National Center for Immunization & Respiratory Diseases

Maternal Vaccination Update

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Internet Panel Survey Methods

- **Opt-in Internet panel survey conducted March 26 to April 11, 2024, among women ages 18–49 who were pregnant since August 1, 2023**
- **Study populations:**
  - **Influenza:** Women pregnant during the peak influenza vaccination period (October 2023 – January 2024) (n=1,783).
  - **Tdap:** Women pregnant any time since August 1, 2023, who had a live birth by their survey date, and knew their Tdap vaccination status (n=788).
  - **Updated COVID-19:** Women who became pregnant on or after October 1, 2023, atter the updated 2023–2024 COVID-19 vaccine became available in September 2023 (n=2,005).
  - **Maternal RSV:** Women who were 32–36 gestation week's pregnant anytime during September 1 through January 31, 2024 (n=678).
  - **Infant protection from RSV:** Women who had a live birth during August 1, 2023–March 31, 2024 (n=866).

Internet Panel Survey Methods (2)

- **Measures of vaccination coverage:**
  - **Influenza:** Received influenza vaccine *before or during* most recent pregnancy, since July 1, 2023.
  - **Tdap:** Received Tdap vaccine *during* most recent pregnancy.
  - **Updated COVID-19:** Received updated COVID-19 vaccine *before or during* most recent pregnancy.
  - **Maternal RSV:** Received RSV vaccine anytime during pregnancy.
  - **Infant protection from RSV:** Woman received RSV vaccine anytime during pregnancy or reported that her infant received nirsevimab.
- **Sampled women were weighted to represent the national population of pregnant women**

Vaccine Safety Datalink (VSD) Methods

- **Used for in-season monitoring of vaccination coverage among pregnant women**
- **Collaboration between CDC's Immunization Safety Office and 10 integrated health care organizations**
- **Vaccination status based on electronic healthcare records among people enrolled at participating VSD sites**
- **Influenza vaccination**
  - Denominator: women with a pregnancy during the current influenza season (defined as August through March) beginning before or during the specified week.
  - Numerator: those who received a flu vaccine since July 1 of the respective flu season before or during pregnancy as of the specified week ending date

Vaccine Safety Datalink Methods (2)

- **COVID-19 vaccination**
  - Denominator: women with a pregnancy during the respective season* beginning before or during the specified week
  - Numerator: those who received a COVID-19 vaccine after the vaccine was available for the respective season before or during pregnancy as of the specified week ending date.
- **RSV vaccination**
  - Denominator: pregnant women who reached at least 32 weeks' gestation since September 1, 2024
  - Numerator: those who have received an RSV vaccine during pregnancy as of the week ending date

* For the 2023–24 season the denominator included women who were pregnant as of September 26, 2023. For the 2024–25 season the denominator includes women who were pregnant as of September 5, 2024. These dates are approximately two weeks after COVID-19 vaccines were approved each season.

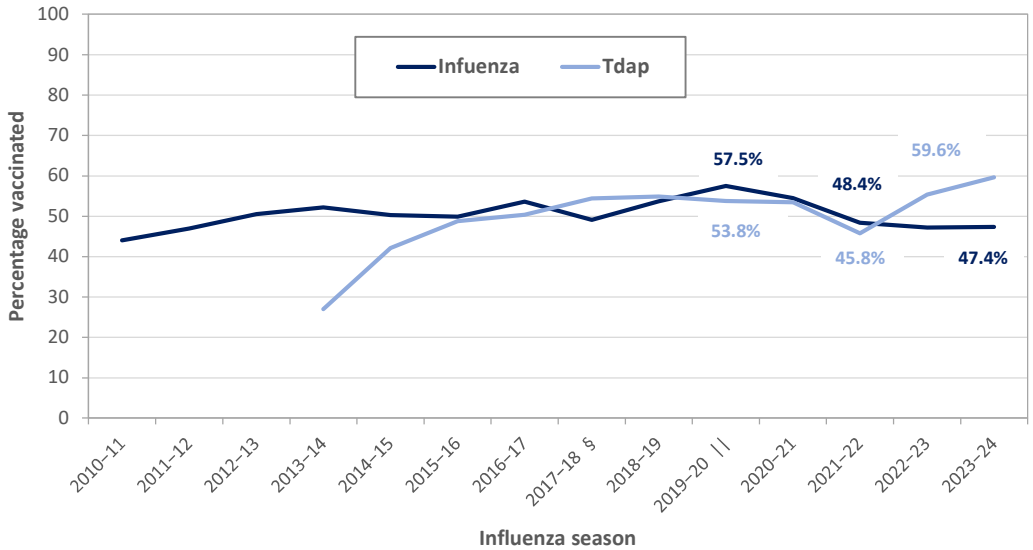
National Immunization Survey-Adult COVID Module (NIS-ACM) Methods

- **Used for in-season monitoring of infant protection from RSV**
- **Random-digit-dial cellular telephone survey of adults age ≥18 years in the U.S.**
- **Women 18–49 years with a baby born since April 1, 2024, were asked about receipt of RSV vaccine during pregnancy and if their baby received nirsevimab**
- **Data are weighted to represent the non-institutionalized U.S. population**
- **All responses are self-reported**

