

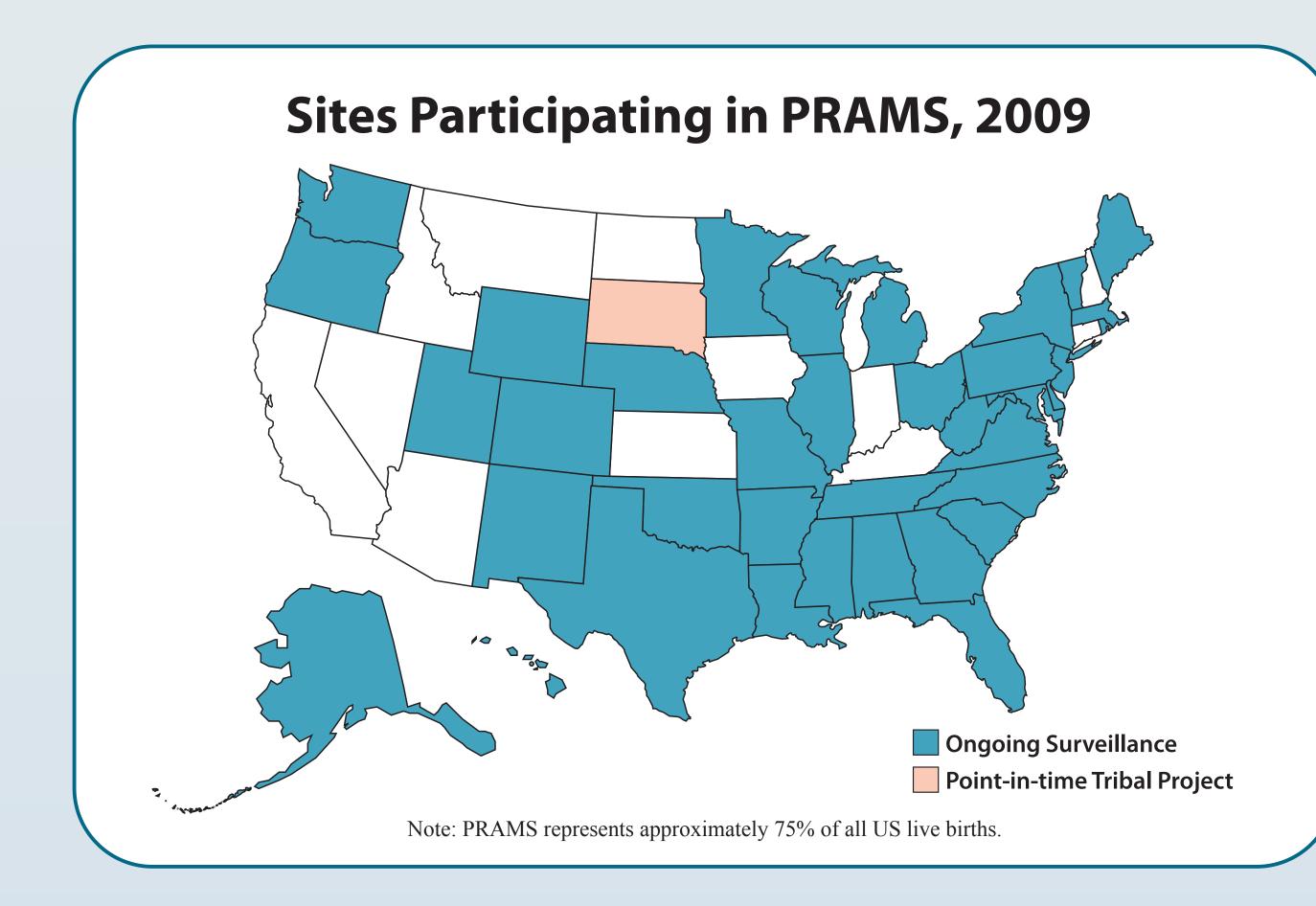
## Background

- Pregnant women are at increased risk for complications from influenza - Pregnant women are more likely to be hospitalized due to respiratory
- illness during flu season than general population
- Since 2004, ACIP and ACOG have recommended that all pregnant women be vaccinated with the trivalent inactivated vaccine any time during pregnancy
- ACIP has identified pregnant women as a priority group for the H1N1 vaccine
- National data from the NHIS show that, of adult groups recommended to receive seasonal vaccination, pregnant women have the lowest coverage
- Coverage ranges from 12.3% for 2005/2006 season to 24.2% during the 2007/2008 season
- Different states have different programs for promoting vaccines to various population groups

P is the Advisory Committee on Immunization Practices ACOG is the American College of Obstetricians and Gynecologists

## What is **PRAMS**?

- PRAMS, the Pregnancy Risk Assessment Monitoring System, is a collaborative effort between CDC and participating states
- State population-based surveillance system of women who recently delivered a live-born infant
- Collects information on maternal behaviors, attitudes, and experiences before and during pregnancy and during the child's early infancy



• Analyzed PRAMS data:

### Variables considered:

- Maternal race/ethnicity, age, marital status, education, parity
- Medicaid, prenatal care initiation
- Cigarette smoking, body mass index (BMI kg/m<sup>2</sup>), hypertension and diabetes (chronic or pregnancy induced)
- Data were analyzed using SUDAAN software to take into account complex sampling strategy, survey design, non-response, and non-coverage
- to examine coverage over time
- Prevalence estimates and 95% confidence intervals were calculated
- Bivariate and multivariable analyses were conducted to assess correlates of seasonal influenza vaccine coverage using data from 2006 and 2007.

