



# PRAMS MOnitor

## Flu Vaccination Among Pregnant Women

Missouri Pregnancy Risk Assessment Monitoring System

2011

### What is Missouri PRAMS?

Missouri PRAMS is an ongoing, population-based survey designed to identify and monitor select maternal experiences, attitudes and behaviors that occur before, during and shortly after pregnancy among women delivering a live-born infant. PRAMS collects information from women through a mailed survey with telephone follow-up for those who do not respond.

Given the importance of influenza (flu) among pregnant women, questions about both seasonal and 2009 H1N1 flu were added to the PRAMS survey in 2009. This fact sheet will include data about seasonal flu for women who delivered between September 1, 2009 and December 31, 2009. Because the 2009 H1N1 vaccine was not available until October 5, 2009, analyses for 2009 H1N1 are limited to women delivering between October 6, 2009 and December 31, 2009.

### What is the Flu?

Influenza, or flu, is a contagious respiratory illness. Symptoms range from mild to severe and may include:<sup>1</sup>

- Fever
- Chills
- Sore throat
- Runny/stuffy nose
- Muscle or body aches
- Headache
- Fatigue
- Sometimes vomiting and diarrhea

In addition to the typical seasonal flu virus, a novel influenza virus known as H1N1 was identified in 2009. The virus was novel because this particular flu strain had not infected humans before, whereas most people have been exposed to the typical seasonal flu at some point in their lives.

### Why is Flu Vaccination Important?

Some groups of people are at higher risk for severe illness caused by seasonal or 2009 H1N1 flu, including pregnant women. Existing evidence shows that seasonal flu vaccination for pregnant women is safe and benefits not only the mother, but also the infant, and even the fetus.<sup>2</sup> Maternal flu vaccination has been shown to reduce rates of prematurity, low birth weight, and flu-related hospitalization of infants, especially those under 6 months of age.<sup>3,4</sup> The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) recommended pregnant women as one of the priority groups to be vaccinated, regardless of trimester, with both seasonal flu and 2009 H1N1 flu vaccines in the 2009-2010 flu season.<sup>5,6</sup>

Approximately 6 out of 10 women reported that they had been offered the seasonal flu vaccine by a health care provider.



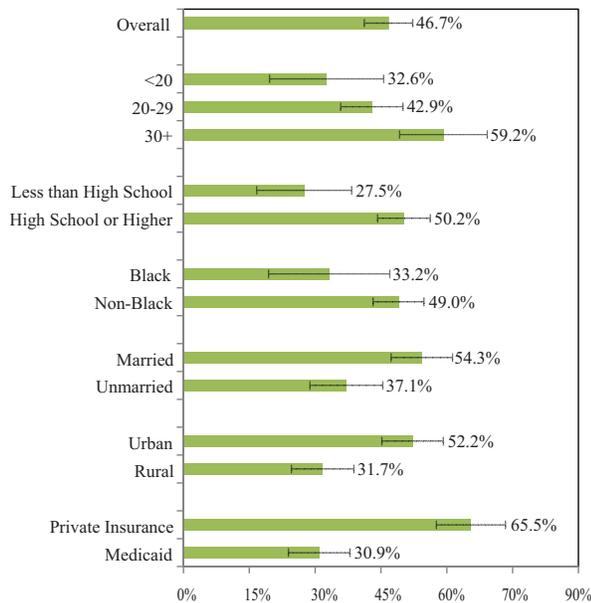
## Results

### Seasonal Influenza

In Missouri, 46.7 percent of pregnant women received the seasonal flu vaccine between September 1, 2009 and December 31, 2009. Figure 1 shows that vaccination coverage was lower among women who were:

- Younger
- Less than high school educated
- Black
- Unmarried
- Living in a rural area
- Covered by Medicaid during pregnancy

Figure 1. Percent of women who received the seasonal influenza vaccine among women delivering September 1-December 31, 2009



Approximately 6 out of 10 women (64.4 percent) reported that they had been offered the seasonal vaccine by a health care provider. Figure 2 shows women who were offered the seasonal flu vaccine by a health care provider were much more likely to receive it (60.7 percent) compared to those who were not offered it (19.8 percent).

