



# Clinical Vaccination Guidance for Pregnant People

Clinician Outreach and Communication Activity (COCA) Call

Thursday, August 10, 2023

# Free Continuing Education

- Free continuing education is offered for this webinar.
- Instructions on how to earn continuing education will be provided at the end of the call.

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- In compliance with continuing education requirements, all planners and presenters must disclose all financial relationships, in any amount, with ineligible companies over the previous 24 months as well as any use of unlabeled product(s) or products under investigational use.
- CDC, our planners, and presenters wish to disclose they have no financial relationship(s) with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients with the exception of Dr. Naima Joseph who would like to disclose that she is a co-investigator on a Paxlovid in pregnancy study for Pfizer. All of the relevant financial relationships listed for these individuals have been mitigated.
- Content will not include any discussion of the unlabeled use of a product or a product under investigational use.
- CDC did not accept financial or in-kind support from ineligible companies for this continuing education activity.

# Objectives

At the conclusion of today's session, the participant will be able to accomplish the following:

1. Discuss current CDC and ACOG recommendations for vaccination during pregnancy, with a focus on Tdap, influenza, and COVID-19 vaccines.
2. Cite the current vaccination coverage for Tdap, influenza, and COVID-19 among pregnant people in the United States.
3. Explain the burden of pertussis, influenza virus, and SARS-CoV-2 infections in pregnant people and infants.
4. Describe the benefits of Tdap, influenza, and COVID-19 vaccination during pregnancy for both pregnant people and their infants.
5. Review clinical considerations and best practices for making strong recommendations for vaccination and overcoming barriers to vaccination among pregnant people.

# To Ask a Question

- Using the Zoom Webinar System
  - Click on the “Q&A” button
  - Type your question in the “Q&A” box
  - Submit your question
- If you are a patient, please refer your question to your healthcare provider.
- If you are a member of the media, please direct your questions to CDC Media Relations at 404-639-3286 or email [media@cdc.gov](mailto:media@cdc.gov).

# Today's Presenters

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Centers for Disease Control and Prevention

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**Centers for Disease Control and Prevention**  
National Center for Immunization and Respiratory Diseases



# **Clinical Vaccination Guidance for Pregnant People**

**Clinician Outreach and Communication Activity (COCA) Call**

**August 10, 2023**

# Maternal Vaccination Recommendations

## Overview





# Recommended Adult Immunization Schedule 2023

## Recommended Adult Immunization Schedule for ages 19 years or older

UNITED STATES  
**2023**

### How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (**Table 1**)
- 2** Assess need for additional recommended vaccinations by medical condition or other indication (**Table 2**)
- 3** Review vaccine types, dosing frequencies and intervals, and considerations for special situations (**Notes**)
- 4** Review contraindications and precautions for vaccine types (**Appendix**)

Recommended by the Advisory Committee on Immunization Practices ([www.cdc.gov/vaccines/acip](http://www.cdc.gov/vaccines/acip)) and approved by the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)), American College of Physicians ([www.acponline.org](http://www.acponline.org)), American Academy of Family Physicians ([www.aafp.org](http://www.aafp.org)), American College of Obstetricians and Gynecologists ([www.acog.org](http://www.acog.org)), American College of Nurse-Midwives ([www.midwife.org](http://www.midwife.org)), American Academy of Physician Associates ([www.aapa.org](http://www.aapa.org)), American Pharmacists Association ([www.pharmacist.com](http://www.pharmacist.com)), and Society for Healthcare Epidemiology of America ([www.shea-online.org](http://www.shea-online.org)).

### Vaccines in the Adult Immunization Schedule\*

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19 vaccine	1vCOV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine SPIKEVAX®/Moderna COVID-19 Vaccine
	2vCOV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent Moderna COVID-19 Vaccine, Bivalent
	1vCOV-aPS	Novavax COVID-19 Vaccine
<i>Haemophilus influenzae</i> type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinnrix®
Hepatitis B vaccine	HepB	Engerix-B® HepLisav-B® PreHevbrio® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Influenza vaccine (recombinant)	RIV4	Flublok® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II® Priorix®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra®
	MenACWY-CRM	Menveo®
	MenACWY-TT	MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C	Bexsero®
	MenB-FHbp	Trumenba®
Pneumococcal conjugate vaccine	PCV15	Vaxneuvance™
	PCV20	Prenar 20™
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23®
Poliovirus vaccine	IPV	IPOL®
Tetanus and diphtheria toxoids	Td	Tenivac® Tdvax™
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Varicella vaccine	VAR	Varivax®
Zoster vaccine, recombinant	RZV	Shingrix

\*Administer recommended vaccines if vaccination history is incomplete or unknown. Do not restart or add doses to vaccine series if there are extended intervals between doses. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

### Report


- Suspected cases of reportable vaccine-preventable diseases or outbreaks to the local or state health department
- Clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System at [www.vaers.hhs.gov](http://www.vaers.hhs.gov) or 800-822-7967

### Injury claims

All vaccines included in the adult immunization schedule except PPSV23, RZV, and COVID-19 vaccines are covered by the National Vaccine Injury Compensation Program (VICP). COVID-19 vaccines that are authorized or approved by the FDA are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation) or [www.hrsa.gov/cicp](http://www.hrsa.gov/cicp).

### Questions or comments

Contact [www.cdc.gov/cdc-info](http://www.cdc.gov/cdc-info) or 800-CDC-INFO (800-232-4636), in English or Spanish, 8 a.m.–8 p.m. ET, Monday through Friday, excluding holidays.

 Download the CDC Vaccine Schedules app for providers at [www.cdc.gov/vaccines/schedules/hcp/schedule-app.html](http://www.cdc.gov/vaccines/schedules/hcp/schedule-app.html).

### Helpful information

- Complete Advisory Committee on Immunization Practices (ACIP) recommendations: [www.cdc.gov/vaccines/hcp/acip-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/index.html)
- *General Best Practice Guidelines for Immunization* (including contraindications and precautions): [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html)
- Vaccine information statements: [www.cdc.gov/vaccines/hcp/vis/index.html](http://www.cdc.gov/vaccines/hcp/vis/index.html)
- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): [www.cdc.gov/vaccines/pubs/surv-manual](http://www.cdc.gov/vaccines/pubs/surv-manual)
- Travel vaccine recommendations: [www.cdc.gov/travel](http://www.cdc.gov/travel)
- Recommended Child and Adolescent Immunization Schedule, United States, 2023: [www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html](http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html)
- ACIP Shared Clinical Decision-Making Recommendations: [www.cdc.gov/vaccines/acip/acip-scdm-faqs.html](http://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html)



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention



CS310021-C

<https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>

# Table 2: By indications

## Legend

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection	Recommended vaccination for adults with an additional risk factor or another indication	Recommended vaccination based on shared clinical decision-making	Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction	Contraindicated or not recommended—vaccine should not be administered. *Vaccinate after pregnancy.	No recommendation/ Not applicable
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Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 count		Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism <sup>a</sup>	Chronic liver disease	Diabetes	Healthcare personnel <sup>b</sup>	Men who have sex with men
			<15% or <200mm <sup>3</sup>	≥15% and ≥200mm <sup>3</sup>							
<a href="#">COVID-19</a> ⓘ		See <a href="#">notes</a>									
<a href="#">IIV4</a> ⓘ or <a href="#">RIV4</a>	1 dose annually										
or <a href="#">LAIV4</a> ⓘ	Contraindicated					Precaution			or 1 dose annually		
<a href="#">Tdap or Td</a> ⓘ	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 yrs									
<a href="#">MMR</a> ⓘ	Contraindicated*	Contraindicated	1 or 2 doses depending on indication								

# Table 2: By indications (cont.)

**Legend**

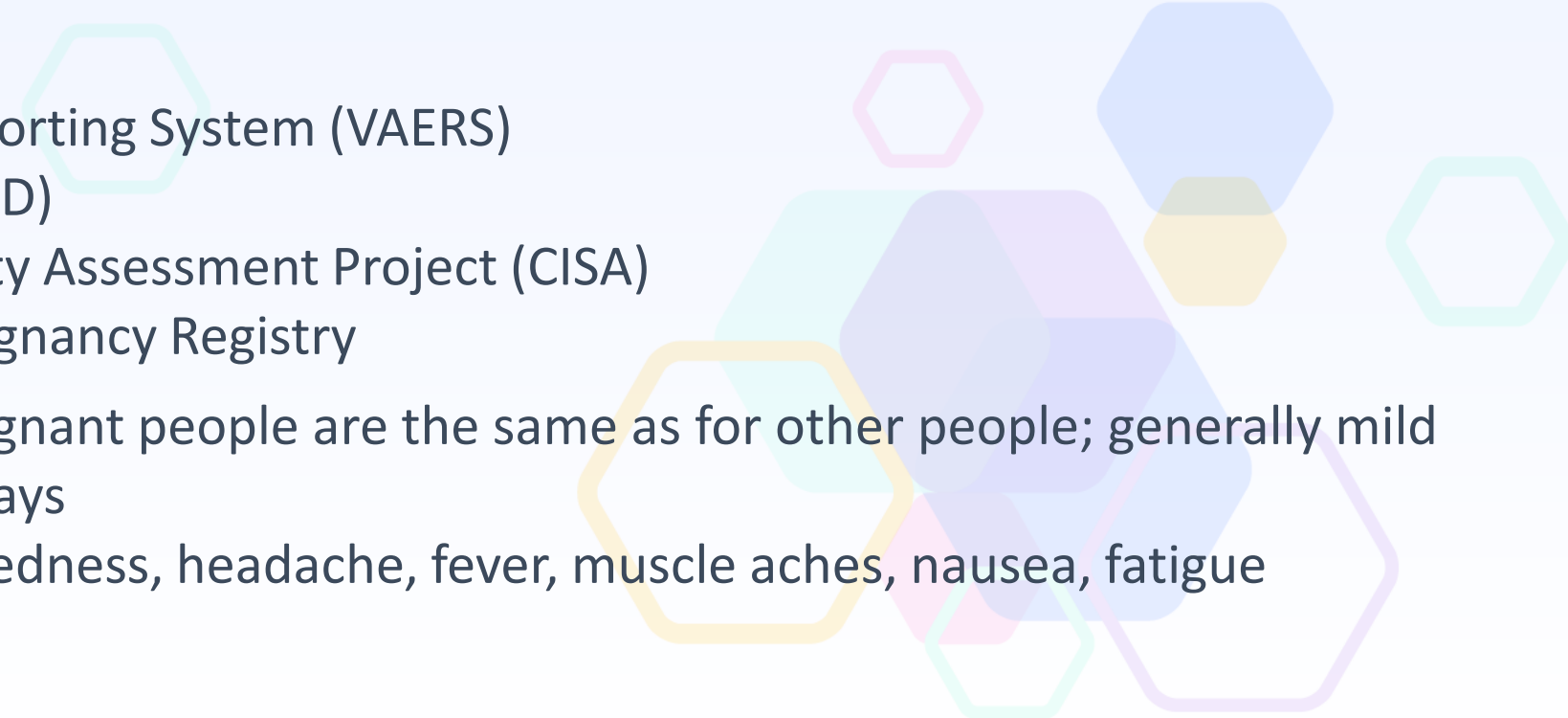
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			<15% or <200mm <sup>3</sup>	≥ 15% and ≥200mm <sup>3</sup>							
<a href="#">VAR</a> ⓘ	Contraindicated*	Contraindicated			2 doses						
<a href="#">RZV</a> ⓘ		2 doses at age ≥ 19 years			2 doses at age ≥ 50 yrs						
<a href="#">HPV</a> ⓘ	Not Recommended*	3 doses through age 26 yrs			2 or 3 doses through age 26 years depending on age at initial vaccination or condition						
<a href="#">Pneumococcal (PCV15, PCV20, PPSV23)</a> ⓘ		1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see <a href="#">notes</a> )									
<a href="#">HepA</a> ⓘ					2, 3, or 4 doses depending on vaccine						
<a href="#">HepB</a> ⓘ	3 doses (see <a href="#">notes</a> )		2, 3, or 4 doses depending on vaccine or condition								
<a href="#">MenACWY</a> ⓘ			1 or 2 doses depending on indication, see <a href="#">notes</a>		for booster recommendations						

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# **Safety of Vaccination during Pregnancy**

