

Obstetrician; Pregnancy is not a Contraindication to Vaccination

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Influenza Vaccination

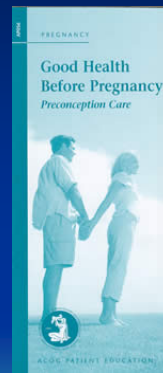
- ACOG (2004):
 - Women who will be pregnant during the influenza season (October through May) should be vaccinated
- Any theoretical risk of the vaccination is outweighed by its potential benefits.
- **No** evidence of perinatal morbidity from maternal vaccination

Influenza Vaccination

- Among providers whose practices did not offer influenza vaccine (n=300):
 - Inadequate Reimbursement (52%)
 - No Patient-Oriented Vaccine Information (45%)
 - Liability Concerns (45%)
 - Ambiguity of Guidelines (30%)
 - Patient Refusal (26%)
 - Concerns about Vaccine Efficacy (25%)

Schrag SJ, et al. Vaccination and perinatal infection prevention practices among obstetricians-gynecologists. *Obstet Gynecol* 2003;101:704-10

Influenza Vaccination



Influenza vaccination

- It is striking that the primary obstacles to vaccinating mothers were not related to concerns linked to pregnancy:
 - Costs of vaccine
 - Not responsibility of OB/Gyns

Influenza Vaccination

- Influenza infection during pregnancy
 - Longer lengths hospital stay
 - More frequent hospitalization not related to delivery
 - Maternal death
 - Increased rate preterm delivery

Influenza Vaccination

- Influenza leading cause of maternal death during 1957 pandemic: 20% of all maternal deaths
- Mortality for pregnant women during 1918 pandemic 30 to 50%
 - Overall mortality for all individuals 5%
- Women in second, third trimester at increased risk
- Chronic high risk medical conditions at increased risk
 - Asthma, Diabetes

Influenza Vaccination

- Physiologic changes during pregnancy
 - Somewhat compromised immune system
 - Increased heart rate
 - Increased stroke volume
 - Decreased lung capacity

Influenza vaccination

- Magical Thinking

“Many patients and health care providers are lulled into thinking that they will be protected by their youth, healthy lifestyle, appropriate hand cleaning practices, previous vaccination, or having avoided the diseases in previous outbreaks”

Engstrom JL. J Midwifery Womens Health 2008; 53: 401-2

Table 2. Signs and Symptoms of Influenza A in Pregnant Women Diagnosed During the 2003-2004 Season

Sign/Symptom	Frequency
Cough	99 (93)
Fever	94 (89)
Tachycardia	91 (85)
Myalgias	65 (61)
Nausea/Vomiting	64 (60)
Rhinorrhea	59 (56)
Pharyngitis	54 (51)
Headache	42 (40)
Malaise	32 (30)

N = 107; Values are n (%)

Unpublished from Rogers VL 2009

Influenza vaccination

- Presentation similar to nonpregnant adults
- Accompanied by nausea/vomiting and tachycardia that may be out of proportion to maternal fever
- Most common complication was pneumonia which occurred in one out of eight patients
- No significant increase in rate of preterm births

Influenza vaccination

- 33% first trimester patients admitted
- 66% and 62% of second and third trimester patients , respectively, were admitted
- 93% received either rimantadine or amantadine for treatment
- Average length of stay for influenza alone was 3.02 ± 0.94 days

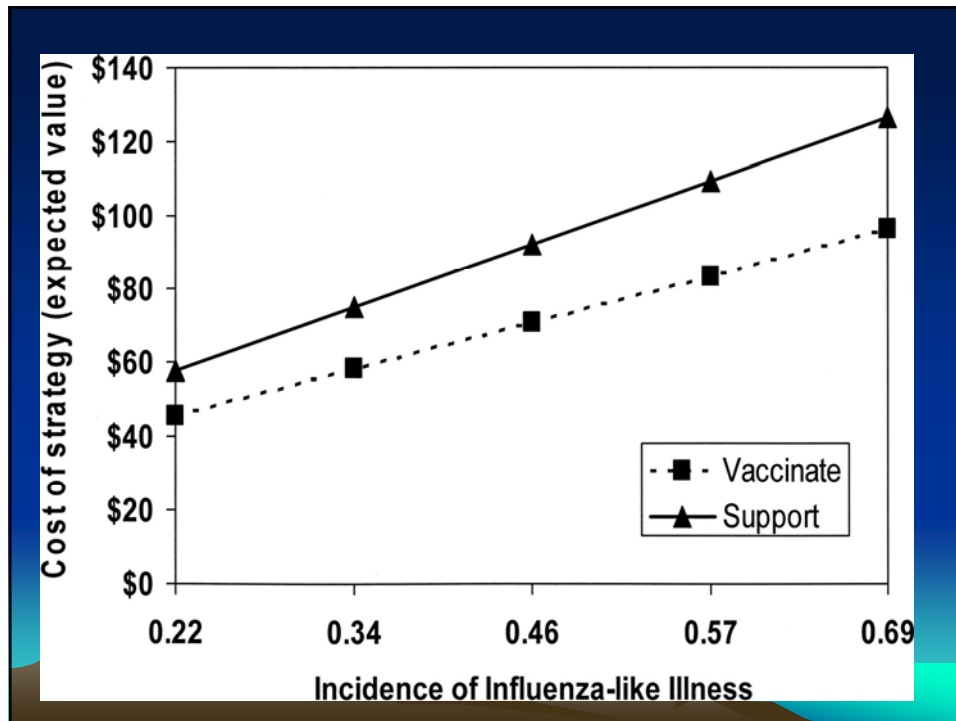
Influenza vaccination

- It is not known in advance how severe any given season will be, how well-matched the vaccine will be, or when the activity will peak
- Our data confirms the importance of universal vaccination in all pregnant women regardless of gestational age