Figure 2. Percent of women who received the seasonal influenza vaccine based on provider offering among women delivering September 1-December 31, 2009

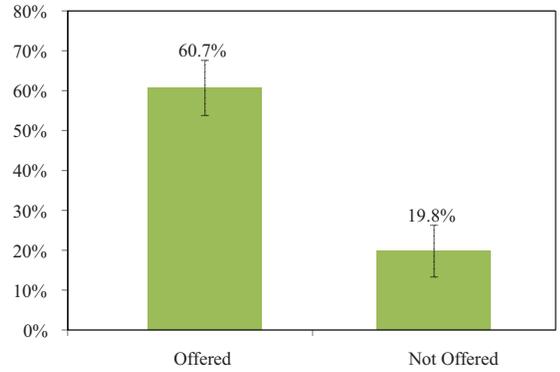


Figure 3 shows reasons women gave for not receiving the seasonal flu vaccine during pregnancy with the most common being that they do not normally get a flu shot (68.1 percent). This underscores the importance of promoting regular seasonal flu vaccination even for non-pregnant women as a way to enhance vaccination rates during pregnancy. Around one third of women were concerned that the influenza vaccination could harm them (33.7 percent) or their baby (37.5 percent). Approximately one in five women (21.7 percent) indicated that a reason for not receiving the vaccination was that their doctor did not mention it.

Seasonal vaccination was lower among women who were:

- Younger
- Less than high school educated
- Black
- Unmarried
- Living in a rural area
- Covered by Medicaid during pregnancy

\* Confidence Intervals: In the figures throughout this fact-sheet, 95% Confidence Intervals are used. The 95% Confidence Interval (CI) reflects the range of values for which there is 95% confidence that the true value falls within the range. This interval is shown in the figures as error bars with a lower confidence limit and an upper confidence limit.

Figure 3. Reasons women did not receive the seasonal influenza vaccine during pregnancy among women delivering September 1-December 31, 2009

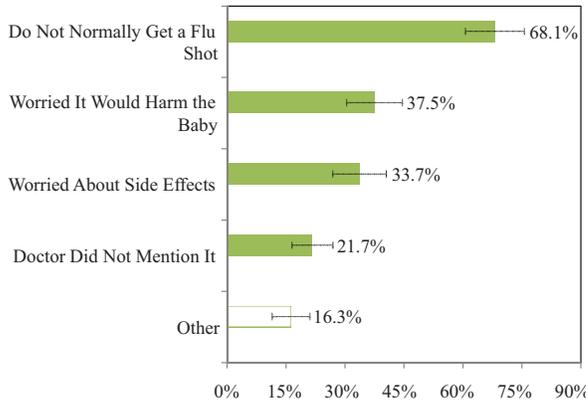
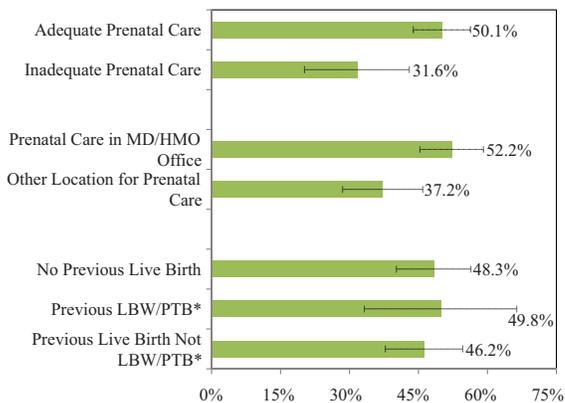


Figure 4 illustrates that women with adequate prenatal care and those who received their prenatal care in an MD/HMO office had a higher percentage of seasonal flu vaccination. The percentage of women who received the vaccine did not vary significantly based on previous pregnancy outcome in terms of birth weight and gestational age.