# Vaccine Safety during Pregnancy

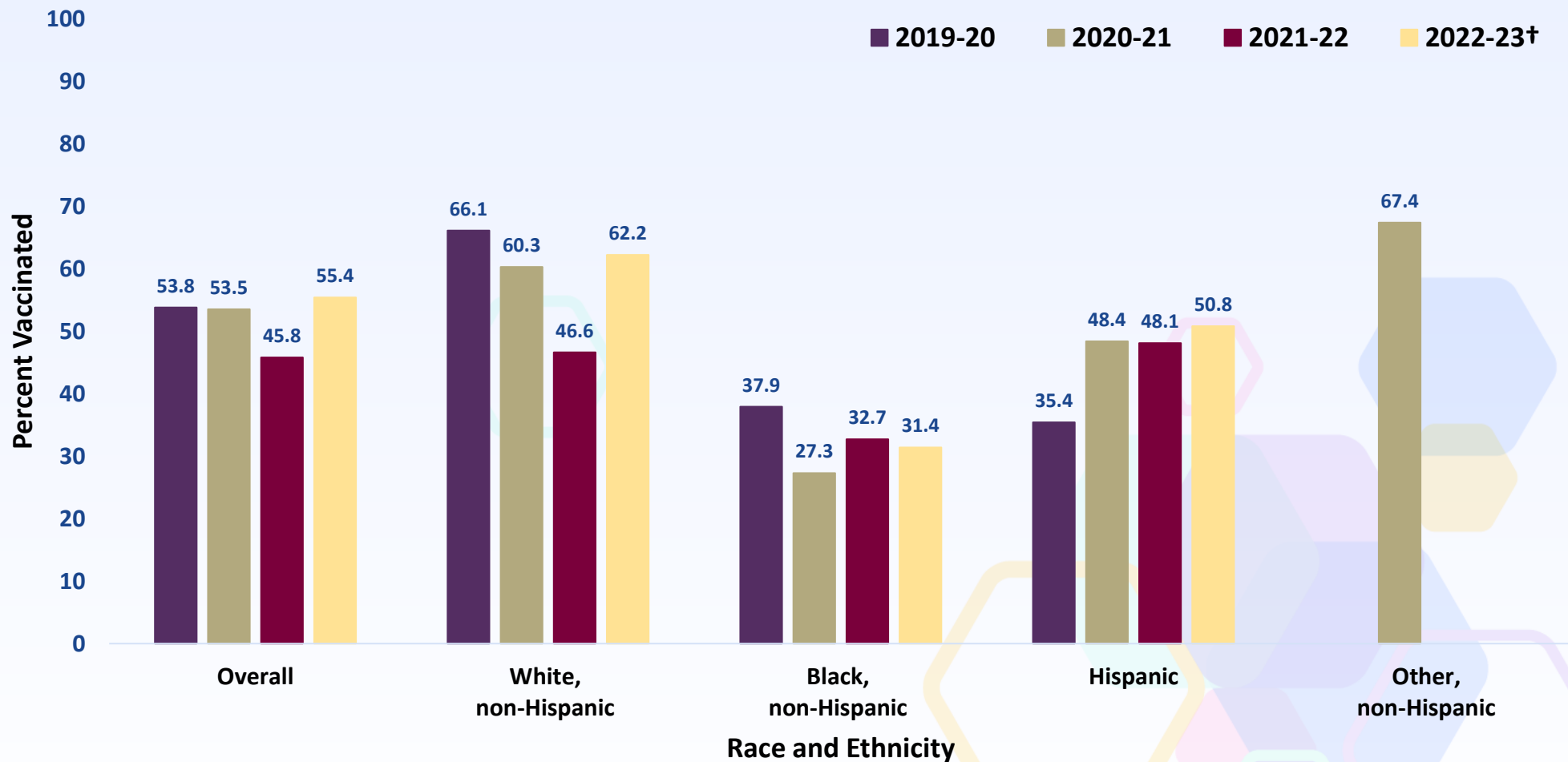
- Tdap, Influenza, and COVID-19 vaccination before and during pregnancy is safe, effective, and beneficial to both the pregnant person and the baby.
  - Safety data collected in the United States continue to be reassuring
    - No increased risk of adverse events among women or infants
    - No concerning patterns in maternal, fetal, or infant outcomes
  - Safety monitoring is ongoing
    - Vaccine Adverse Event Reporting System (VAERS)
    - Vaccine Safety Datalink (VSD)
    - Clinical Immunization Safety Assessment Project (CISA)
    - CDC COVID-19 Vaccine Pregnancy Registry
  - Common side effects for pregnant people are the same as for other people; generally mild and self-resolve within 1-2 days
    - Injection site soreness or redness, headache, fever, muscle aches, nausea, fatigue
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# Vaccination Coverage among Pregnant People

# Tdap vaccination coverage\* among pregnant women by race and ethnicity, 2019-20 through 2022-23† influenza seasons

Coverage was significantly higher overall and for White women in 2022-23 compared with 2021-22



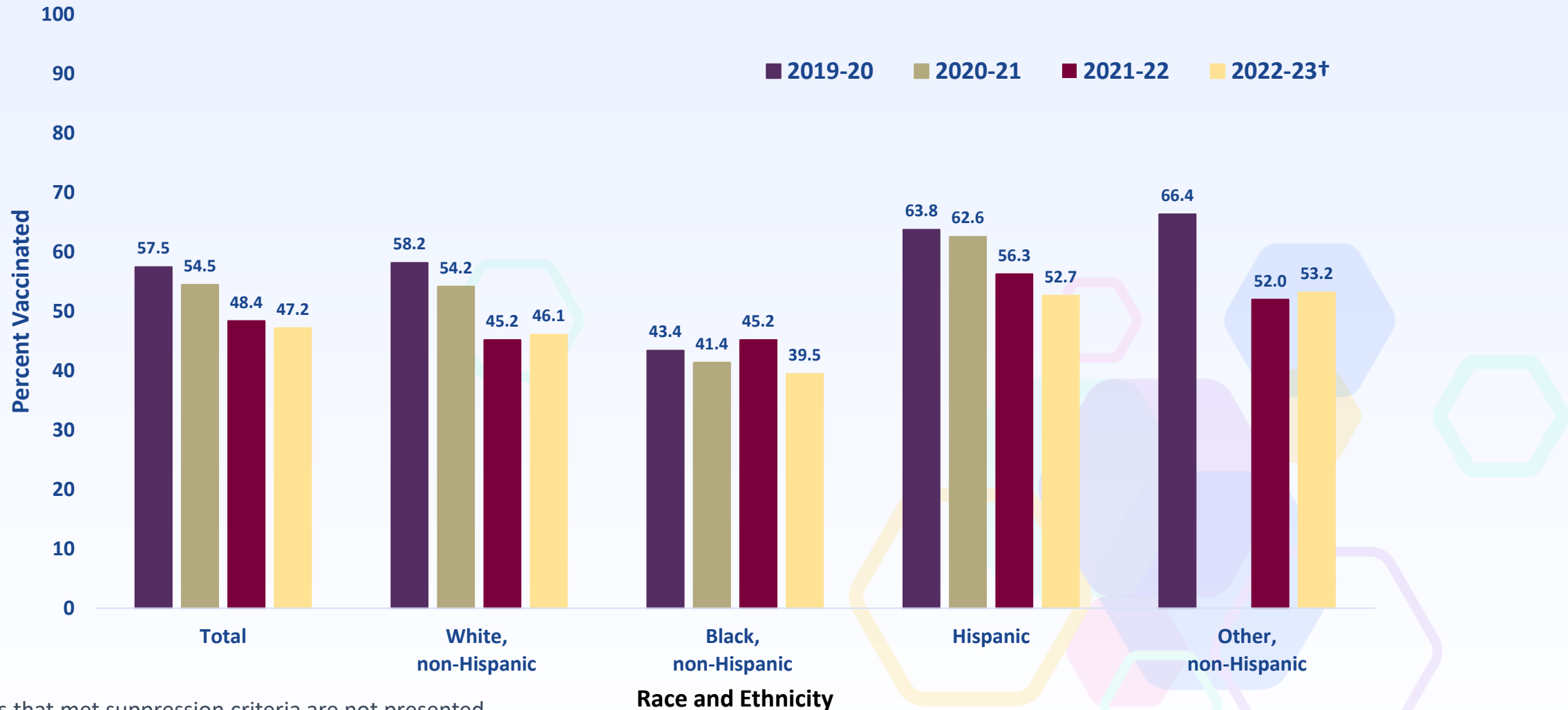
NOTE: Estimates that met suppression criteria are not presented.

\*Women who reported a pregnancy since August 1 of each season who had a live birth by the time of the survey and were vaccinated during most recent pregnancy were counted as vaccinated.

†The estimates for 2022-23 season are preliminary and have not been published.

# Influenza vaccination coverage\* among pregnant women by race and ethnicity, 2019-20 through 2022-23<sup>†</sup> influenza seasons

*Coverage for 2022-23 season was similar to that of 2021-22 (Overall and by race and ethnicity)*



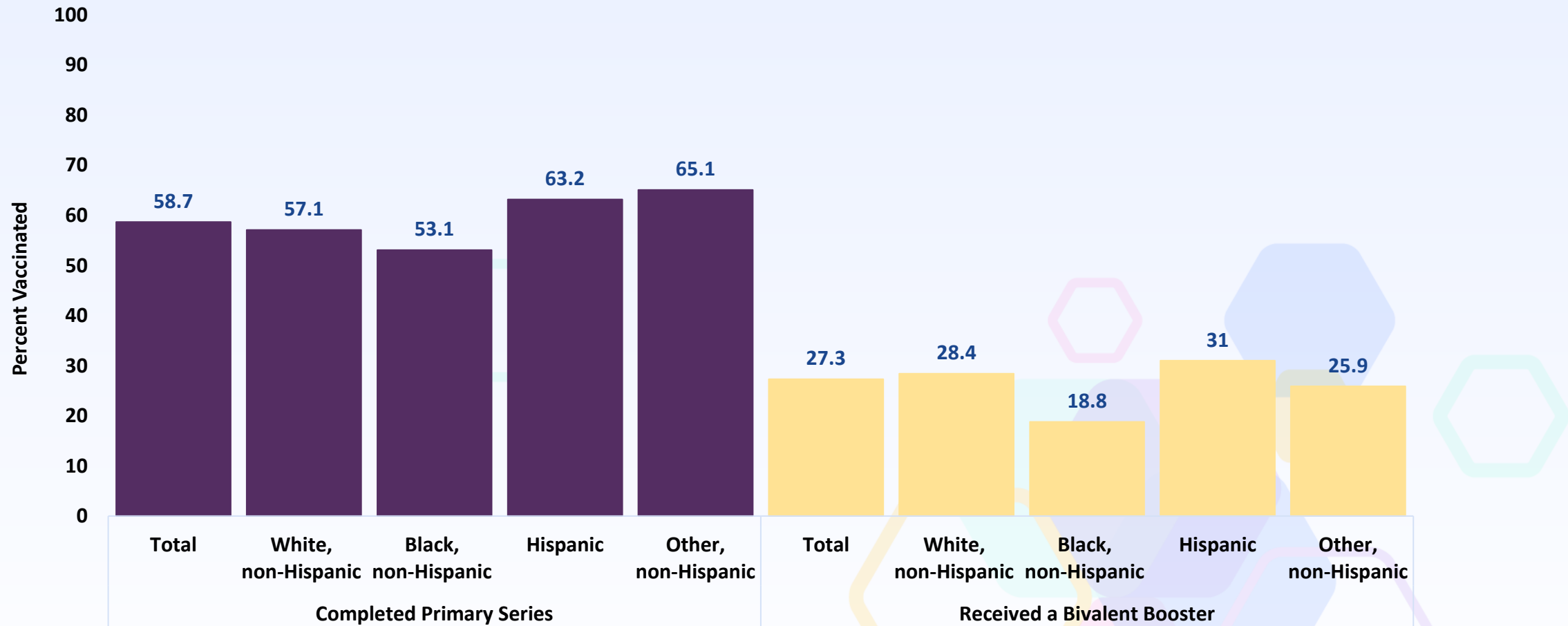
NOTE: Estimates that met suppression criteria are not presented.

\*Women pregnant anytime between Oct to January who were vaccinated before/during pregnancy since July 1 were counted as vaccinated.

<sup>†</sup>The estimates for 2022-23 season are preliminary and have not been published.



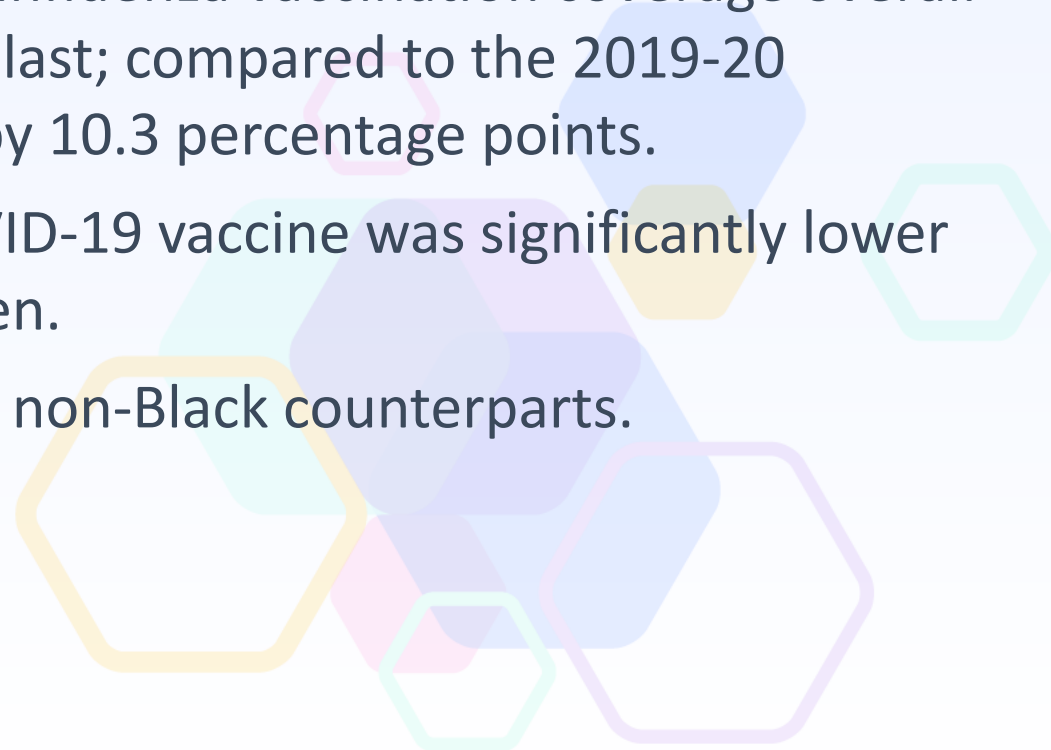
# COVID-19 vaccination coverage\* among pregnant women by race and ethnicity, April 2023<sup>†</sup>



\*COVID-19 vaccination coverage was assessed among women who reported being pregnant at the time of the survey. If a woman reported receiving two doses of the Moderna, Pfizer-BioNTech, or Novavax vaccines or a single dose of the Janssen vaccine, she was considered to have completed the primary series. An additional dose was required for women who reported being immunocompromised.

