



## Influenza Vaccination and Pregnant Women

Seasonal influenza (or flu) is a risk factor for severe illness during pregnancy. Certain changes in the immune system, heart, and lungs during pregnancy can make pregnant women prone to severe illness from flu as well as flu-related hospitalizations.<sup>1</sup> Premature labor and delivery are also risks for pregnant women with the flu.<sup>1</sup>

The flu shot is safe and can be administered before, during or after pregnancy.<sup>1,2</sup> Pregnant women who get an influenza vaccine pass their immunity to their babies. This protection lasts for several months after birth.<sup>2</sup>

According to 2009-2010 Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS) flu supplement data, 49.1% (95% Confidence Interval (CI)=44.0-54.2) of women

with recent live births were vaccinated during or after pregnancy.

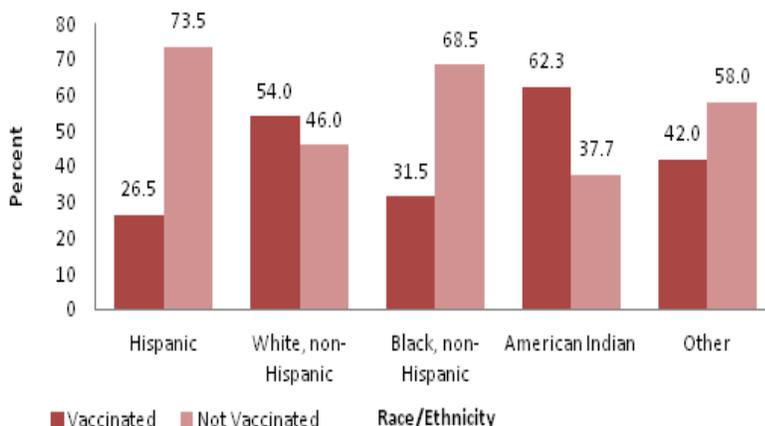
Provider recommendations were associated with the likelihood of receiving a flu vaccine. Without a recommendation by their prenatal health care provider, only 17.9% of new mothers were vaccinated. With an offer or recommendation, 64.4% of mothers received a flu vaccination.

Figure 1 highlights the variability in flu vaccinations among recently pregnant women of specific race/ethnicity. American Indian mothers had the highest rates of flu vaccination. Hispanic and Black, non-Hispanic women were vaccinated at the lowest rates. Hispanic women were the least likely among all new mothers to report no vaccination  
(Continued on page 2)

### OKLAHOMA FACTS

- › Only 49.1 % of new mothers in Oklahoma were vaccinated during the 2009-2010 influenza season.
- › Over half (53.8%) of mothers between ages 18-24 did not receive a flu shot during pregnancy or postpartum.
- › Women with more than a high school education had higher rates of vaccination (55.9%) compared to those who did not complete high school (34.6%).
- › 56.3% of married women received a flu shot.
- › Less than one in five (17.9%) women who did not receive a recommendation by a health care provider for a flu shot were vaccinated during or after pregnancy.
- › 60.9% of women with Medicaid/SoonerCare did not receive a flu vaccination.
- › Pregnant and postpartum women with Medicaid/SoonerCare and most types of private insurance can receive a flu shot from their prenatal or primary care provider. Flu shots also are provided at local county health departments, for free or at low cost.

**Figure 1: Seasonal Influenza Vaccination Coverage During or After Pregnancy by Race/Ethnicity, Oklahoma PRAMS 2009-2010**



during or after pregnancy (Figure 1). Differences in race/ethnicity were statistically significant ( $p < 0.05$ ).

Parity also was significant. Mothers with more than one child were significantly less likely to receive a flu shot (44.2%) compared to women who recently gave birth to their first child (55.7%).

Higher education levels also increased the likelihood of flu vaccination among pregnant and postpartum women. Nearly 56% of women with greater than a high school education were vaccinated compared to 34.6% of women with less than a high school education.