Figure 4. Percent of Women Who Received the Seasonal Influenza Vaccine Based on Related Factors Among Women Delivering September 1-December 31, 2009



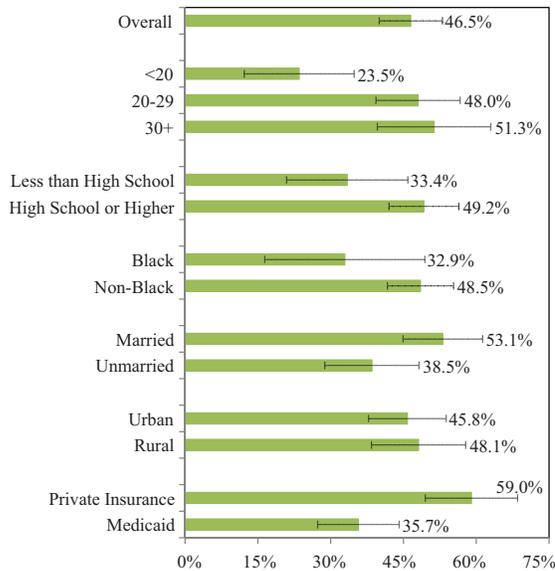
\*LBW: low birth weight (<2500g); PTB: preterm birth (<37 weeks gestation) Applies only to last delivery before the new baby.

### 2009 H1N1 Influenza

In Missouri, 46.5 percent of pregnant women received the 2009 H1N1 flu vaccine between October 6, 2009 and December 31, 2009. Figure 5 shows that vaccination coverage was lower among women who were:

- Younger
- Less than high school educated
- Black
- Unmarried
- Living in a rural area
- Covered by Medicaid during pregnancy

Figure 5. Percent of women who received the 2009 H1N1 influenza vaccine among women delivering October 6-December 31, 2009



Many women (75.7 percent) were offered the 2009 H1N1 flu vaccine by a health care provider, and 60.6 percent of these women received the vaccine. However, no women reported getting vaccinated among those who were not offered the vaccine by a health care provider, which underscores the importance of provider influence in vaccination for novel influenza.



Photo credit: The Centers for Disease Control and Prevention

### Misconceptions from PRAMS Mothers:

"Not necessary, I am healthy, took extra precautions, avoided crowds, washed hands, eat right."

"I do not get any vaccine for myself or my children. I believe the risk of catching the disease is smaller than the unknowns of the vaccine."

"Flu shot has not been proven safe."

"You should have flu shot and H1N1 after you have the baby because it could hurt the baby."

Reasons for not getting the 2009 H1N1 flu vaccine are shown in Figure 6. Comparing the reasons for not receiving the seasonal and 2009 H1N1 flu vaccines, it is evident that concerns about side effects and concern for the baby played a larger role in non-vaccination for 2009 H1N1 than with the seasonal flu. Approximately one third of women indicated that side effects or concern for the baby were reasons for non-vaccination for the seasonal flu compared to half of women for 2009 H1N1 flu vaccination.

Figure 6. Reasons why women did not receive the 2009 H1N1 influenza vaccine during pregnancy among women delivering October 6-December 31, 2009

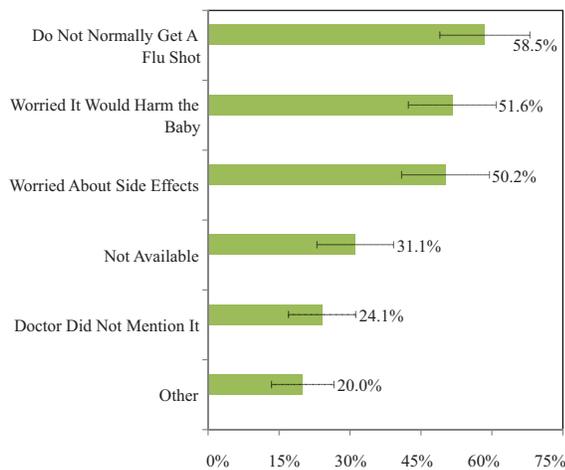
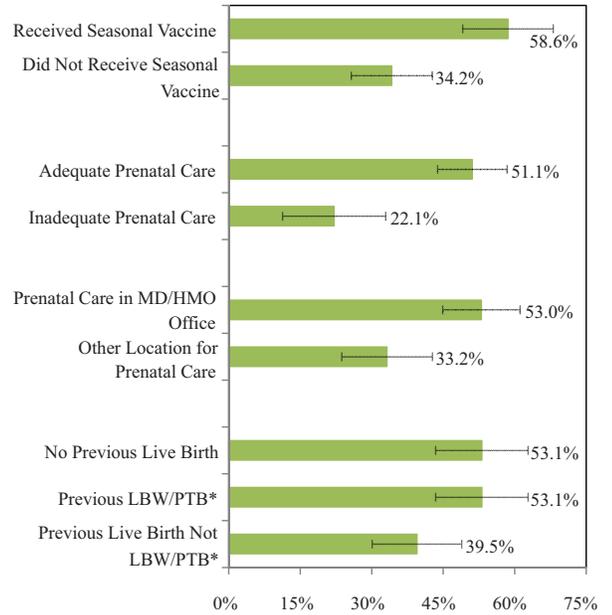