<sup>†</sup>The estimates are preliminary and have not been published.

# Summary of Findings

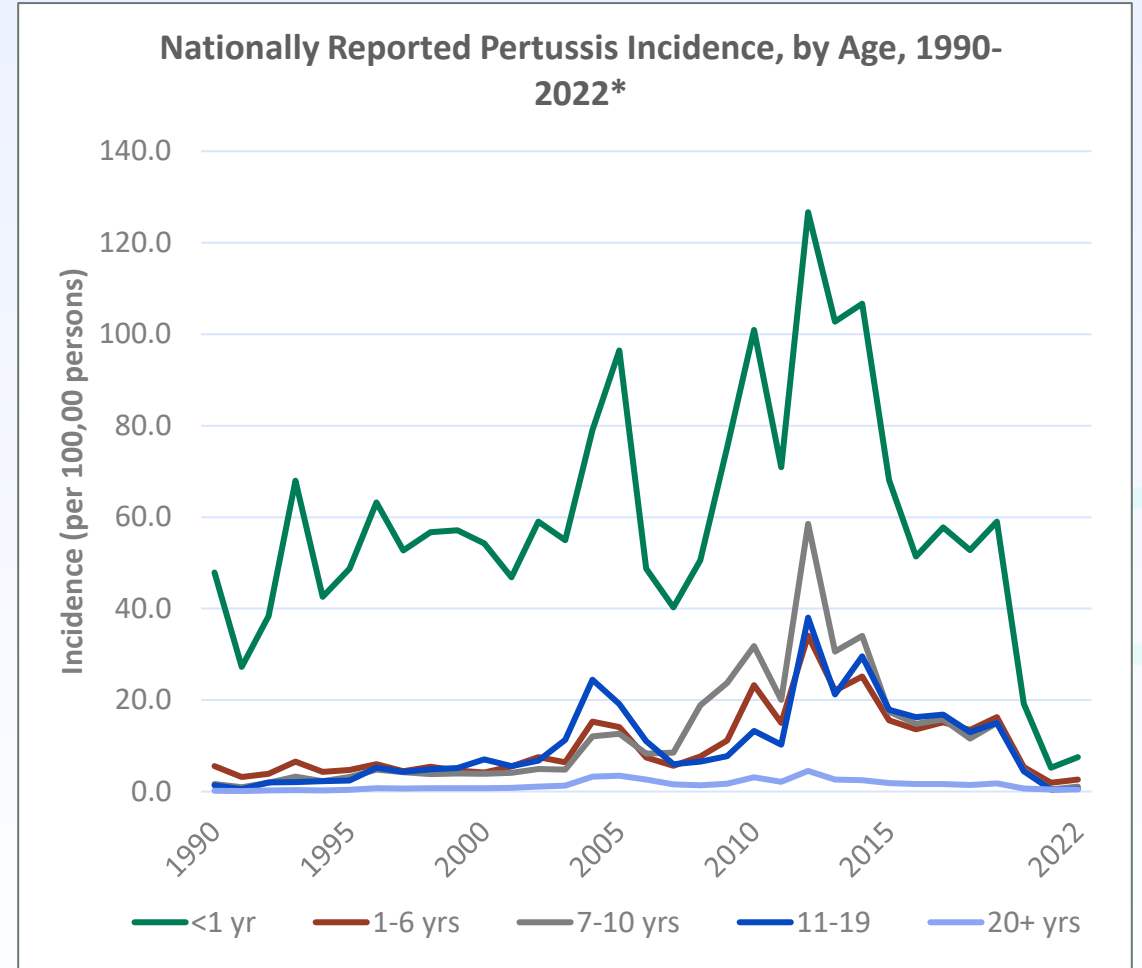
- Tdap vaccination coverage increased significantly overall (9.6 percentage points) and among White women (15.6 percentage points) this season and is similar to that of 2019-20 and 2020-21 seasons.
  - Although there were no significant differences in influenza vaccination coverage overall or by race and ethnicity between this season and last; compared to the 2019-20 season, influenza vaccination coverage dropped by 10.3 percentage points.
  - Coverage with the bivalent booster dose of a COVID-19 vaccine was significantly lower among Black women compared with White women.
  - Vaccination coverage in Black women lags behind non-Black counterparts.
- 

# Tdap Vaccination during Pregnancy



# Burden of Disease: Pertussis (Whooping Cough)

- Highly contagious, vaccine-preventable disease
- Highest morbidity and mortality among infants, especially in the early months of life
- Poorly controlled, despite high vaccine coverage
  - Increase in reported cases beginning in 1990s up until COVID-19 pandemic



Source: CDC, National Notifiable Diseases Surveillance System; \*2022 data provisional

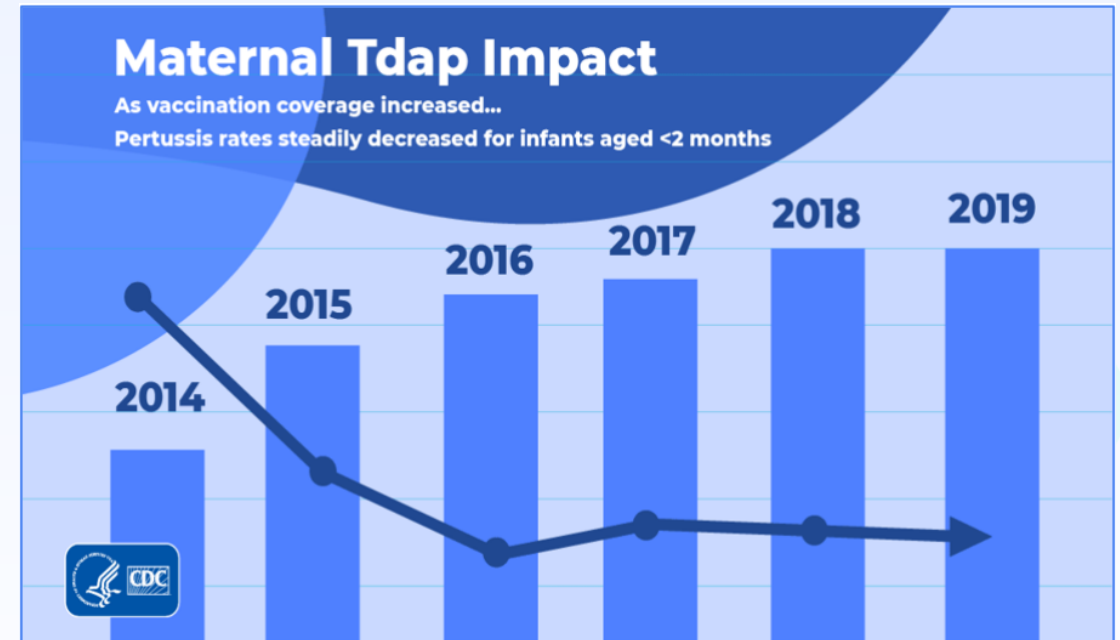
# Tdap Recommendations for Pregnant People

- In late 2011, the U.S. introduced Tdap vaccination during pregnancy to protect infants during the early months of life
- **Recommendation:** A dose of Tdap during **each pregnancy**, preferably in early part of gestational weeks 27–36 to maximize passive antibody transfer
  - However, may be administered at any time during pregnancy
- FDA approved use of Tdap among pregnant people to prevent pertussis in infants <2 months old in Oct. 2022 (Boostrix<sup>®</sup>) and Jan. 2023 (Adacel<sup>®</sup>)



# Effectiveness and Impact of Tdap Vaccination during Pregnancy

- Vaccine effectiveness studies have estimated the strategy to be **69% to 93% effective** at preventing infant pertussis
  - Tdap vaccination during pregnancy is associated with a 2.5-fold reduction in pertussis among infants aged <2 months in the U.S.
- Tdap vaccination during pregnancy reduces the risk of hospitalization or admission to ICU among infants who get pertussis



Skoff, et.al. *JAMA Peds* 2023

**Sources:** Amirthalingam G et. al, *Lancet* 2014; Dabrera G et. al. *Clin Infect Dis* 2015; Amirthalingam G et. al. *Clin Infect Dis* 2016; Baxter R, et. al. *Pediatrics* 2017; Skoff et. al. *Clin Infect Dis* 2017;

Winter K et. al. *Clin Infect Dis* 2017; Saul N et. al. *Vaccine* 2018; Vygen-Bonnet S. et. al. *BMC Infec Dis* 2020; Skoff, et.al. *JAMA Peds* 2023

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# **Influenza Vaccination during Pregnancy**

# Influenza (Flu) in Pregnant People and Their Infants

- Pregnant people are at **increased risk for hospitalization** with influenza compared to non-pregnant people of reproductive age
- Influenza during pregnancy also **may be associated with some adverse pregnancy outcomes**
- **Infants aged <6 months have the highest risk for hospitalization with influenza of all children** *but* are too young to get influenza vaccines



Sources: CDC [2023], [Flu & Pregnancy](#) | CDC, webpage

CDC [2023], [Protect Against Flu: Caregivers of Infants and Young Children](#) | CDC, webpage



# Preview: 2023-2024 ACIP Influenza Vaccination Recommendations

- All persons aged  $\geq 6$  months should receive an influenza vaccine annually
- Recommendations for pregnant persons
  - Any licensed, age-appropriate quadrivalent inactivated or recombinant influenza vaccine may be used
  - Influenza vaccines may be given during any trimester of pregnancy
  - Influenza vaccines should ideally be offered in September or October (with continued vaccination throughout influenza season)
    - Early vaccination in July or August can be considered for pregnant persons in the third trimester to optimize protection of their infants who will be born during the upcoming influenza season [same as the 2022-2023 ACIP Recommendations]

# Benefits of Influenza Vaccination during Pregnancy

**Influenza vaccination is the most effective method of preventing influenza illness for pregnant people *and* their young infants <6 months of age**

- Influenza vaccine effectiveness is similar for pregnant people compared to non-pregnant people of reproductive age
- Vaccinated pregnant people pass antibodies to their developing babies that help protect against influenza in the first few months of life
- In previous studies, influenza vaccination during pregnancy lowered the risk of influenza hospitalization in
  - Pregnant persons by an average of 40%
  - Infants aged <6 months by an average of 72%



**Sources:** CDC [2019], [vs-1008-maternal-vaccines-H.pdf \(cdc.gov\)](#), webpage

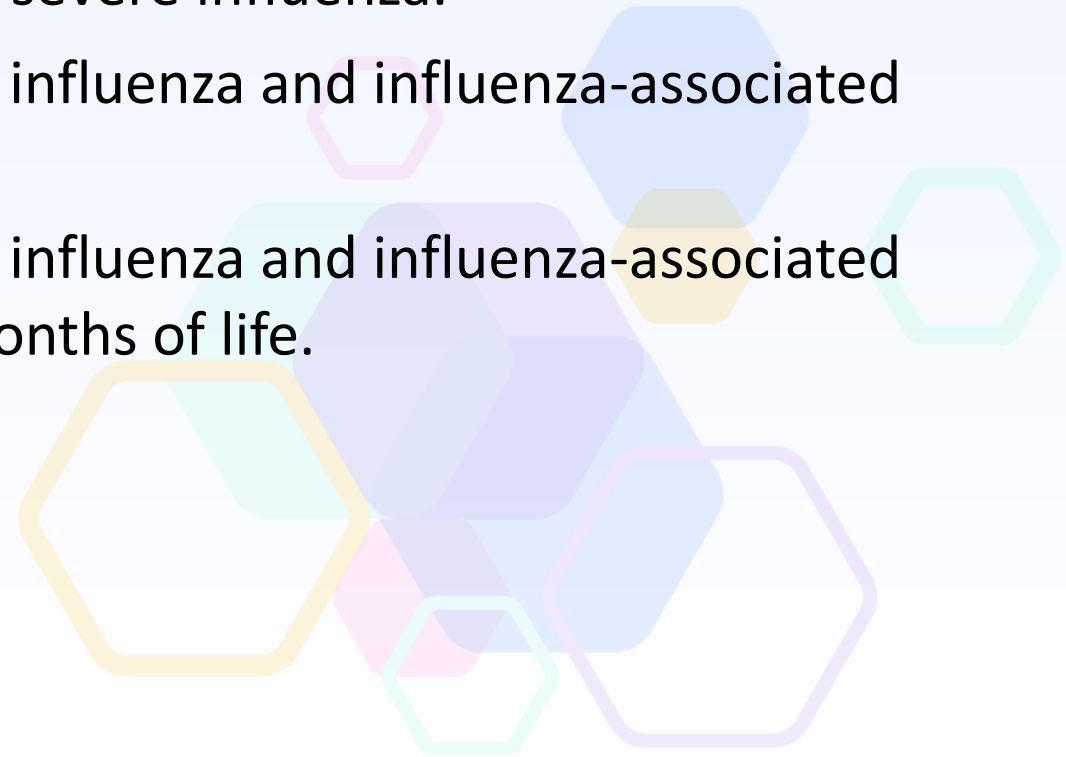
Nunes MC, Madhi SA. Influenza vaccination during pregnancy for prevention of influenza confirmed illness in the infants: A systematic review and meta-analysis. *Hum Vaccin Immunother.* 2018 Mar 4;14(3):758-766. doi: 10.1080/21645515.2017.

