



# INFLUENZA (FLU) VACCINATION AMONG PREGNANT WOMEN AND THE IMPORTANCE OF PRENATAL CARE PROVIDERS IN LOS ANGELES COUNTY

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## Why does Influenza vaccine matter for pregnant women?

Pregnant women are at high risk for developing serious illness caused by seasonal influenza (flu) due to the physiological changes that occur during pregnancy.<sup>1-3</sup>

Inoculation with an inactivated influenza vaccine (flu shot) is the most effective way to protect pregnant women from influenza and the resulting complications.<sup>4-5</sup>

Vaccination of pregnant women is one strategy to protect babies at high risk of severe illness from influenza, who are too young to be vaccinated. Recent studies have demonstrated that vaccination during pregnancy significantly reduces the chance of influenza among infants up to 6 months of age.<sup>6-8</sup> This brief report presents information on influenza vaccination rates among pregnant women in Los Angeles (LA) County and the important role of prenatal care providers in promoting flu vaccination among pregnant women. This report utilizes data from the 2012 Los Angeles Mommy and Baby (LAMB) Project.

## Methods

The LAMB project is a biennial population-based telephone and mail survey conducted by the LA County Department of Public Health, Maternal, Child, and Adolescent Health Programs. The survey asks mothers who recently delivered a live baby in LA County about events that happened before, during, and after their pregnancy. Information from LAMB is used for strategic planning and to improve health programs for LA County mothers and infants. More than 6,800 mothers responded to the 2012 survey (response rate=62%). This report includes information only from mothers who received prenatal care (n=6,744). The LAMB survey includes two questions regarding flu vaccination, which ask mothers 1) whether their prenatal health care provider discussed getting a flu shot during their pregnancy, and 2) whether they got a flu shot during their pregnancy.

❖ *In 2012, one-third of women giving birth in LA County received a flu shot during their pregnancy.*

❖ *Vaccination coverage was lowest among women who:*

- *were less than 35*
- *were African American*
- *had less than a bachelor's degree*
- *lived in San Gabriel or Antelope Valley*
- *were covered by Medi-Cal during pregnancy*
- *received WIC services*

❖ *Pregnant women whose prenatal health care providers discussed influenza vaccine were about 18 times more likely to be vaccinated than women whose providers did not discuss vaccination taking into account mothers race, education, age, and insurance status*

## Influenza Vaccination Recommendations for Pregnant Women

According to the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP), all persons aged 6 months or older, including women who are or plan to be pregnant during influenza season, are recommended to receive an influenza vaccine. The American College of Obstetricians and Gynecologists (ACOG) also supports the recommendation to vaccinate all women who are or may be pregnant during the flu season.<sup>4-5</sup>

**Inactivated influenza vaccine is safe and effective during any stage of pregnancy and is proven to benefit both the mother and baby.**<sup>4-5</sup>

## Findings

In 2012 approximately one-third of women (33.4%) giving birth in LA County received a flu shot. Compared to other racial/ethnic groups, African American women had the lowest vaccination coverage (23.5%). With regard to age, women who were less than 25 years old had the lowest vaccination coverage for flu vaccine (approximately 30%), compared to their older counterparts. Flu vaccination coverage was also lower among pregnant women on Medi-Cal versus those with private insurance (28.3% vs. 43.6%).

Women with college degrees or higher had the highest vaccination coverage when compared to women with lower education levels. Respondents who participated in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) also had lower vaccination rates, compared to non-WIC participants (30.0% vs. 37.9%). For public health planning purposes, LA County is divided into eight geographically distinct Service Planning Areas (SPAs). Analysis of LAMB data revealed varying influenza vaccination coverage by SPA. In particular, Antelope Valley and San Gabriel had the lowest vaccination coverage (25.7% and 29.4%, respectively) while communities in the West part of LA County had the highest rate (48.3%) (Table1). Pregnant women whose prenatal health care providers discussed influenza vaccine were about 18 times more likely to be vaccinated than women whose providers did not discuss vaccination (aOR=17.9, 95% CI 13.1 - 24.4), taking into account mothers' race, education, age, and insurance status.