# **Seasonal Influenza Vaccination Coverage During Pregnancy** Pregnancy Risk Assessment Monitoring System

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## **Data Source and Methods**

• Two states collected Pregnancy Risk Assessment Monitoring System (PRAMS) data on influenza vaccine uptake from women with recent live births from 2004–2007

- to examine vaccine prevalence among pregnant women who recently delivered a live-born infant in GA and RI from 2004 to 2007
- to examine correlates of seasonal influenza vaccine coverage using pooled data from 2006 and 2007 for each state separately

### Measures

- Vaccine coverage both states:
- "did you get a flu vaccination during your most recent pregnancy?"

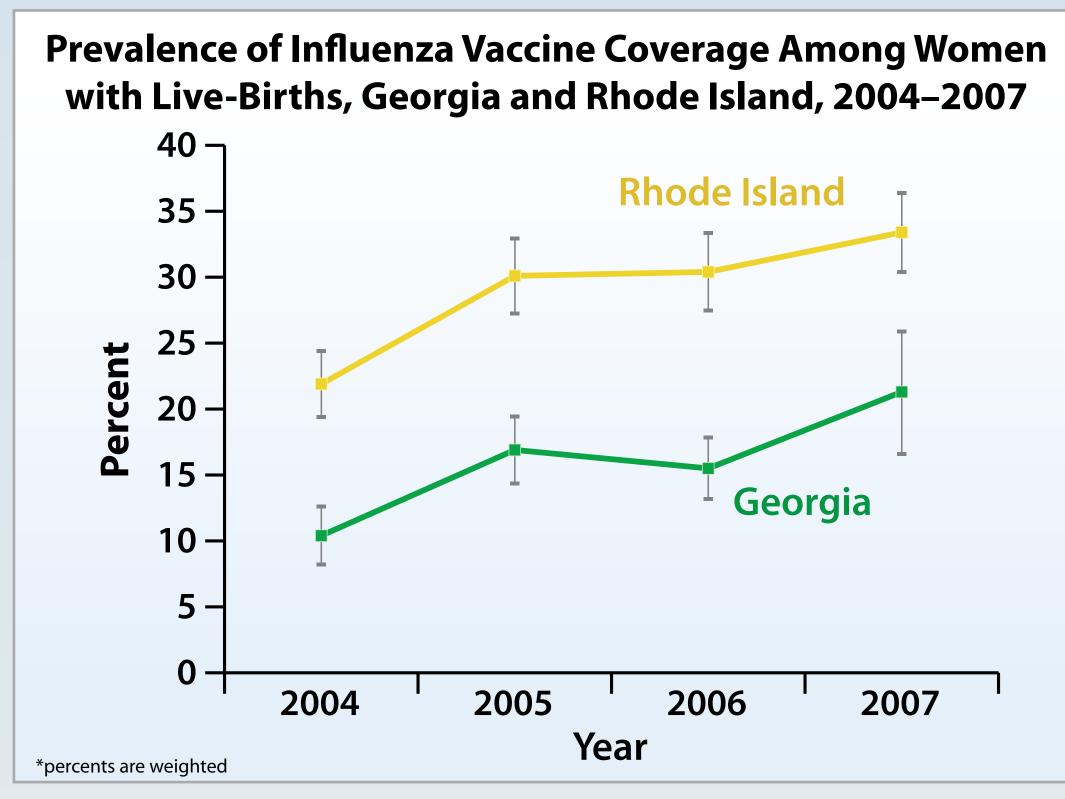
### **Additional questions:**

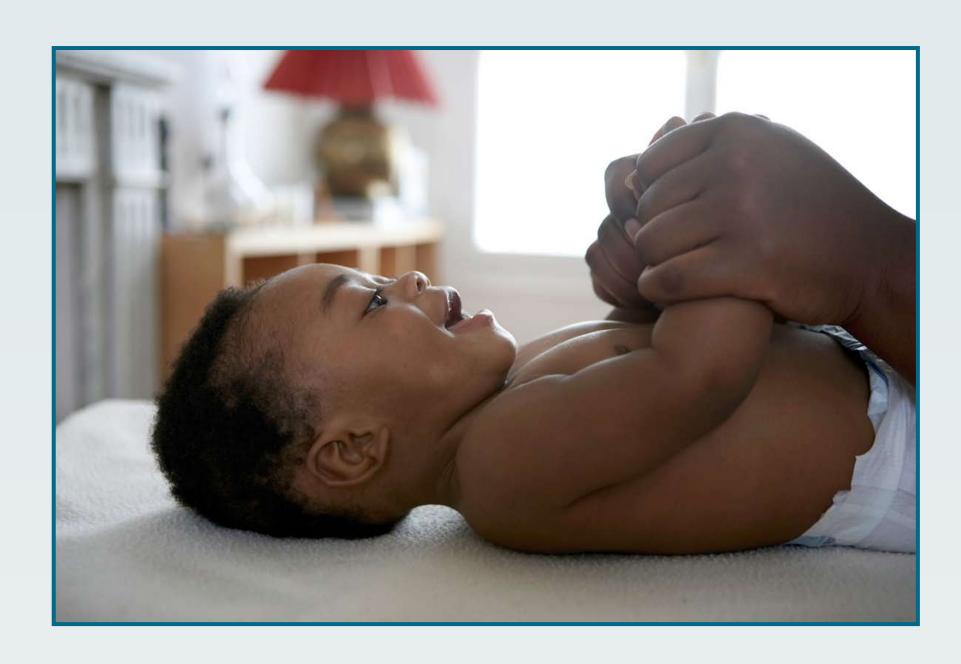
**Georgia**—reasons for not getting the influenza vaccination **Rhode Island**—provider advice or offer of a vaccination

ear	Georgia (n)	Rhode Island (n)			
)04	1535	1474			
)05	1738	1387			
)06	1958	1310			
)07	788	1328			



## Results





#### Reasons for not receiving the seasonal influenza vaccination, Georgia, 2006–2007

*Reason		95% CI	
Don't normally get a flu vaccination	65%	(62–69)	
Not mentioned or recommended by health care provider	43%	(39–46)	
Worried about harming baby	27%	(24–31)	
Worried about side effects to self	26%	(22–29)	
First trimester of pregnancy during flu season		(20–26)	
Not pregnant during flu season	21%	(18–24)	
*Women could select more than one reason			

#### **Correlates of seasonal influenza vaccination**, Georgia, 2006–2007

Characteristic	Adjusted Odds Ratio and 95% Cl
Parity	
Primipara	Reference
Multipara	0.60 (0.40–0.89)

\*odds ratio adjusted for all other demographic, service use, and social variables

#### **Correlates of seasonal influenza vaccination**, **Rhode Island, 2006–2007**

Characteristic	Adjusted Odds Ratio and 95% Cl	
Cigarette smoking		
No	Reference	
Yes	0.52 (0.34–0.80)	
Advice or offer of vaccine		
No	Reference	
Yes	56.6 (37.4–85.6)	

\*odds ratio adjusted for all other demographic, service use, and social variables

**Postpartum behavior of Breastfeeding and seasonal** influenza vaccine coverage during pregnancy, Georgia and Rhode Island, 2006–2007

	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Georgia		