Thompson MG, Kwong JC, Regan AK, et al. ; PREVENT Workgroup. Influenza vaccine effectiveness in preventing influenza-associated hospitalizations during pregnancy: a multi-country retrospective test negative design study, 2010–2016. *Clin Infect Dis* 2019;68:1444–53.

# Self-knowledge Check #1

Which of the following are reasons to encourage pregnant people to get an annual influenza vaccine?

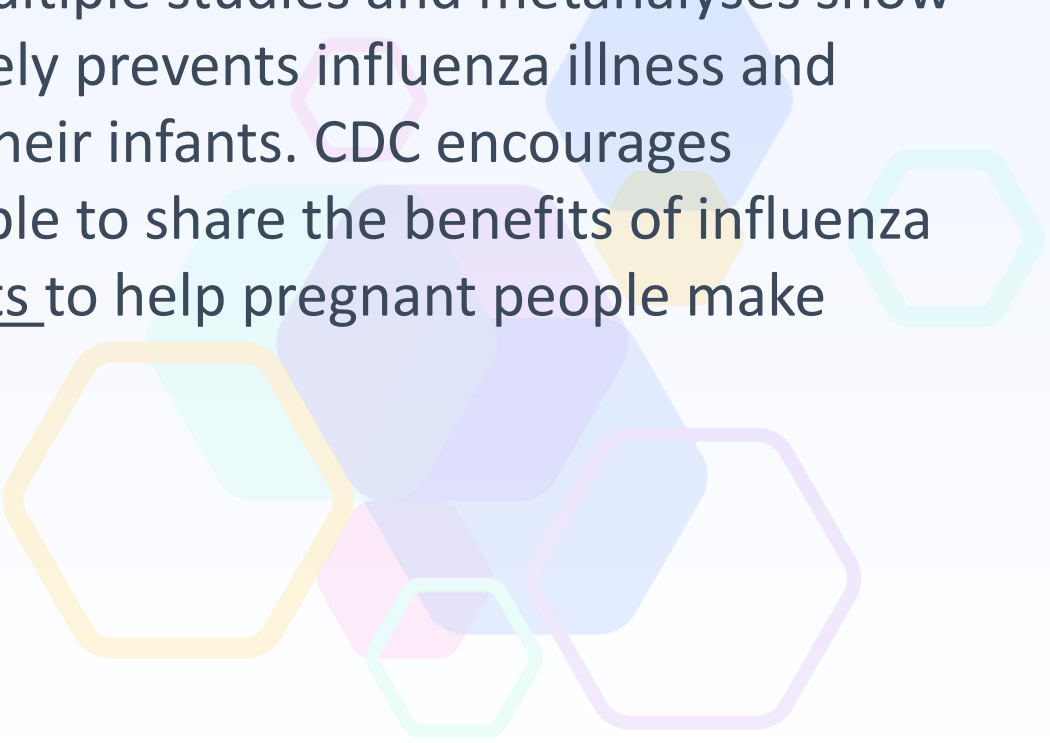
- A. Pregnant people are considered at higher risk for severe influenza.
- B. Prenatal influenza vaccination reduces the risk of influenza and influenza-associated hospitalizations among pregnant people.
- C. Prenatal influenza vaccination reduces the risk of influenza and influenza-associated hospitalizations among infants in their first few months of life.
- D. A and B only
- E. All of the Above



# Self-knowledge Check #1 (answer)

The correct answer is **E**.

Pregnant people are a higher risk for influenza-associated hospitalizations than non-pregnant people of reproductive age. In addition, multiple studies and metaanalyses show that influenza vaccination during pregnancy effectively prevents influenza illness and associated hospitalizations in pregnant people and their infants. CDC encourages healthcare professionals who care for pregnant people to share the benefits of influenza vaccination both to pregnant people and their infants to help pregnant people make decisions about whether to receive a vaccine.



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# **COVID-19 Vaccination during Pregnancy**

# Burden of SARS-CoV-2 infection in pregnant persons and infants

## ■ Pregnant persons

- COVID-19 during pregnancy is associated with severe maternal health outcomes and adverse pregnancy outcomes
- Risk of complications lower, but still elevated, during the Omicron predominant period compared to pre-Omicron period
  - Possibly due to the impact of prior infection and vaccination
  - Most hospitalized pregnant persons with a positive SARS-CoV-2 test were not up to date with vaccinations

## ■ Infants

- COVID-19-associated hospitalization rates in infants ages 0–5 months increased in the Omicron period
  - Elevated higher relative to pre-Omicron rates
  - Hospitalization rates similar to those in adults ages 65–74 years
  - Majority of infants ages 0–5 months hospitalized with a positive SARS-CoV-2 test were hospitalized with COVID-19-like symptoms
  - Excluding birth hospitalizations, 20% of infants 0-5 months of age with COVID-19-associated hospitalizations since June 2022 were admitted to the ICU

# VISION: Absolute vaccine effectiveness (VE) of COVID-19 bivalent doses received during pregnancy against emergency department/urgent care encounters among immunocompetent pregnant persons aged 18-45 years – September 2022 – May 2023\*

Vaccine Dosage Pattern	Total tests	SARS-CoV-2-test-positive, N (%)	Median interval since last dose, days (IQR)	Adjusted VE (95% CI)
<b>Absolute VE</b>				
Unvaccinated (ref)	1701	196 (12)	--	Ref
<b>Bivalent</b> dose**	191	10 (5)	56 (29, 97)	<b>61 (22, 81)***</b>

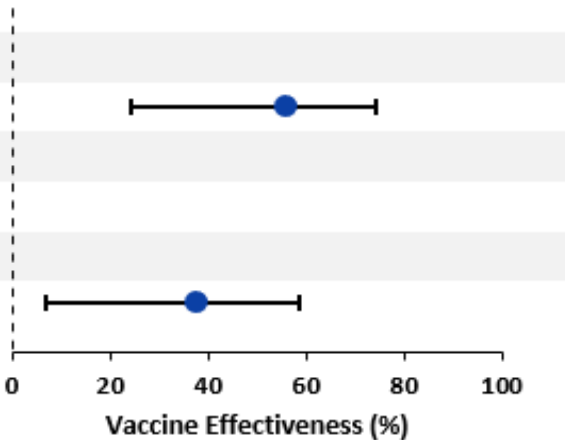
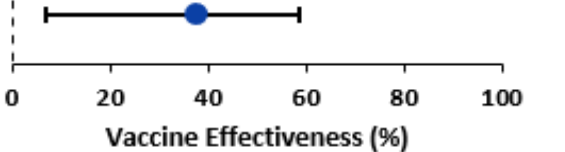
Adjusted for: Age, ethnicity, race, underlying medical conditions, gestational age at encounter, site, Medicaid status, day of encounter, site facility urbanicity

\*Unpublished CDC data

\*\*Doses received **during** pregnancy for bivalent group

\*\*\*These interim estimates are imprecise, which might be because of a relatively small number of persons in each level of vaccination or case status. This imprecision indicates the actual VE may be substantially different from the point estimate shown, and estimates should therefore be interpreted with caution. Additional data accrual should increase precision and allow appropriate interpretation.

# Overcoming COVID-19: Effectiveness of maternal vaccination in prevention of hospitalization among infants – March 9, 2022 – May 9, 2023

Vaccination during pregnancy*	Total	Case infants, N (%)	Median interval since last maternal dose, days (IQR)	Infant median age at hospitalization, days (IQR)	Adjusted VE (95% CI)	Effectiveness of Maternal Vaccination against Infant Covid-19 Hospitalization % (95% CI)†
<b>Infants &lt;3 months of age at hospitalization</b>						
Unvaccinated (ref)	310	174 (56)	NA	44 (27 to 63)	Ref	
Vaccinated	101	43 (43)	222 (152 to 271)	41 (23 to 66)	56 (24 to 75)*	
<b>Infants &lt; 6 months of age at hospitalization</b>						
Unvaccinated (ref)	498	281 (56)	NA	68 (37 to 125)	Ref	
Vaccinated	163	78 (48)	236 (190 to 302)	74 (33 to 132)	38 (7 to 59)*	

\*Last mRNA or viral vector vaccine dose received between the beginning of pregnancy and 14 days before delivery. 14 people received a bivalent mRNA vaccine.

†These estimates are imprecise, which might be because of a relatively small number of persons in each level of vaccination or case status. This imprecision indicates the actual VE may be substantially different from the point estimate shown, and estimates should therefore be interpreted with caution. Additional data accrual should increase precision and allow appropriate interpretation.

CDC unpublished data. VE estimates adjusted for infant age, sex, race and ethnicity, census region, and month and year of hospitalization.



Staying up to date with COVID-19 vaccinations is recommended for people who are pregnant, trying to get pregnant now, or who might become pregnant in the future, and people who are breastfeeding.

- Everyone aged 6 years and older should get **1 updated Pfizer-BioNTech or Moderna COVID-19 vaccine** to be up to date.
- People who are moderately or severely immunocompromised may get additional doses of updated Pfizer-BioNTech or Moderna COVID-19 vaccine.

# Coadministration of COVID-19 Vaccines with Other Vaccines

- Routine administration of all age-appropriate doses of vaccines simultaneously is recommended as best practice for people for whom no specific contraindications exist at the time of the healthcare visit.
- Extensive experience with non-COVID 19 vaccines has demonstrated that immunogenicity and adverse event profiles are generally similar when vaccines are administered simultaneously as when they are administered alone.
- **Providers should offer all vaccines for which a person is eligible at the same visit.**

Sources: <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html>  
<https://www.cdc.gov/flu/prevent/coadministration.htm>  
<https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html>

The background features a light blue gradient with several hexagonal shapes in various colors (green, pink, blue, yellow, purple) scattered across the right side. Some hexagons are solid, while others are outlines.

# **Preview of Respiratory Syncytial Virus (RSV) Vaccination during Pregnancy**

# What's on the horizon for RSV?

- **Nirsevimab:** a long-acting monoclonal antibody product to be given to infants and some older babies for reducing the risk of severe disease from RSV.
  - CDC's Advisory Committee on Immunization Practices (ACIP) voted on Aug. 3, 2023, to recommend nirsevimab to help protect all infants and some older babies at increased risk of severe illness caused by RSV.
    - Specifically, CDC recommends one dose of nirsevimab for all infants born during – or entering – their first RSV season (typically fall through spring). For a small group of children between the ages of 8 and 19 months who are at increased risk of severe RSV disease, such as children who are severely immunocompromised, a dose is also recommended in their second season.
  - CDC's ACIP also voted to include nirsevimab in the Vaccines for Children program, which provides recommended immunizations at no cost to about half of the nation's children.
- **Pfizer bivalent RSVpreF vaccine is intended for use in pregnancy to protect infants after birth from RSV**
  - Pfizer has submitted a Biologics License Application to FDA for use of their RSVpreF vaccine in pregnant people (120µg antigen, 1 dose IM given 24-36 weeks gestation) to prevent RSV disease in infants.
  - An ACIP vote may be held at a future meeting if the vaccine is licensed by the FDA for use in pregnant people.

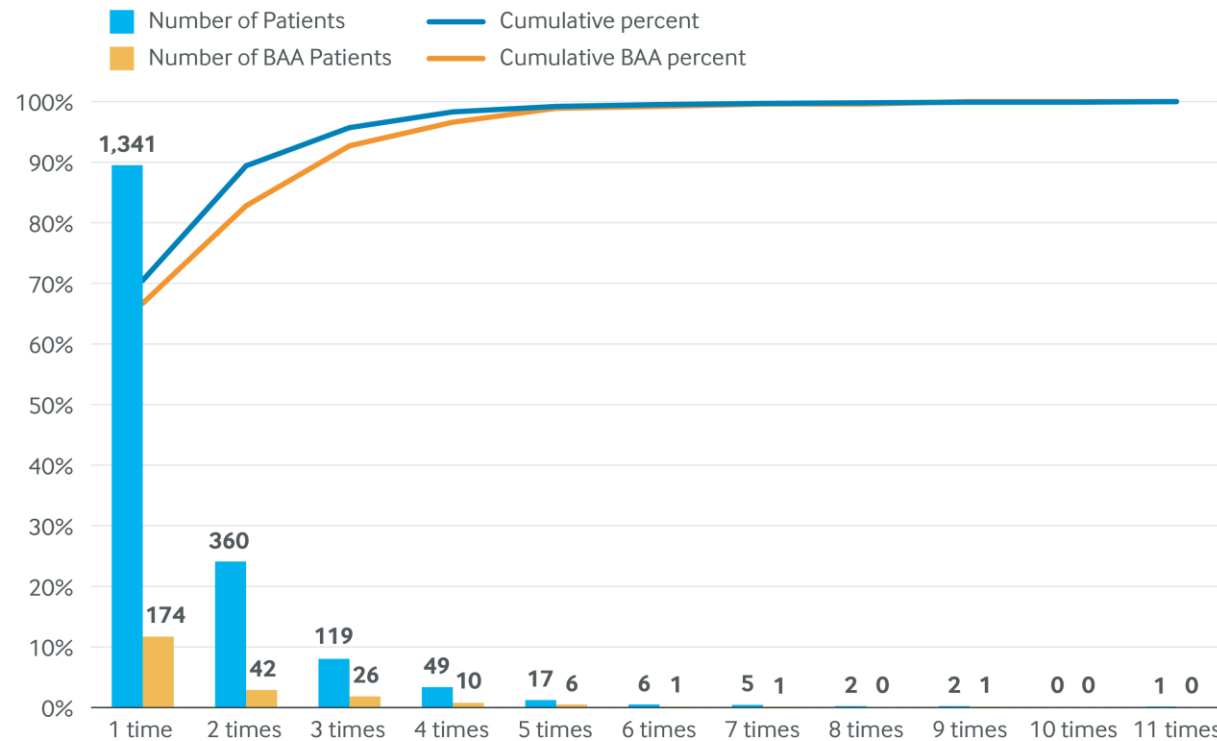
# Practical Tips for Making a Strong Recommendation



# Total Number of Documented “Postponed” Before Completing COVID-19 Vaccination for Patients Ages 5 and Up, March 2021-April 2022

## Total Number of Documented “Postponed” Before Completing Covid-19 Vaccination for Patients Ages 5 and Up, March 2021–April 2022

Some patients were offered the Covid-19 vaccine multiple times before eventually consenting to vaccination. While most patients accepted the vaccine after declining it once, a smaller proportion was offered the vaccine between two and 11 times before agreeing to it.