Influenza Vaccination

- **Fig. 2.** Sensitivity analysis for average cost-effectiveness of supportive care compared with vaccination for different incidences of influenza-like illness
- Decreased morbidity to infants less than 6 months old *not* accounted. Only an underappreciation of cost savings would occur

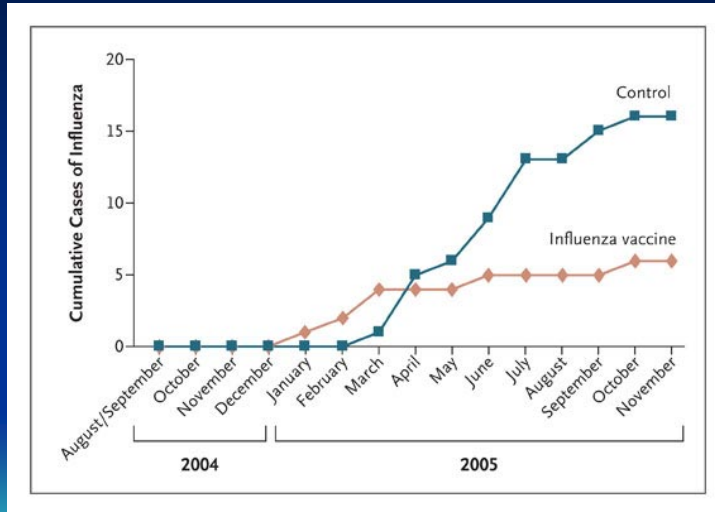
Roberts S. et al. Cost-effectiveness of influenza vaccination in a pregnant population. *Obstet Gynecol* 2006;107: 1323-9



Influenza Vaccination

- Seasonal influenza common in neonates
 - Vertical transmission
 - Nosocomial transmission after birth
- Protection from passive immunization
- Vaccinated mothers less likely to contract and transmit disease to neonates

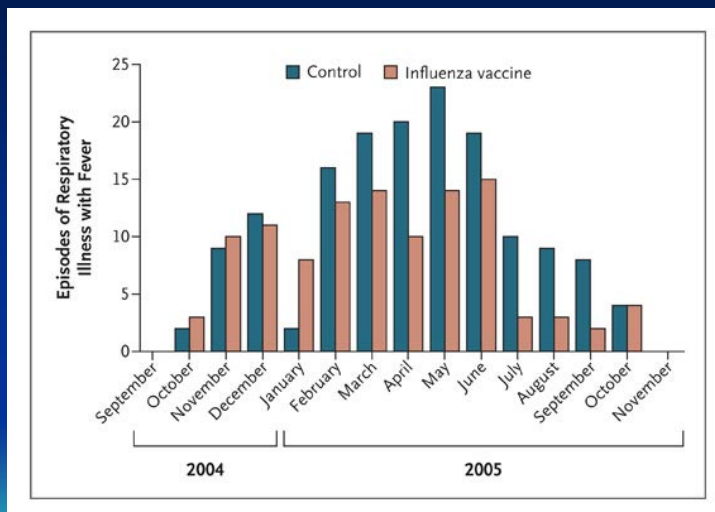
Cumulative Cases of Laboratory-Proven Influenza in Infants Whose Mothers Received Influenza Vaccine, as Compared with Control Subjects



Zaman K et al. N Engl J Med 2008;359:1555-1564



Episodes of Respiratory Illness with Fever in Infants Whose Mothers Received Influenza Vaccine, as Compared with Control Subjects

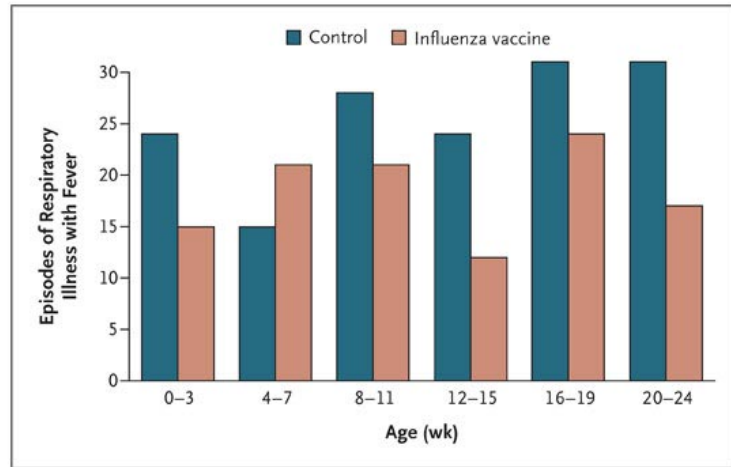


Zaman K et al. N Engl J Med 2008;359:1555-1564

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Episodes of Respiratory Illness with Fever in Infants Whose Mothers Received Influenza Vaccine, as Compared with Control Subjects, According to Age



Zaman K et al. N Engl J Med 2008;359:1555-1564

Zaman K et al. N Engl J Med 2008;359:1555-1564