

TO: San Joaquin County Clinicians
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NOTE: Please distribute to clinicians & other medical staff in your practice.

INFLUENZA IN PREGNANCY: SEASONAL & 2009 H1N1 INFECTIONS

Influenza (flu) activity appears to be leveling off but remains higher than expected for this time of yr. 99% of circulating flu is the 2009 H1N1 ("H1N1"), but seasonal strains are expected this winter. (February is the #1 peak month during regular flu seasons.) US data show that pregnant women are 4x more likely to be hospitalized with H1N1 than the general population. In CA, 517 pregnant women have been hospitalized to date with H1N1 and 15 have died. In this county, 12 pregnant women have been hospitalized (3 ICU) and 1 postpartum death has occurred. All hospitalized cases of H1N1 *and* seasonal flu are currently reportable in CA. The state is conducting further review of all pregnant & postpartum (≤ 6 wks) cases that are ICU admits or fatal.

Pregnancy is a well-documented risk factor for severe infection and death with seasonal influenza and in previous pandemics. Risk increases with advancing pregnancy, and is also present for several weeks postpartum (PP). Greater vulnerability is due in part to multiple physiologic changes, including the immune system--shift away from cell-mediated towards humoral immunity, and the pulmonary and cardiovascular systems--decreased lung volume, increased heart rate, increased stroke volume, and increased oxygen consumption. Comorbidities such as asthma, DM, etc. confer additional risk to pregnant women with influenza.

Effects of influenza on the fetus are not well known. Viremia is believed to occur infrequently with seasonal flu and transplacental transmission appears rare. With avian H5N1, there is a single known case of placental transmission. No infections have been reported in infants born to date to women with H1N1. Fever/hyperthermia is a risk factor for some types of birth defects (e.g. neural tube) and other adverse outcomes.

Shortness of breath is more common in pregnant women with influenza but other sx are similar to those in the general populace--fever, cough, sore throat, headache, myalgias, sometimes vomiting or diarrhea (more common with H1N1 than seasonal flu). Most people recover without medical care. However, pregnant women and others with underlying risk (asthma, COPD, DM, CVD, etc.) are more likely to be hospitalized due to complications such as pneumonia or Acute Respiratory Distress Syndrome (ARDS).

Early antiviral tx*, ideally w/in 48 hrs of sx onset, may reduce disease severity and mortality in pts at higher risk for complications. CDC advises antiviral tx for all women who are pregnant or up to 2 wks PP (including after pregnancy loss) and have Influenza-Like Illness (ILI). Initiating tx over the phone may be appropriate for some pts. Testing of outpts with ILI is not necessary (and false-negative rapid tests are common). All inpts with ILI should have definitive testing (e.g. PCR), and tx should not be delayed pending results. Fever should be treated because of the risk to the fetus.

CDC infection control guidance for suspected H1N1 in obstetrics is consistent with other settings but includes special considerations for the newborn. Ob inpts with ILI should begin antivirals immediately, and wear a surgical mask during labor as tolerated. The newborn should be considered exposed but not infected, and standard precautions used. CDC is very cautious in its guidance for mom to not initiate close contact with her newborn (including feedings) until 3 conditions are met: afebrile ≥ 24 hrs, on antivirals ≥ 48 hrs, and able to control cough and secretions. If rooming in, an isolette is recommended if available, or an open bassinette >6 ft away. In contrast, for *seasonal flu*, CDC recommends rooming in (an isolette if available, placed >3 ft away when not interacting), and mom should wash her hands and don a surgical mask before feedings or other close contact. Hospitals may want to consider the feasibility and practicality of available guidance as well as the importance of mother-newborn bonding.

Breastmilk is strongly encouraged even if mom is taking antivirals. The milk is not infectious even if mom is ill, and is an ideal source of nutrition for baby.

All pregnant women, at any stage, should be vaccinated against seasonal and H1N1 flu. Vaccinating pregnant women is a “2 for 1”, also protecting infants for up to 6 mos after birth. Protection isn’t immediate, as antibodies take ~ 2 weeks to develop. Shots are indicated during pregnancy; the shot or nasal mist is an option for healthy PP women. Vaccinating fathers/household members is also important to protect newborns (<6 mos=underage for flu vaccines). Standing orders may improve vaccination rates for pregnant women, which have been historically very low ($<25\%$ for seasonal flu). The “pneumonia shot” (Pneumovax®23) is not licensed for use during pregnancy, but is indicated for non-pregnant pts who smoke or have asthma, DM, sickle cell dz, etc.

PHS and ~ 200 sites in the county have received H1N1 vaccine. The thimerosal exemption through Sep 2010 means multi-dose vials can be used for pregnant women if prefilled syringes are unavailable. H1N1 vaccines have a safe track record in the US, with millions vaccinated & no safety issues emerging. Enhanced monitoring continues.

*Oseltamivir/Tamiflu® 75 mg BID x 5d; or zanamivir/Relenza® 2 INH BID x 5d (not for pts with asthma). Either drug may be used during pregnancy or with breastfeeding.

ATTACHED: ACOG Influenza Triage Tool for Pregnant Women with ILI (10/15/2009)

REFERENCES:

- San Joaquin County PHS Influenza Website <http://www.sjcphs.org/h1n1/swineflu.htm>
- Antiviral Guidance for 2009-2010 Season <http://www.cdc.gov/H1N1flu/recommendations.htm> (Regarding prophylaxis, early illness recognition and prompt tx is emphasized as an alternative to prophylaxis after a suspected exposure. Overuse of antivirals can lead to the development of resistance.)
- Antiviral Emergency Use Authorization for IV Peramivir for H1N1 <http://www.cdc.gov/h1n1flu/eua/peramivir.htm>
- Antiviral tx for pts hospitalized with H1N1. NEJM 12/3/2009 <http://content.nejm.org/cgi/content/full/361/23/e110>
- Pneumoccal vaccine – who needs it? <http://www.cdc.gov/h1n1flu/vaccination/provider/lettertoprovider.htm>
- Thimerosal Exemption-H1N1 through 9/30/2010 <http://immunizeca.org/documents/CAPhysiciansThimLtr11-25-09.pdf>
- H1N1 Resources for Obstetric Providers http://www.cdc.gov/h1n1flu/clinician_pregnant.htm
- H1N1 CDC 24/7 consultation for ob clinicians (404) 368-2133 <http://www.sjcphs.org/h1n1/pregnantsupportlineinfo.htm>
- H1N1: Pregnant Women & Infants, COCA call on 11/17/2009 http://www.bt.cdc.gov/coca/confcall_archive.asp
- H1N1 Considerations in Intra/Postpartum Settings <http://www.cdc.gov/h1n1flu/guidance/obstetric.htm>
- Seasonal Flu & Peri/Postpartum Settings <http://www.cdc.gov/flu/professionals/infectioncontrol/peri-post-settings.htm>