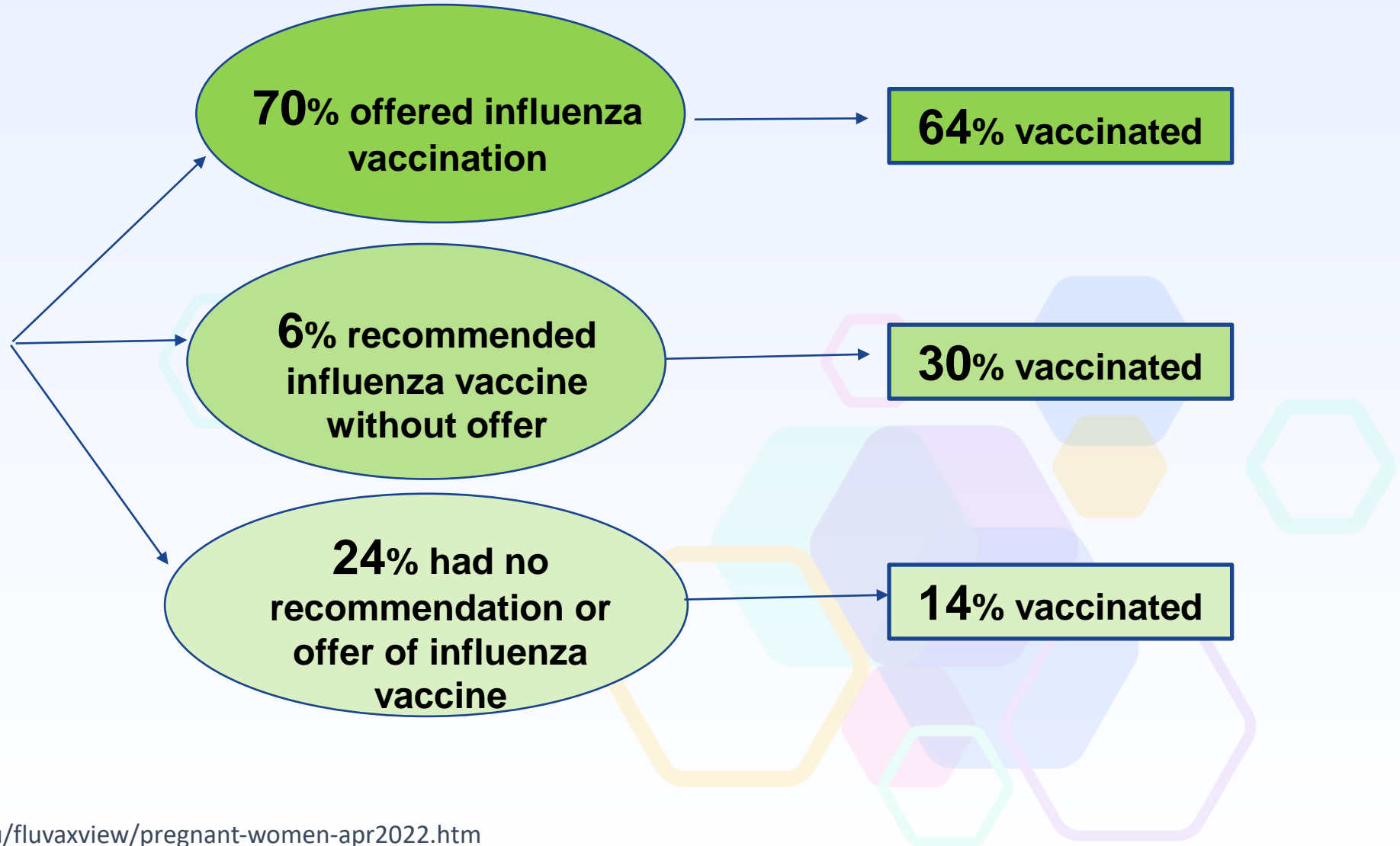
BAA = Black/African American.

Source: San Francisco Health Network Electronic Health Record

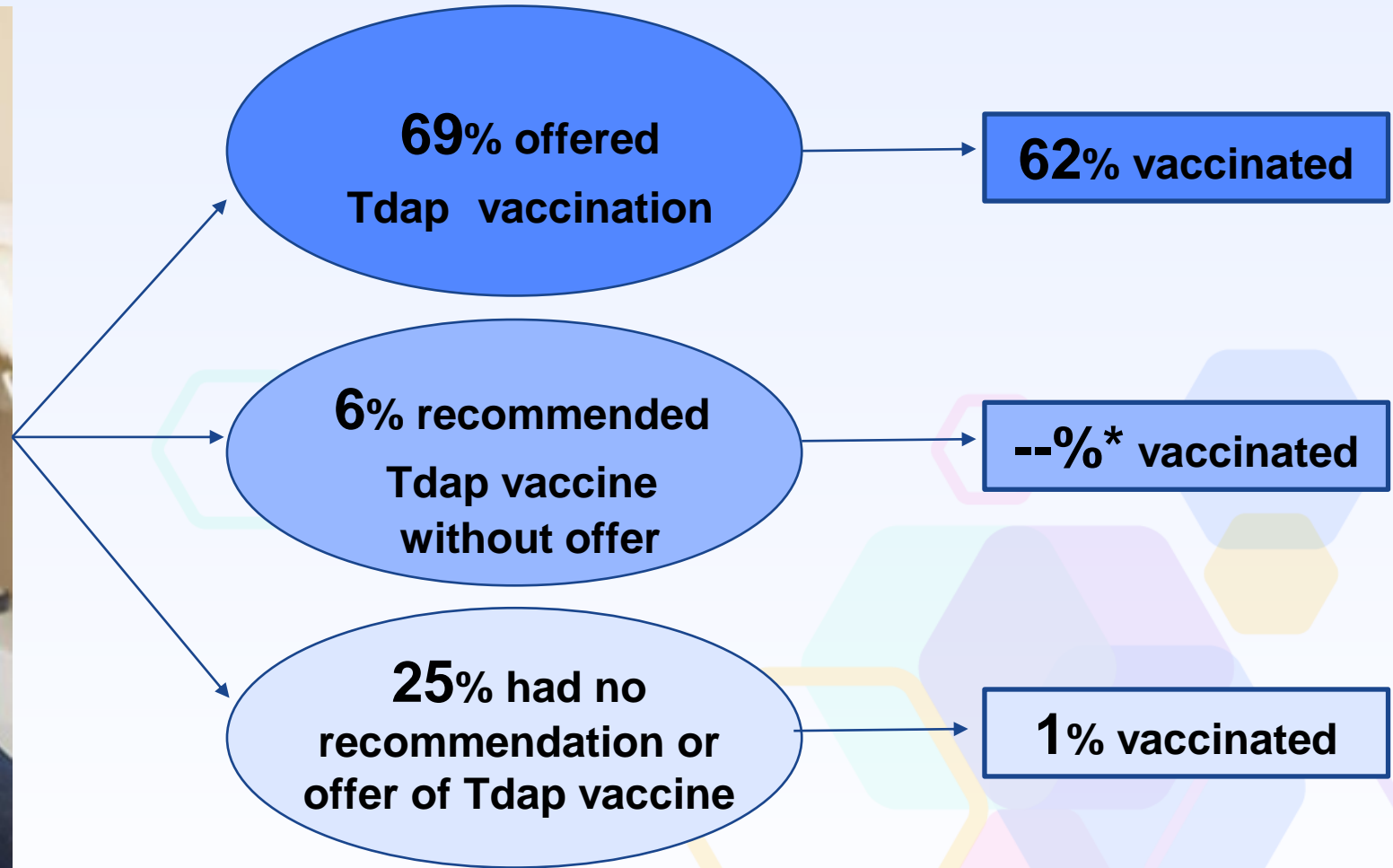
NEJM Catalyst (catalyst.nejm.org) © Massachusetts Medical Society

**Source:** Gregory B et al. System Interventions to Reduce Disparities in Covid-19 Vaccine Offer Rates. NEJM Catal Innov Care Deliv 2022;3(7). DOI: 10.1056/CAT.22.0093

# Influenza vaccination in pregnant women by provider offer or recommendation for vaccine, United States, 2021-2022



# Tdap Vaccination in Pregnant Women by Provider Offer or Recommendation for Vaccine, United States, 2021-2022



\*A stable coverage estimate could not be calculated for those with a provider recommendation for Tdap but no offer or referral due to small numbers.

Source: <https://www.cdc.gov/flu/fluview/pregnant-women-apr2022.htm>



# Barriers to Vaccination During Pregnancy

## ■ Safety Concerns

- Participating HCPs reported the most common vaccination safety concerns expressed by their pregnant patients related to questions about potential risk or harm for the unborn baby
- Several pregnant participants also expressed concerns about unknown long-term side effects of vaccines they perceived to be new (e.g., COVID-19)
- Many pregnant participants expressed hesitancy about receiving any vaccinations during the first trimester due to concerns about fever and miscarriage
- Other concerns related to potential side effects of vaccination, which some felt would be more intense during pregnancy

## ■ Access Concerns

- Transportation issues were a barrier to regular prenatal care for some pregnant participants, especially among participants with lower household incomes and rural patients
- Many participants faced provider staffing issues and a lack of regularly available prenatal care appointments

*Note that these recommendations come from formative qualitative research with pregnant people and prenatal health care providers. Data was obtained through focus groups with pregnant people and in-depth interviews with HCPs. Therefore, these recommendations represent a specific subset of the overall population of pregnant people and prenatal HCPs.*

# Language

- Many participants felt a conversational tone makes vaccination materials approachable
- In written materials, avoid gendered pronouns for babies to broaden vaccination appeals
- Be mindful of implied judgments of not taking recommended vaccination action (e.g., describing vaccination as an expression of love)
- Walk the line of attention-grabbing vs. perceived scare tactics (e.g., “hospitalization,” “deadly,” “critical”)

*Note that these recommendations come from formative qualitative research with pregnant people and prenatal health care providers. Data was obtained through focus groups with pregnant people and in-depth interviews with HCPs. Therefore, these recommendations represent a specific subset of the overall population of pregnant people and prenatal HCPs.*

# Format

- Many participants expressed broad appreciation of vaccination materials that utilized a Q & A format written from the perspective of a pregnant person
- Ensure written vaccination materials are not too long (2 pages maximum)
- Provide links with additional information on safety, risk factors, and immunization schedules
- Make resources easily sharable via text and social media

*Note that these recommendations come from formative qualitative research with pregnant people and prenatal health care providers. Data was obtained through focus groups with pregnant people and in-depth interviews with HCPs. Therefore, these recommendations represent a specific subset of the overall population of pregnant people and prenatal HCPs.*

# Visuals

- Use diverse images that include postpartum pregnant people, single pregnant people, couples, other support persons, and different stages of pregnancy
- Use of color can draw attention
- Some participants disliked illustrations and preferred real-life images
- Presence of logos from health-related organizations increased the perceived credibility of vaccination information for several participants

*Note that these recommendations come from formative qualitative research with pregnant people and prenatal health care providers. Data was obtained through focus groups with pregnant people and in-depth interviews with HCPs. Therefore, these recommendations represent a specific subset of the overall population of pregnant people and prenatal HCPs.*

# Content

- Address severity, transmission, and symptoms of each vaccine-preventable disease for pregnant people
- Include information regarding when to receive vaccines
- Topics of interest expressed by pregnant participants included: breastfeeding antibody benefits, fertility concerns, and safety of the vaccine for baby
- Include information about why vaccination is recommended, not solely relying on directives

*Note that these recommendations come from formative qualitative research with pregnant people and prenatal health care providers. Data was obtained through focus groups with pregnant people and in-depth interviews with HCPs. Therefore, these recommendations represent a specific subset of the overall population of pregnant people and prenatal HCPs.*

# Messages that Have Tested Well

- The most popular tested messages for prenatal vaccination focused on how vaccines protect the baby. These messages were well balanced in length and information, did not appear to be fear mongering to participants, and included a call to action to speak with a trusted HCP.
  - Protect yourself and your baby. Talk to a trusted healthcare professional about getting flu and whooping cough vaccines during pregnancy.
    - › Participants liked that this posed an option and put the decision in the pregnant person's hands.
    - › The message was described as easy to read and straight to the point, without invoking fear.
  - Whooping cough is a serious disease that can be deadly for babies. Getting a Tdap vaccine during pregnancy gives babies protection against whooping cough before they're even born.
    - › “I think compared to all the others it's just about the baby, it's not about the pregnant person or the mom...so it gives me a straightforward answer as far as the importance of it for the baby.” Black/AA, 1st Pregnancy

*Note that these messages were tested among participants in focus groups and are therefore representative of a specific subset of the overall population of pregnant people.*

# Practical Tips

- Recommend AND offer vaccines to maximize potential vaccination opportunities
  - Engage nurses and other practice staff involved in the prenatal care continuum.
- Provide vaccine information during preconception appointments and early in pregnancy to allow patients time to digest information and prepare questions between appointments
  - Participating HCPs reported they rarely begin discussing the Tdap vaccine in detail until just before the recommended time period for receiving the vaccine.
  - However, several pregnant participants preferred to cross-reference information across multiple sources and then fact check information with their prenatal care provider at appointments or through their practice's contact portal.
- Emphasize how vaccines during pregnancy offer protection to baby
  - Pregnant participants described protection for the baby as a strong vaccination motivator.
  - However, many participants were not aware that flu vaccination provides protection to the unborn baby.
  - Several participating HCPs also reported that some patients do not realize that Tdap is recommended for each pregnancy, so immunity can be passed to the baby.