Figure 7 illustrates that 2009 H1N1 flu vaccination was much more common among women who had received the seasonal flu vaccine. This finding, along with not normally getting a flu shot as the main reason for non-vaccination, highlights the importance of seasonal vaccination when encouraging vaccination for novel influenza. Similar to seasonal flu, a higher percentage of women received the 2009 H1N1 vaccine among those with adequate prenatal care and those who had received prenatal care in an MD/HMO office. A higher percentage of women received the 2009 H1N1 vaccine among women with no previous live birth and those with a previous delivery of a low birth weight and/or preterm infant.

Figure 7. Percent of women who received the 2009 H1N1 influenza vaccine based on related factors among women delivering October 6-December 31, 2009



\*LBW: low birth weight (<2500g); PTB: preterm birth (<37 weeks gestation) Applies only to last delivery before the new baby.

## Discussion

### Findings

At the end of 2009, 46.7 percent of pregnant women in Missouri received the seasonal flu vaccine and 46.5 percent received the 2009 H1N1 flu vaccine. Pregnant women are at higher risk for developing serious illness caused by influenza, so higher vaccination coverage in this population is needed. The data presented in this fact sheet provide valuable insight into what factors influence vaccination among pregnant women. Similar socio-demographic disparities for vaccination exist for both seasonal and 2009 H1N1 flu highlighting potential target groups. The results presented indicate that a higher percentage of women who were offered the vaccine by a health care provider received it compared to those who are not offered the vaccine, emphasizing the important role the provider plays in encouraging vaccination. Women may not be aware of the increased risk of flu during pregnancy and the corresponding increased need to get vaccinated. Therefore, providers should be sure to discuss these topics with women during pregnancy. A major reason women did not receive either vaccine was because they do not normally

For more information, please contact:

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get a flu shot, highlighting a need to educate women regarding the importance of routine vaccination. Updated ACIP recommendations expand the ages for flu vaccination to all persons  $\geq 6$  months of age, which may further promote awareness of the importance of routine flu vaccination.<sup>7</sup>

#### Limitations

- PRAMS data are all self-report.
- Some women may recall certain experiences better than other women.
- Not everyone who is sent the PRAMS survey responds, so we do not know how the answers of those who did not respond may differ from those who did respond.
- Although the 2009 H1N1 analyses were limited to women who delivered after the vaccination was released, actual vaccine availability varied greatly nationwide. Therefore, not all pregnant women may have had access to the vaccine before delivery.

#### Recommendations

- Provide educational outreach for patients as well as health care providers regarding the safety and importance of flu vaccine during pregnancy.
- Encourage providers to educate and promote flu vaccination among women throughout the lifespan.

#### Helpful Resources

##### **Missouri Department of Health and Senior Services: Influenza**

[www.dhss.mo.gov/living/healthcondiseases/communicable/influenza/index.php](http://www.dhss.mo.gov/living/healthcondiseases/communicable/influenza/index.php)

##### **Centers for Disease Control and Prevention (CDC): Seasonal Influenza (Flu)**

[www.cdc.gov/flu/](http://www.cdc.gov/flu/)

##### **(CDC) Advisory Committee on Immunization Practices (ACIP): Recommendations and Guidelines**

[www.cdc.gov/vaccines/recs/acip/default.htm](http://www.cdc.gov/vaccines/recs/acip/default.htm)

#### References

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7. Centers for Disease Control and Prevention. Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR. 2010;59(RR08):1-62.

#### Acknowledgments

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