

Association between provider recommendation and vaccine uptake during pregnancy, Rhode Island



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INTRODUCTION

Preconception and prenatal immunization rates for pertussis, influenza, and COVID-19 are lower than desired, leaving many pregnant patients and their newborns at risk for complications from these serious vaccine-preventable diseases. A strong recommendation from a healthcare provider is the single most important factor in determining whether someone gets vaccinated.

OBJECTIVE

To assess influenza, COVID-19, and Tdap vaccination uptake in relation to provider recommendation.

METHODS

Data Source

- 2023 Rhode Island Pregnancy Risk Assessment Monitoring System (PRAMS)

Study Measures

- Provider recommendation was assessed using the question, "During the 12 months before your new baby was born, did a healthcare provider offer you the following shots or vaccinations?". Response options were Yes/No for influenza, COVID-19, and Tdap vaccines
- Vaccine receipt was assessed using the question, "Did you get the following shots or vaccinations before or during your pregnancy?". Responses of 1) 3 months before pregnancy and 2) during pregnancy were combined into one category indicating vaccine receipt

Analyses

- Descriptive analysis was used to examine the relationship between provider recommendation and vaccine receipt
- Each vaccine was analyzed independently

RESULTS

Table 1. Demographics of Rhode Island individuals who gave birth in 2023

Characteristics	% (95% Confidence Interval)
Age (years)	
<25	16.4 (13.4-19.4)
25-29	22.0 (18.7-25.3)
30+	61.5 (57.6-65.4)
Race/Ethnicity	
Hispanic/Latina	32.3 (28.5-36.0)
Black (non-Hispanic)	6.5 (4.3-8.7)
White (non-Hispanic)	51.3 (47.3-55.4)
All other identities	9.9 (7.5-12.2)
Insurance during preconception	
Private	53.1 (49.1-57.1)
Public/None	46.9 (39.5-54.3)
Routine healthcare in 12 months preconception	85.3 (82.4-88.1)
Any housing or food insecurity	19.7 (52.8-60.7)

RESULTS

Table 2. Percent reporting preconception/prenatal influenza, Tdap, and COVID-19 vaccines, where healthcare provider offered and did not offer vaccine.

	Healthcare provider offered vaccine	Healthcare provider did not offer vaccine
	% Receiving Vaccine (95% Confidence Interval)	
Influenza vaccine	71.8 (67.9-75.7)	28.4 (18.1-38.8)
Tdap vaccine	85.4 (82.3-88.5)	57.1 (45.6-68.6)
COVID-19 vaccine	49.6 (44.9-54.4)	29.2 (22.0-36.4)

CONCLUSIONS

- Across all 3 vaccine types, respondents were at least 50% more likely to report receiving the vaccine if a healthcare provider had offered it.
- The difference was greatest for seasonal flu vaccine.
- Clinicians and public health programs should work to clarify what logistics and/or patient attitudes explain the greater receipt of Tdap vaccine compared to seasonal flu and COVID-19 vaccines.
- Ongoing education is needed for expecting parents on the importance of immunizations before, during, and after pregnancy.
- Ongoing clinical-public health collaboration can identify timesaving mechanisms to allow time-strapped providers to implement additional counseling (e.g., recommending "bundling" of vaccines unless contraindicated by vaccine seasonal schedules).

NEXT STEPS

A quality improvement project to increase immunization rates among pregnant patients is underway.

- Goal: To improve immunization coverage rates using evidenced-based tools chosen by practices with the aim of increasing patient counseling on recommended needed immunizations.
- Activities: Building a family-health approach through
 - Peer learning
 - Quality improvement
 - Regular engagement with other clinicians
 - Provider and team confidence- and skills-building in addressing vaccine hesitancy, and misinformation, and vaccine myths.

The project convenes regularly scheduled Planning Committee meetings to assist with program design and development of measurement specifications for Tdap, influenza, and COVID-19 vaccine coverage for pregnant patients.

OUTREACH MATERIALS

Small State Big Deal

Get Vaccinated!

Protect Mom and Baby: Get Vaccinated During Pregnancy!

Are you pregnant or planning to be? It's important to keep both you and your baby healthy. One way to do that is by getting vaccinated!

Why Vaccination Matters:

- Babies benefit from vaccination during pregnancy because you pass on some protection to your baby, helping them stay healthy after they're born.
- Vaccination helps protect your baby against hospitalization. Diseases like whooping cough and RSV can be life-threatening for newborns.

What Vaccine Are Recommended:

- Flu and COVID-19 vaccine protect you and your baby from risk of illness, which can be dangerous during pregnancy.
- Whooping cough (Tdap) vaccine is best when given between 27 to 36 weeks of pregnancy.
- Respiratory Syncytial Virus (RSV) vaccine is best when given between 32 and 36 weeks of pregnancy, and during respiratory illness season most active months of September-January.

How to Protect Your Baby After Pregnancy:

- Newborns are too young to get flu, COVID-19, and Tdap vaccination. Everyone who cares for a baby should get routine vaccines to help keep newborns safe.
- Ask friends and family to stay away if they are sick or have been around sick people.

Getting up-to-date on vaccination is an important step to protect your family. Talk to your doctor about which vaccines are right for you.

Immunization Information for Pregnancy: health.ri.gov/preg-vax



REFERENCES

Rasmussen SA, Kim J, Jamieson DJ. Vaccines in Pregnancy: An Update on Recommendations From CDC's Advisory Committee on Immunization Practices. Birth Defects Res. 2025 Feb;117(2):e2459.

CDC - PRAMS Questionnaires
<https://www.cdc.gov/prams/php/questionnaires/index.html>

RIDOH - Immunization Information For Pregnant People
<https://health.ri.gov/immunization/information/immunization-information-pregnant-people>

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