*Note that these recommendations come from formative qualitative research with pregnant people and prenatal health care providers. Data was obtained through focus groups with pregnant people and in-depth interviews with HCPs. Therefore, these recommendations represent a specific subset of the overall population of pregnant people and prenatal HCPs.*

# Thank you

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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**ACOG**

The American College of  
Obstetricians and Gynecologists

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# Clinical Vaccination Guidance for Pregnant People

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# Rationale for Vaccination during Pregnancy (1/5)

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Pregnancy is associated with an *increased risk* of infection-related morbidity, mortality, and adverse pregnancy outcomes

# Rationale for Vaccination during Pregnancy (2/5)

---



Early infancy is characterized by  
“Gap Immunity”

# Rationale for Vaccination during Pregnancy (3/5)

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Vaccine induced immunity protects both the birthing person and the infant

# Rationale for Vaccination during Pregnancy (4/5)

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Vaccination during pregnancy promotes  
life-long health and well-being

# Rationale for Vaccination during Pregnancy (5/5)

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Equitable vaccination achieves parity in maternal and infant outcomes

# Obstetric care providers play a key role in improving vaccine uptake during pregnancy

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- **Engage in vaccine counseling early and frequently**
  - Leverage frequency of prenatal care to elicit concerns and provide guidance
- **Provide strong recommendations for vaccines during pregnancy**
  - Patients who receive recommendations for vaccines from their obstetric provider are more likely to receive vaccines
- **Affirm long-term maternal and infant health benefits**
  - Emphasize the role of vaccines towards long term maternal and infant health outcomes and as an equitable strategy to decrease disparities in infectious disease morbidity

# Vaccines Routinely Recommended During Pregnancy

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1. COVID-19 mRNA vaccines
2. Inactivated Influenza vaccine
3. Tdap vaccine
4. Hepatitis B\*





# Recommendations for COVID-19 Vaccination during Pregnancy

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- COVID-19 vaccination is recommended for all unvaccinated pregnant persons
  - At least one bivalent mRNA vaccine with either Moderna or Pfizer-BioNTech is recommended
  - An additional dose may be offered for those who are moderately or severely immunocompromised
  - Novavax COVID-19 monovalent vaccine may also be used for those unable or unwilling to receive mRNA vaccine

# Recommendations for Pertussis Vaccination during Pregnancy

---

- Tdap vaccination should be administered between 27 – 36.6 weeks in each pregnancy
  - Can be offered *prior to 26 weeks* if local outbreak or for exposure prophylaxis
  - Can be offered postpartum if never received as an adult

# Recommendations for Influenza Vaccination during Pregnancy

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- Inactivated quadrivalent or recombinant influenza vaccination should be administered annually during flu season
  - Timing is irrespective of trimester in pregnancy and should not be delayed to the third trimester

# Recommendations for Hepatitis B Vaccination during Pregnancy

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- Hepatitis B vaccination is recommended for all unvaccinated pregnant persons
  - Prevacination testing (testing for HBsAg, antibody to HBsAg (anti-HBs), and antibody to hepatitis B core antigen (anti-HBc) can be performed during initial prenatal labs
  - Vaccination consists of three intramuscular injections administered 1 and 6 months after the first dose
  - Vaccination can be administered irrespective of trimester in pregnancy

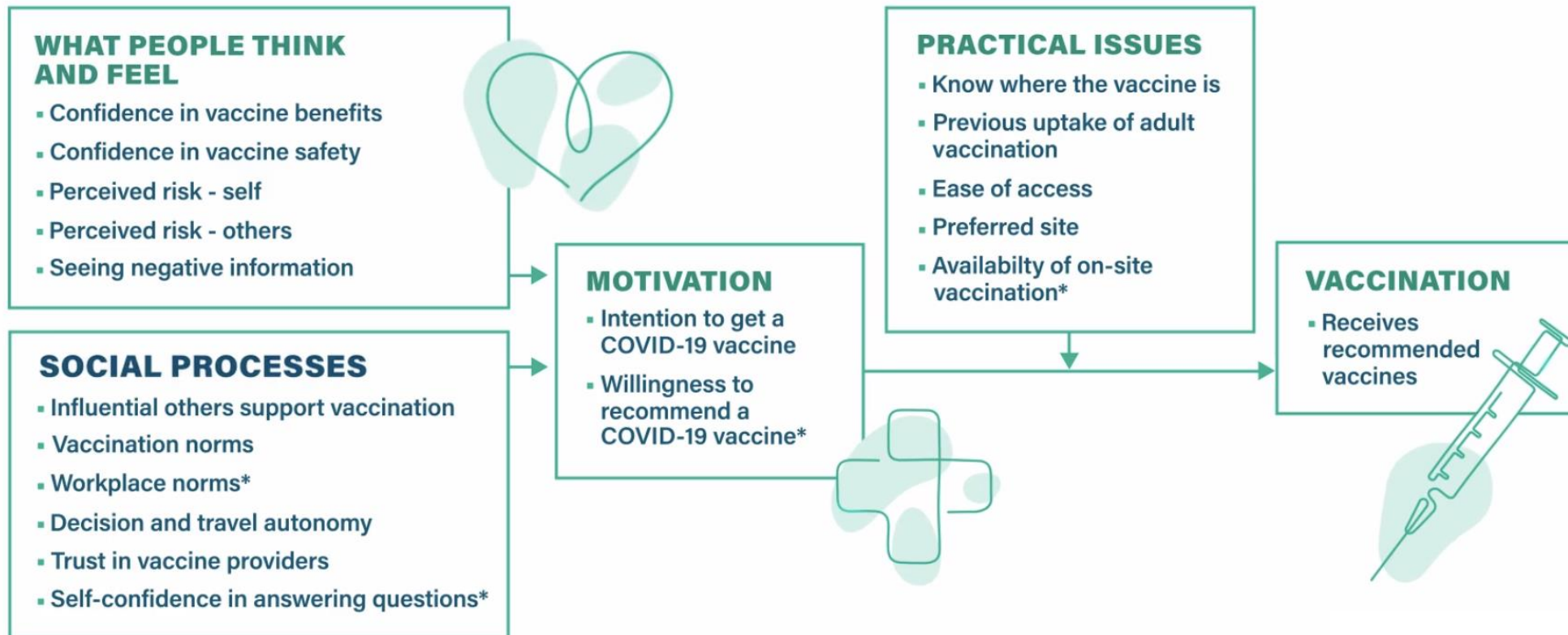
# Vaccines can still be offered in the following scenarios:

---

- Presence of low-grade fever
- History of non-severe immunization reaction
- History of allergy to egg/neomycin/streptomycin
- History of Guillain-Barre Syndrome following a vaccine (precaution if within 6 weeks of prior influenza vaccination)
- Multiple simultaneous vaccinations

# Drivers Associated with Vaccination

## THE BeSD OF VACCINATION FRAMEWORK



\*Relevant to health care workers

# Pregnancy Specific Barriers to Vaccination

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1. Risk of exposure to the disease
2. Whether an infection poses special risk to the mother
3. Whether an infection poses a special risk to the fetus
4. Research on vaccine safety and efficacy in pregnancy

# Pregnancy Specific Barriers to Vaccination cont.

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5. Support from partner, family, community
6. Access to vaccination
7. Trust in medical systems



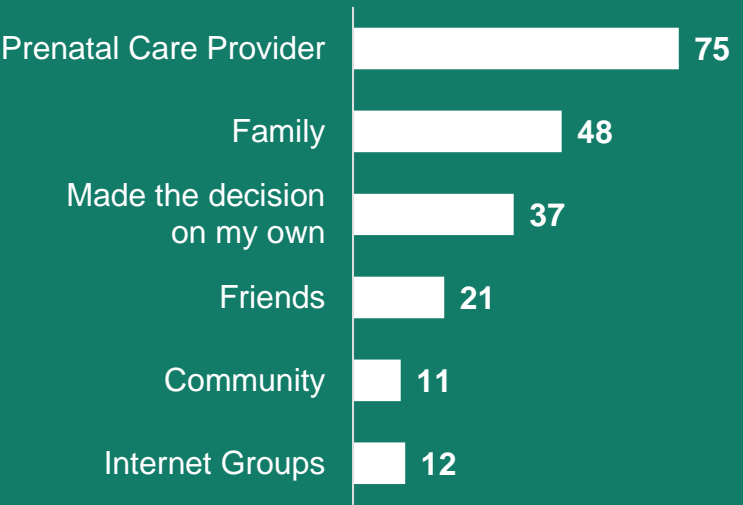


# Prenatal care providers emerge as the most trusted source for vaccine information

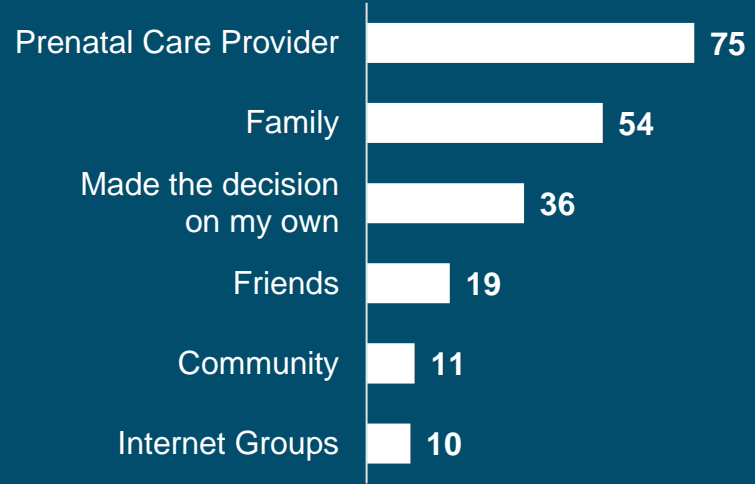
75% of respondents stated their prenatal care provider was the most important source of vaccine information

For each of the following vaccines, who did you discuss your decision with? n=900

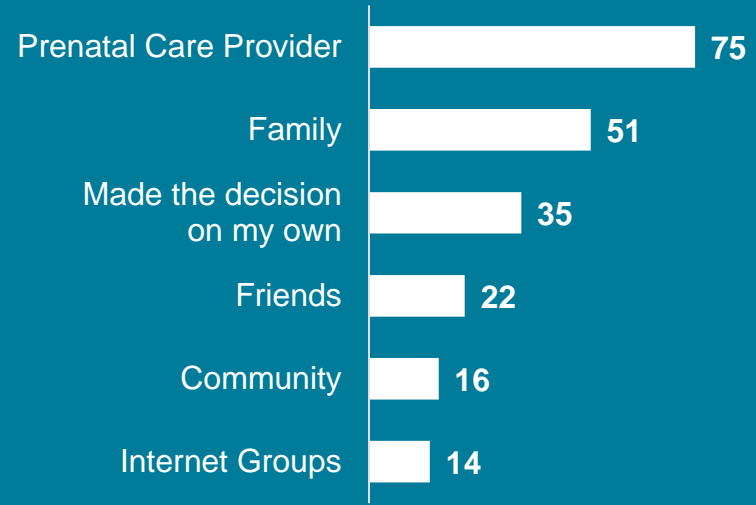
**Discussion Partners: Tdap**  
(Percent %)