**Table 1. Influenza Vaccination Coverage by Maternal Characteristics among Women Who Recently Had a Live Birth, Los Angeles County, 2012**

<i>Characteristics</i>	<i>Vaccinated population estimate</i>	<i>Coverage (%)</i>	<i>95% Confidence Interval</i>
<b>Race/Ethnicity</b>			
White	9,136	40.4	37.5-43.4
Latina	23,560	32.5	30.1-34.9
African American	2,236	23.5	20.5-26.4
Asian/Pacific Islanders	6,178	32.8	25.4-40.2
<b>Age Group</b>			
<20	2,563	30.6	27.4-33.8
20-24	6,887	29.1	25.3-33.0
25-34	21,304	33.0	30.5-35.5
>34	11,269	38.5	33.2-43.8
<b>Education</b>			
Did not complete high school	8,079	30.9	27.0-34.8
Completed high school	7,837	26.8	23.0-30.6
Some college education	9,516	32.2	27.3-35.2
Bachelor's degree or beyond	15,301	42.5	38.7-46.2
<b>Service Planning Area (SPA)</b>			
Antelope Valley (SPA1)	1,380	25.7	21.8-29.5
San Fernando (SPA2)	8,893	36.6	32.8-40.4
San Gabriel (SPA3)	6,896	29.4	23.2-35.6
Metro (SPA4)	4,203	32.0	27.6-36.5
West (SPA5)	3,372	48.3	43.5-53.1
South (SPA6)	6,072	33.5	28.5-38.4
East (SPA7)	5,446	33.0	28.5-37.6
South Bay/Harbor (SPA8)	5760	32.1	28.6-35.6
<b>Received WIC services during pregnancy*</b>			
Yes	23,746	30.0	27.9-32.0
No	10,171	37.9	34.7-41.1
<b>Prenatal care coverage</b>			
Medi-Cal	18,328	28.3	26.0-30.6
Private insurance	22,725	43.6	41.2-45.9
<b>Los Angeles County Total</b>	<b>42,022</b>	<b>33.4</b>	<b>31.5-35.3</b>

\*Excluded women who stated that they did not need WIC services.

## Summary

Intense efforts to vaccinate pregnant women during the 2009 H1N1 pandemic resulted in a much higher vaccine uptake. Unfortunately, this high rate was not sustained. Flu vaccination coverage for pregnant women decreased from 48% in 2010 to 33.4% in 2012<sup>9</sup>. Socio-demographic disparities for flu vaccination coverage suggest that additional public health efforts are needed to adequately address these disparities. In particular, promotion of flu vaccination among African American pregnant women and pregnant women who are covered by Medi-Cal, receive WIC services, or live in the San Gabriel or Antelope Valley areas would boost the influenza vaccination coverage.

Prenatal health care providers played an important role in increasing influenza vaccination coverage among pregnant women in LA County. Women whose providers discussed influenza vaccine with them were 18 times more likely to be vaccinated. Continued efforts are needed to encourage health care providers to follow guidelines in recommending and offering influenza vaccination to their pregnant and postpartum patients. For this reason, the LAC Immunization Program reaches out to healthcare providers to promote flu vaccines for pregnant women through educational materials, adult immunization and influenza in-services, and provider-focused publications. Further research is needed to identify vaccination-related best practices at the County level and reveal reasons for not receiving the influenza vaccine during pregnancy. Partnerships between various stakeholders at the local level will be necessary to promote increased implementation of evidence-based strategies.<sup>10</sup>

## Recommendations for Pregnant Women (revised from CDC PRAMS Report)<sup>11</sup>

### **Who should get a flu vaccine and when should it be administered?**

- Experts recommend that every person aged 6 months or older, including women who are or planning to get pregnant (in any trimester) during flu season, get vaccinated against the flu.
- Pregnant women should receive the flu shot, rather than the nasal spray flu vaccine. Women who are not pregnant but are breastfeeding may receive the nasal spray.

