken in the hospital to protect the newborn from infection**
  - **Step 1:** Temporarily separate mother and newborn in order to prevent droplet transmission to the newborn when the mother is most infectious
  - **Step 2:** Implement precautions for mother and other household contacts to prevent droplet transmission to the infant

Conclusions

Infant's primary option for immunologic protection against respiratory infection is the mother's milk.

Encourage & support the mother to breastfeed.

Minimize risk of lactation failure that accompanies separation.

- Eliminate all unnecessary supplemental feeds
  - Assist to initiate milk expression as soon as possible.
  - Ensure appropriate milk collection and handling, minimize waste.
  - Feed the infant all available mother's milk.
  - Consider obtaining donor milk if mother's milk is insufficient.
- Prioritize lactation education and support to mothers with H1N1
  - Initiate feeding at the breast as soon as Step 2 criteria are met.
  - Directly observe feeding at the breast at least once per shift.
- Ensure adequate breastfeeding prior to hospital discharge

Conclusions

- Hospital discharge planning:
  - Counsel on ways to protect the newborn against H1N1 and other viral infections in the home.
  - Educate on signs and symptoms of infant infection and steps to take if any are observed.
  - Assure appropriate follow-up:
    - Postpartum
    - Pediatric
    - Lactation support
- Preventing 2009 H1N1 infection:
  - Vaccinate pregnant women and caregivers of infants < 6 months of age.
  - Encourage and support 6 months exclusive breastfeeding and continued breastfeeding at least 12 months.

Conclusions

- **Both seasonal and 2009 H1N1 influenza vaccines recommended for pregnant women**
- **2009 H1N1 vaccine safety expected to be similar to seasonal influenza vaccine**
- **Providers should contact state health department to express interest in obtaining 2009 H1N1 vaccine**

Questions/Discussion