**Discussion Partners: Flu**  
(Percent %)



**Discussion Partners: COVID-19**  
(Percent %)



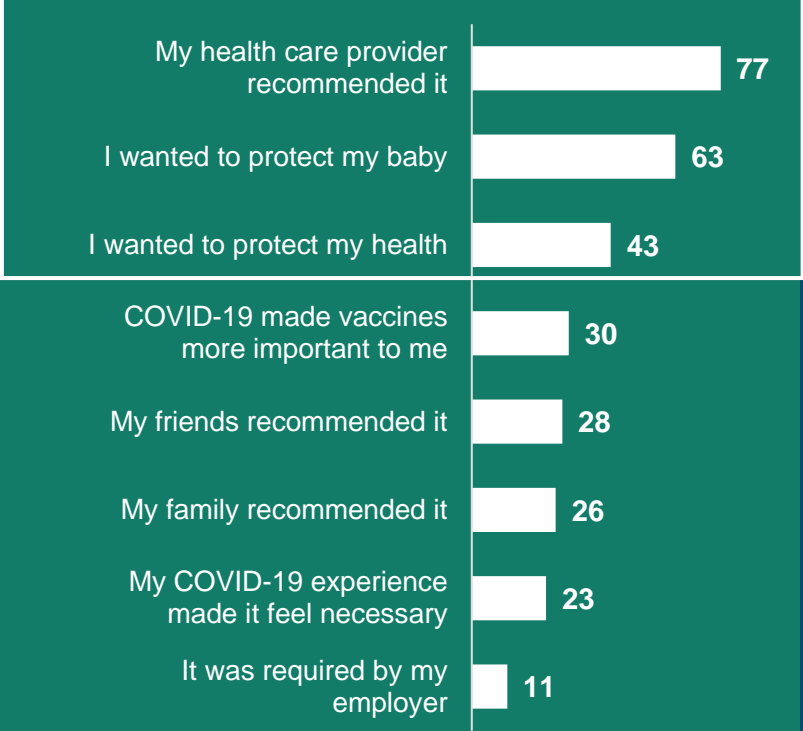
# Health care providers' recommendations and a desire to protect the baby's health drive vaccine decisions

Please rank the top 3 reasons for getting a flu/Tdap/COVID-19 vaccine during pregnancy. Tdap n=274; Flu n=167; COVID-19 n=101

## Top Reasons for Getting Tdap Vaccine

(Percent Ranked Top 3)

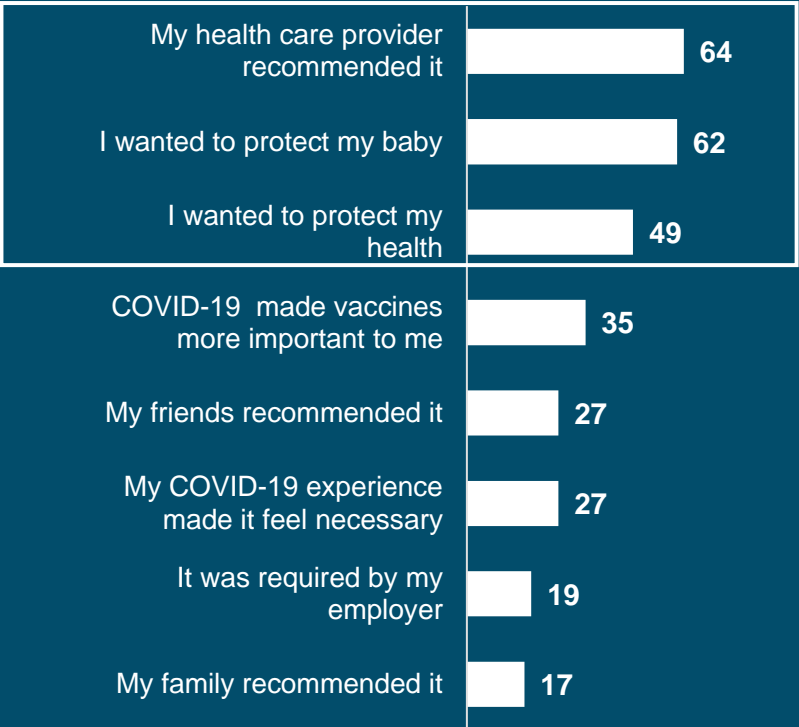
Sub-sample who received Tdap vaccine before or during pregnancy



## Top Reasons for Getting Flu Vaccine

(Percent Ranked Top 3)

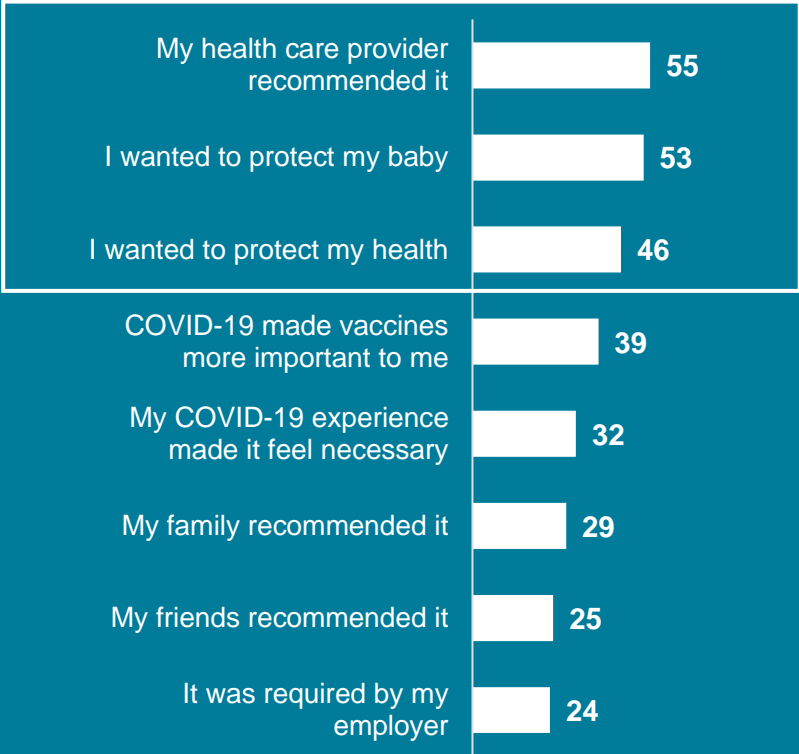
Sub-sample who received flu vaccine before or during pregnancy



## Top Reasons for Getting COVID-19 Vaccine

(Percent Ranked Top 3)

Sub-sample who received COVID-19 vaccine before or during pregnancy



## Self-knowledge Check #2

---

When counseling pregnant patients regarding vaccination, what is the most likely to impact the decision to get vaccinated?

- A. The patients racial or ethnic background
- B. The proximity of vaccine site to providers office
- C. Obstetric care providers recommendation
- D. Cost

## Self-knowledge Check #2 (answer)

---

The correct answer is **C**.

Data show that prenatal care providers are the most trusted source for vaccine information, and a health care provider recommendation is most likely to impact a patient's decision to be vaccinated.

# Pregnancy Specific Facilitators to Vaccination

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1. Clinician recommendation
2. Confidence in vaccine safety and effectiveness
3. High perceived risk of infection
4. High perceived severity of infection
5. Perceived benefits of vaccination
6. Access to vaccination sites



# Engaging with Patients Regarding Vaccination

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1. Address factors *across* the Framework
2. Individualize your approach
3. Actively listen to and validate concerns
4. Address misinformation
5. Address pregnancy specific data regarding safety and efficacy
6. Remain knowledgeable regarding vaccine access

# The SHARE Approach

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# Summary of Maternal Immunization Recommendations

Highlights key recommendations regarding vaccines for pregnant individuals

## Summary of Maternal Immunization Recommendations

Vaccines help keep your pregnant patients and their growing families healthy.

VACCINE*	INDICATED DURING EVERY PREGNANCY	MAY BE GIVEN DURING PREGNANCY IN CERTAIN POPULATIONS	CONTRAINDICATED DURING PREGNANCY	CAN BE INITIATED POSTPARTUM OR WHEN BREASTFEEDING OR BOTH
COVID-19 <sup>1</sup> (see footnote for recommendations)				
Inactivated influenza	X <sup>1,2,3</sup>			X <sup>3</sup>
Tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap)	X <sup>1,4,5</sup>			X <sup>3</sup>
Pneumococcal vaccines		X <sup>1,6</sup>		X <sup>1,6</sup>
Meningococcal conjugate (MenACWY) and meningococcal serogroup B		X <sup>6,7</sup>		X <sup>6,7</sup>
Hepatitis A		X <sup>8,9</sup>		X <sup>8,9</sup>
Hepatitis B		X <sup>10,10D</sup>		X <sup>10,10D</sup>
Human papillomavirus (HPV)**				X <sup>11,11D</sup>
Measles-mumps-rubella			X <sup>12,12,4</sup>	X <sup>12</sup>
Varicella			X <sup>13,13,13D</sup>	X <sup>13</sup>

\*An "X" indicates that the vaccine can be given in this window. See the corresponding numbered footnote for details.



# Patient Education Videos

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Four patient videos focused on communicating the importance of:

- Getting your recommended vaccines during pregnancy
- Getting your recommended Tdap vaccine during pregnancy
- Getting your recommended flu vaccine during pregnancy
- Getting your recommended COVID-19 vaccine during pregnancy

Get Your Recommended Vaccines During Pregnancy



# Vaccines During Pregnancy Infographic

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Patient-facing resource highlighting key points regarding flu, Tdap, and COVID-19 vaccination during pregnancy.

## Vaccines During Pregnancy

**Vaccines are recommended during pregnancy to protect against three serious illnesses: the flu, whooping cough, and COVID-19.**

**These vaccines can keep you healthy and help protect your baby after birth.**



# Inform To Empower: ACOG COVID-19 Vaccine Confidence Training

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Introducing the ACOG Immunization Team's newest training initiative! *Inform to Empower: Building COVID-19 Vaccine Confidence One Conversation at a Time* is a series of [six training videos](#) totaling 90-minutes and consisting of tools and resources to assist clinicians in promoting vaccine confidence among pregnant people.

Each module includes a toolkit with resources for patients, including printable handouts.

Price: Free

Credit: *1.5 AMA PRA Category 1 Credits*

Module 1: [Introduction to ACOG's COVID-19 Vaccine Confidence Training](#)

Module 2: [COVID-19 Landscape: Data and Recommendations](#)

Module 3: [Confident Conversations: Exploring Evidence-Based Strategies](#)

Module 4: [Confident Conversations: Leading Effective Vaccine Conversations](#)

Module 5: [Confident Conversations: Addressing COVID-19 Vaccine Misinformation](#)

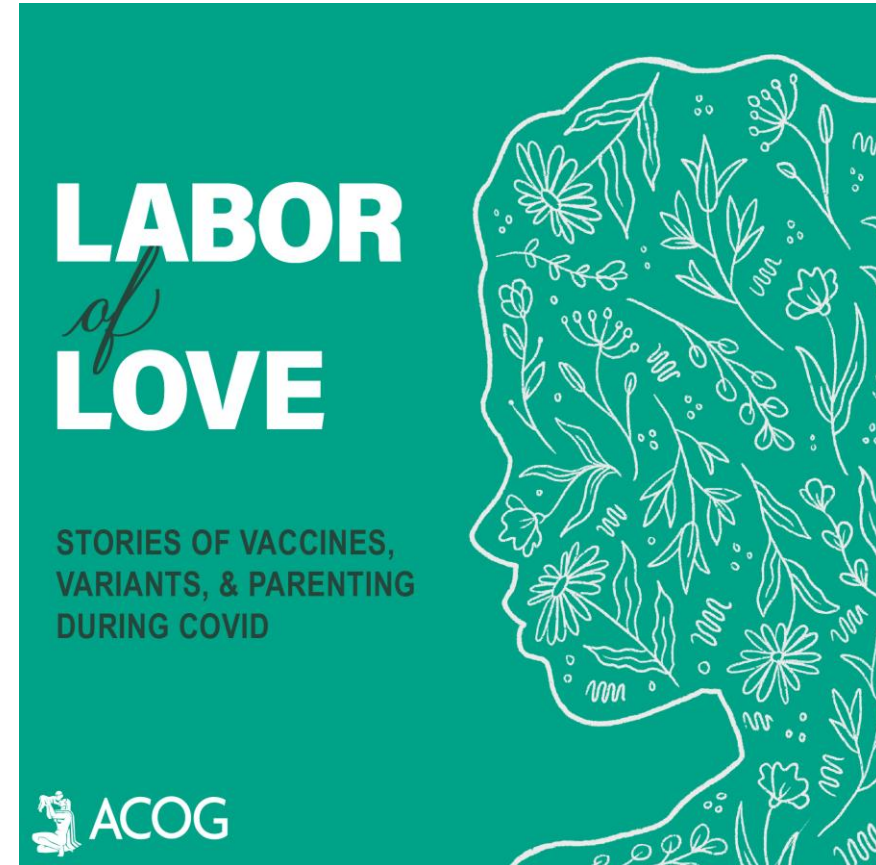
Module 6: [Confident Conversations: Leading by Example](#)

# Labor of Love: Stories of Vaccines, Variants, and Parenting During COVID

Check out ACOG's new podcast, [Labor of Love: Stories of Vaccines, Variants, and Parenting during COVID](#). This season of Labor of Love is a five-part series where each week, Veronica Pimentel, MD, MS, FACOG, speaks with women dealing with everything that accompanies motherhood and pregnancy in the time of COVID-19. Dr. Pimentel also speaks with medical experts in the fields of maternal health, fertility, and mental well-being who provide evidence-based information and recommendations on how best to navigate pregnancy and motherhood during COVID-19.

[Check out the trailer](#) for Labor of Love and find more information about the podcast.

All episodes are now available on your favorite podcast streaming outlet! [Listen](#) and subscribe today!



# COVID-19 Vaccines: Tools for Your Practice and Your Patients

COVID-19 Vaccines: Tools for Your Practice and Your Patients is a new tool kit from ACOG compiling all of our COVID-19 resources in a 1-stop shop.