No	Reference	
Yes	1.09 (0.99–1.20)	
<b>Rhode Island</b>		
No	Reference	Reference
Yes	1.58 (1.24–2.01)	1.38 (1.05–1.80)

\*odds ratio adjusted for all other demographic, service use, and social variables



### Summary

- Although pregnant women are at increased risk for flu complications, vaccine coverage among this population is low
- Provider advice/offer influences women's decisions to receive seasonal influenza vaccine during pregnancy
- Women who received the seasonal influenza vaccine were more likely to report breastfeeding postpartum. Encouraging finding in light of the ACIP recommendations to encourage vaccination of close household contacts of infants and breastfeeding women
- Barriers identified using PRAMS data could be useful in developing outreach strategies for pregnant women and providers
- PRAMS data are state-specific and thus are very useful for assessing state-level seasonal influenza vaccine uptake by pregnant women—a priority group
- Beginning in 2009, PRAMS started data collection in 31 states on uptake of seasonal influenza vaccination

### Limitations

- Data on flu vaccination were only available from two states
- PRAMS data were self-reported; therefore they may be subject to recall bias
- Information on provider recommendations was assessed by maternal reports and may not be representative of provider practices

### What You Can Do

- Develop outreach strategies to educate providers/pregnant women about the importance of recommending/receiving flu vaccines
- If you provide programs or services to pregnant women:
- Advise them to get inactivated seasonal and H1N1 vaccinations regardless of trimester of pregnancy
- Assure them that the vaccine is safe for them and their unborn baby
- Advise them to take precautions to protect themselves from exposure to infected persons
- Encourage breastfeeding!

### Partners

Centers for Disease Control and Prevention

Pregnancy Risk Assessment and Monitoring (PRAMS) Program Women's Health and Fertility Branch; Division of Reproductive Healt National Center on Birth Defects and Developmental Disabilities

Georgia Department of Health, Atlanta, GA Rhode Island Department of Health, Providence, RI



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