Insurance status during prenatal care was another area of significant difference, as 66.4% of women using private insurance and 39.1% of women with Medicaid/SoonerCare received the flu shot. Approximately 50% of women using primary private insurance and secondary Medicaid/SoonerCare coverage received a flu shot (labeled as "Both" on Figure 2) during or after

pregnancy. Women without insurance, with military or Indian Health Services (IHS)/tribal health care had the lowest rates of vaccination (37.6%; labeled as "Other" on Figure 2).

Reasons given by women who did not receive a flu vaccination were (they could choose more than one):

- > Doctor didn't mention it (71.4% not vaccinated vs. 28.6% vaccinated)
- > Worried about side effect for me (54.3% not vaccinated vs. 45.7% vaccinated)
- > Worried shot may harm the baby (48.1% not vaccinated vs. 51.9% vaccinated)
- > Do not normally get it (28.9% not vaccinated vs. 71.1% vaccinated)

References:

1. CDC. Pregnant women and Influenza (flu), 2010. Available at: <http://www.cdc.gov/flu/protect/vaccine/pregnant.htm>
2. CDC. Pregnancy and Influenza Vaccine Safety, 2011. Available at: [http://www.cdc.gov/vaccinesafety/Concerns/gnancy\\_influenza.html](http://www.cdc.gov/vaccinesafety/Concerns/gnancy_influenza.html)

*"My doctor said to wait [to get a flu shot], then I forgot"*  
- PRAMS Mom

#### ACKNOWLEDGEMENTS

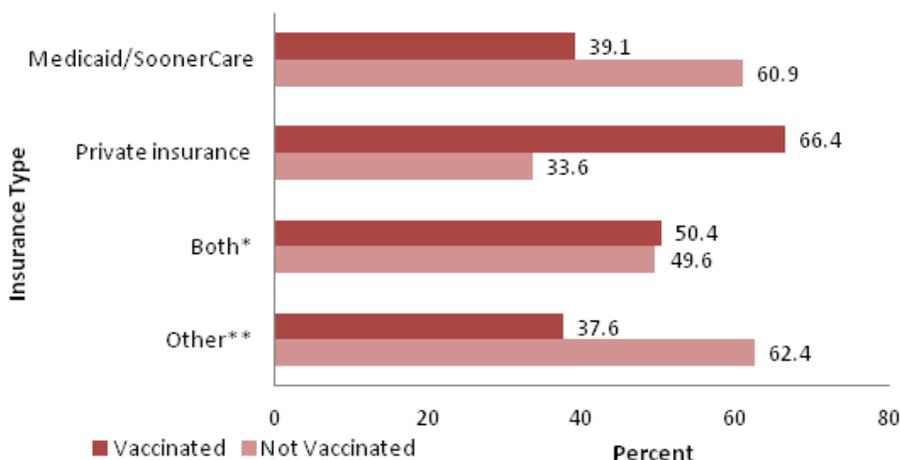
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PRAMS is a population-based surveillance system about maternal behaviors and experiences before, during and after pregnancy. Approximately 250 mothers are selected to participate in Oklahoma each month. Mothers are sent as many as three mail questionnaires seeking their participation, with follow-up phone interviews for non-respondents. Information included in the birth registry is used to develop analysis weights that adjust for probability of selection and non-response. In September 2009-April 2010 an additional series of questions regarding influenza vaccinations were added to the main PRAMS survey. These data were then weighted as a separate data set to reflect the birth population for the state during flu season. The sample size for 2009-2010 influenza supplement data was 1,432.

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**Figure 2: Seasonal Influenza Vaccination Coverage During or After Pregnancy by Prenatal Insurance Type, Oklahoma PRAMS 2009-2010**



\*Indicates mother had both Medicaid/SoonerCare and private insurance coverage  
\*\* Includes Uninsured, IHS/tribal, and/or military health care

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