### **Is it safe for you to get a flu shot while you are pregnant?**

- Yes. The flu shot has been given safely to millions of pregnant women over many years. Flu shots have not been shown to cause any harm to pregnant women.

### **Is a flu shot safe for your unborn baby?**

- Yes. Many studies show that flu shots received during pregnancy are safe to the unborn child (or fetus). In fact, flu shots during pregnancy protect the baby from the flu. In addition, the Food and Drug Administration (FDA) and CDC keep track of safety issues and have not seen any need for concern.

**Please talk to your health care provider if you have questions about getting the flu shot.**

## Recommendations for Prenatal Care Providers (revised from CDC PRAMS report)<sup>12</sup>

Health care providers play a critical role in advising pregnant and postpartum women in their decision to get a flu vaccine:

- Educate staff and pregnant women about the importance of obtaining an influenza vaccination during pregnancy. Provide information related to its safety, and a strong recommendation for vaccination for her own health and the health of her newborn.
- Issue standardized nursing procedures for influenza vaccinations for pregnant and postpartum women.
- Establish an influenza vaccination reminder system.
- Post influenza prevention posters/information in waiting and exam rooms and provide brochures to prompt vaccination requests from clients.
- Offer vaccinations to pregnant women at the earliest opportunity and throughout flu season (October–April).
- Vaccinate all healthcare personnel in their practices to prevent staff from acquiring influenza and reduce the chance of spreading to patients.
- Vaccinate postpartum women who were not vaccinated during pregnancy, preferably before hospital discharge or at the 6<sup>th</sup> week postpartum visit.
- Know where to refer patients if influenza vaccine is not available in the practice.
- Educate staff and postpartum women that breastfeeding is not a contraindication to the vaccine.

### Data Analyses and Limitations

All data analyses were conducted using Statistical Analysis Software (SAS) version 9.3 and weighted to represent the experiences of all women who delivered a live birth in 2012. Data from LAMB is based on participant self-report, about three to seven months after delivery, among women who had a live birth. Because the LAMB questionnaire is completed postpartum, there may be recall bias from mothers regarding their pre-pregnancy experience about flu vaccines.

### Additional Resources

- Los Angeles Mommy and Baby (LAMB) Project : [www.publichealth.lacounty.gov/mch/lamb/LAMB.html](http://www.publichealth.lacounty.gov/mch/lamb/LAMB.html)
- Pregnant women and Flu: [www.cdc.gov/flu/protect/vaccine/pregnant.htm](http://www.cdc.gov/flu/protect/vaccine/pregnant.htm)
- Pregnancy Risk Assessment Monitoring System (PRAMS): [www.cdc.gov/prams/](http://www.cdc.gov/prams/)
- Healthy People 2020 objective IID-12.10 for seasonal influenza vaccination among pregnant women: [www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=23](http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=23)
- Text 4 baby: <http://www.text4baby.org/>
- Los Angeles County Department of Public Health Acute Communicable Disease Control Program: [www.publichealth.lacounty.gov/acd/Flu.htm](http://www.publichealth.lacounty.gov/acd/Flu.htm)
- Los Angeles County Department of Public Health Immunization Program: [www.publichealth.lacounty.gov/ip/flu/index.htm](http://www.publichealth.lacounty.gov/ip/flu/index.htm)
- Flu.gov [www.flu.gov/](http://www.flu.gov/)
- Influenza Immunization During Pregnancy Toolkit, American College of Obstetricians and Gynecologists: [www.immunizationforwomen.org/site/assets/docs/FLU%20TOOLKIT%20COMPLETE\\_021413.pdf](http://www.immunizationforwomen.org/site/assets/docs/FLU%20TOOLKIT%20COMPLETE_021413.pdf)

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12. Influenza Vaccination among Pregnant and Postpartum Women in Minnesota: The Importance of the Prenatal Care Provider. Issue Brief, October 2011 <http://www.health.state.mn.us/divs/idepc/diseases/flu/vaccine/pramsoc11.pdf>

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