It also includes several new resources including a template letter to patients about COVID-19 vaccines, and a “how to guide” for ACOG members outlining the process for becoming a COVID-19 vaccinator.



## COVID-19 Vaccines: Tools for Your Practice and Your Patients

Share [Twitter](#) [Facebook](#) [LinkedIn](#) [Email](#) | [Print](#)

### COVID-19

ACOG Tool Kit on Routine Visits and Screenings During the Pandemic

COVID-19 Vaccines: Tools for Your Practice and Your Patients

A Note to Send to Your Patients



More than 80% of people say that they would turn to their doctor or to another health care professional who cares for them to actually make a decision about whether or not they should get a vaccine.”

— Vice Admiral Vivek H. Murthy, MD, MPH, U.S. Surgeon General, 2021 ACOG Annual Clinical and Scientific Meeting

Obstetrician–gynecologists have the unique responsibility of counseling their patients, including people who are pregnant and lactating, through their COVID-19 vaccination decisions. This guide can help you:

- Communicate with your patients about the COVID-19 vaccination in ways that make them more likely to get vaccinated
- Learn about becoming a COVID-19 immunization administrator or vaccinator, which follows a different process than other immunizations
- Start thinking about COVID-19 vaccination as a potentially long-term element of clinical practice

Tools for Your Patients

# ACOG Practice Advisory

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## Comprehensive clinical guidance regarding COVID-19 Vaccination

- FDA & ACIP recommendations
- Efficacy & safety information
- ACOG recommendations



### COVID-19 Vaccination Considerations for Obstetric–Gynecologic Care

Practice Advisory ⓘ | December 2020

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*Last updated November 16, 2022*

This Practice Advisory was developed by the American College of Obstetricians and Gynecologists' Immunization, Infectious Disease, and Public Health Preparedness Expert Work Group in collaboration with Laura E. Riley, MD; Richard Beigi, MD; Denise J. Jamieson, MD, MPH; Brenna L. Hughes, MD, MSc; Geeta Swamy, MD; Linda O'Neal Eckert, MD; Mark Turrentine, MD; and Sarah Carroll, MPH.

#### Summary of Updates

This Practice Advisory provides an overview of the currently available COVID-19 vaccines and guidance for their use in pregnant, recently pregnant, lactating, and nonpregnant individuals aged 12 years and older. For guidance and recommendations for the use of these vaccines in individuals aged 11 years or younger, please visit the website of the American Academy of Pediatrics. For additional information regarding severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and treatment, see ACOG's [Frequently Asked Questions](#).

# Patient Education Resources

COVID-19 resources on ACOG's Patient Education Portal include:

➤ [Expert columns](#)

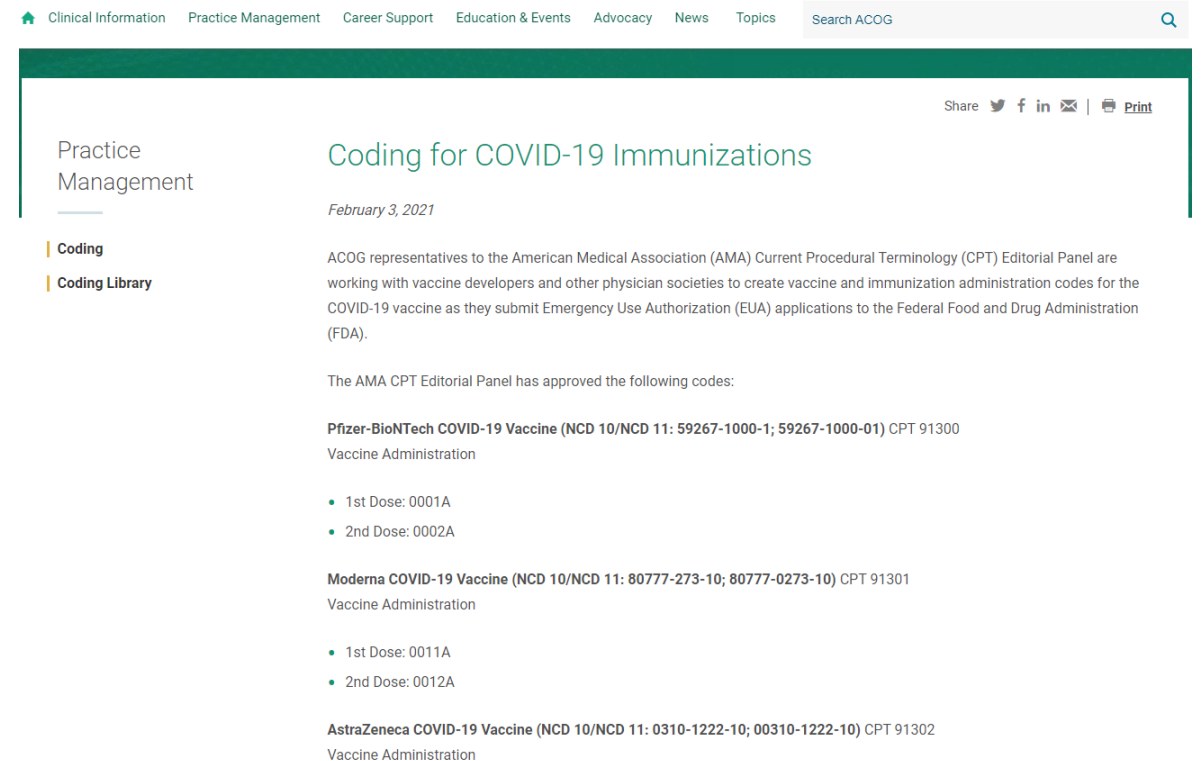
➤ [Frequently Asked Questions](#)

The screenshot shows a webpage titled "Coronavirus (COVID-19), Pregnancy, and Breastfeeding: A Message for Patients". At the top right, there is a "FAQs" button. Below the title, there are social media sharing icons (Share, Facebook, Twitter, Email, Print) and a "Print" button. A reviewer's information is displayed: "Reviewed by: Lisa Holler, MD, MPH, FACOG, Baylor College of Medicine, Houston, Texas" and "Last updated: December 22, 2020 at 6:25 p.m. ET". Below this, there are language options: "Spanish | Simplified Chinese | Arabic". A disclaimer states: "Experts are learning more every day about the new coronavirus that causes COVID-19. The American College of Obstetricians and Gynecologists (ACOG) is following the situation closely. This page will be updated as ACOG learns new information for pregnant and breastfeeding women." A note follows: "Please note that while this is a page for patients, this page is not meant to give specific medical advice and is for informational reference only. Medical advice should be provided by your doctor or other health care professional." At the bottom, it says "Ob-gyns: Please refer to [acog.org/covid19](https://acog.org/covid19) for ACOG's latest updates on COVID-19." There are two buttons at the bottom: "Expand All" and "Pamphlets". On the right side, there is a purple box with the text "Clinicians: Subscribe to Digital Pamphlets" and "Explore ACOG's library of patient education pamphlets." Below that is an "Advertisement" section with a blue box containing the text "Questions about COVID-19, pregnancy, and breastfeeding?".

# Coding for COVID-19 Immunizations

## Coding for COVID-19 Immunizations

Practice management resource outlining coding specifics for COVID-19 vaccines



The screenshot shows the ACOG website interface. At the top, there is a navigation menu with links for Clinical Information, Practice Management, Career Support, Education & Events, Advocacy, News, and Topics. A search bar labeled 'Search ACOG' is on the right. Below the navigation is a dark green header bar with social media share icons (Twitter, Facebook, LinkedIn, Email) and a 'Print' button. The main content area has a left sidebar with 'Practice Management' and 'Coding Library' (highlighted with a vertical bar). The article title 'Coding for COVID-19 Immunizations' is displayed in green, with a date of 'February 3, 2021'. The text states that ACOG representatives to the AMA CPT Editorial Panel are working with vaccine developers to create codes for COVID-19 vaccines. It lists approved codes for Pfizer-BioNTech, Moderna, and AstraZeneca vaccines, including their NCD/NCD 11 numbers and CPT 91300 Vaccine Administration codes. For each vaccine, it lists '1st Dose' and '2nd Dose' codes.

Clinical Information Practice Management Career Support Education & Events Advocacy News Topics Search ACOG

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Practice Management

**Coding**

**Coding Library**

### Coding for COVID-19 Immunizations

February 3, 2021

ACOG representatives to the American Medical Association (AMA) Current Procedural Terminology (CPT) Editorial Panel are working with vaccine developers and other physician societies to create vaccine and immunization administration codes for the COVID-19 vaccine as they submit Emergency Use Authorization (EUA) applications to the Federal Food and Drug Administration (FDA).

The AMA CPT Editorial Panel has approved the following codes:

**Pfizer-BioNTech COVID-19 Vaccine (NCD 10/NCD 11: 59267-1000-1; 59267-1000-01) CPT 91300**  
Vaccine Administration

- 1st Dose: 0001A
- 2nd Dose: 0002A

**Moderna COVID-19 Vaccine (NCD 10/NCD 11: 80777-273-10; 80777-0273-10) CPT 91301**  
Vaccine Administration

- 1st Dose: 0011A
- 2nd Dose: 0012A

**AstraZeneca COVID-19 Vaccine (NCD 10/NCD 11: 0310-1222-10; 00310-1222-10) CPT 91302**  
Vaccine Administration



# Questions?

# Joining the Q&A Session

## **Lakshmi Panagiotakopoulos, MD, MPH**

Medical Officer  
Clinical Interventions Team, Prevention Branch  
Division of Viral Hepatitis  
National Center for HIV, Viral Hepatitis, STD, and TB Prevention  
Centers for Disease Control and Prevention

## **Tami Skoff, MPH**

Senior Pertussis Epidemiologist  
Division of Bacterial Diseases  
National Center for Immunization and Respiratory Diseases  
Centers for Disease Control and Prevention

## **Fatimah Dawood, MD, FAAP**

Pediatrician and Medical Officer, Influenza Prevention and Control Team  
Influenza Division  
National Center for Immunization and Respiratory Diseases  
Centers for Disease Control and Prevention

## **Katherine E. Fleming-Dutra, MD**

Team Lead, Vaccine Effectiveness and Policy Team  
Surveillance and Prevention Branch  
Coronavirus and Other Respiratory Viruses Division  
National Center for Immunization and Respiratory Diseases  
Centers for Disease Control and Prevention

## **Hilda Razzaghi, PhD, MSPH**

LCDR, U.S. Public Health Service  
Senior Epidemiologist, COVID-19 Vaccine Data lead, Acting  
Associate Director for Science  
Immunization Services Division  
National Center for Immunizations and Respiratory Diseases  
Centers for Disease Control and Prevention

## **Pedro L. Moro, MD, MPH**

Acting Team Lead, VAERS Project and Response Team  
Vaccine Safety Subject Matter Expert, Immunization Safety Office  
Division Of Healthcare Quality Promotion  
National Center for Emerging and Zoonotic Infectious Diseases  
Centers for Disease Control and Prevention

## **Christine Olson MD, MPH**

CAPT, United States Public Health Service  
Co-lead, CDC COVID-19 Vaccine Pregnancy Registry  
Medical Officer, Immunization Safety Office  
Division Of Healthcare Quality Promotion  
National Center for Emerging and Zoonotic Infectious Diseases  
Centers for Disease Control and Prevention

# To Ask a Question

- Using the Zoom Webinar System
  - Click on the “Q&A” button
  - Type your question in the “Q&A” box
  - Submit your question
- If you are a patient, please refer your question to your healthcare provider.
- If you are a member of the media, please direct your questions to CDC Media Relations at 404-639-3286 or email [media@cdc.gov](mailto:media@cdc.gov).

# Continuing Education

- All continuing education for COCA Calls is issued online through the CDC Training & Continuing Education Online system at <https://tceols.cdc.gov/>.
- Those who participate in today's COCA Call and wish to receive continuing education please complete the online evaluation by **Monday, September 11, 2023**, with the course code **WC4520-081023**. The access code is **COCA081023**.
- Those who will participate in the on-demand activity and wish to receive continuing education should complete the online evaluation between **September 12, 2023**, and **September 12, 2025**, and use course code **WD4520-081023**. The access code is **COCA081023**.
- Continuing education certificates can be printed immediately upon completion of your online evaluation. A cumulative transcript of all CDC/ATSDR CEs obtained through the CDC Training & Continuing Education Online System will be maintained for each user.

# Today's COCA Call Will Be Available to View On-Demand

- **When:** A few hours after the live call ends\*
- **What:** Video recording
- **Where:** On the COCA Call webpage  
[https://emergency.cdc.gov/coca/calls/2023/callinfo\\_081023.asp](https://emergency.cdc.gov/coca/calls/2023/callinfo_081023.asp)

*\*A transcript and closed-captioned video will be available shortly after the original video recording posts at the above link.*

# Upcoming COCA Calls & Additional Resources

- Join us for our next COCA Call, Thursday, August 17 at 2 PM ET.  
Topic: [We Must Maintain Measles Elimination in the United States: Measles Clinical Presentation, Diagnosis, and Prevention](#)
- Continue to visit <https://emergency.cdc.gov/coca/> to get more details about upcoming COCA Calls.
- Subscribe to receive notifications about upcoming COCA calls and other COCA products and services at [emergency.cdc.gov/coca/subscribe.asp](https://emergency.cdc.gov/coca/subscribe.asp).

# Thank you for joining us today!



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