Influenza, Tdap, and COVID-19 Vaccination

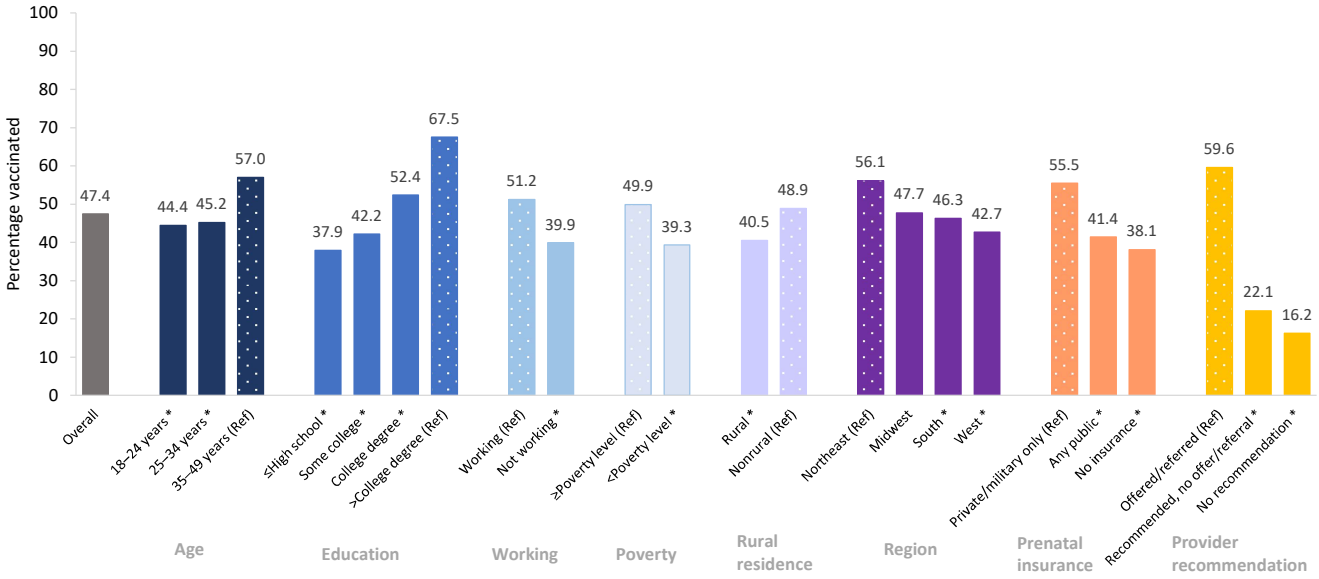
2023–24 Season

Influenza and Tdap Vaccination Coverage Among Pregnant Women — Internet Panel Survey, United States, 2010–2024



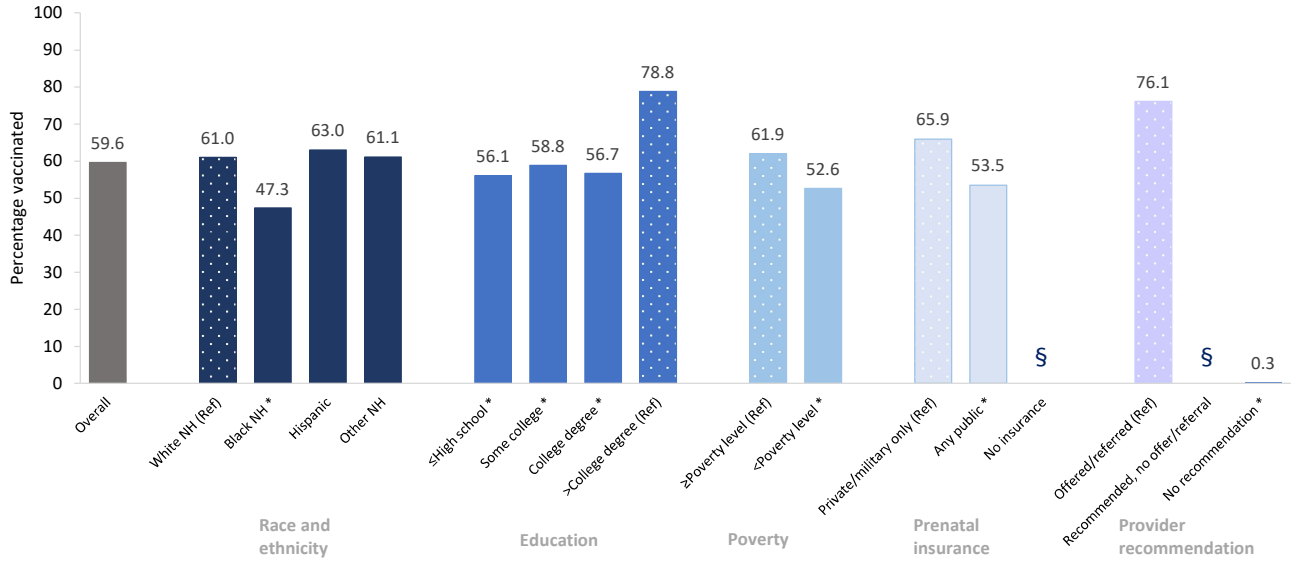
§ A methodology change increased the proportion of women who were able to complete the 2018 survey on a smartphone or other handheld device.
|| Beginning with the 2021 survey, sample weights were constructed to additionally match population control totals by current pregnancy status at the time of the survey, also applied to 2019–20 estimates.

Influenza Vaccination Coverage by Socio-Demographic Characteristics, Internet Panel Survey, United States, April 2024



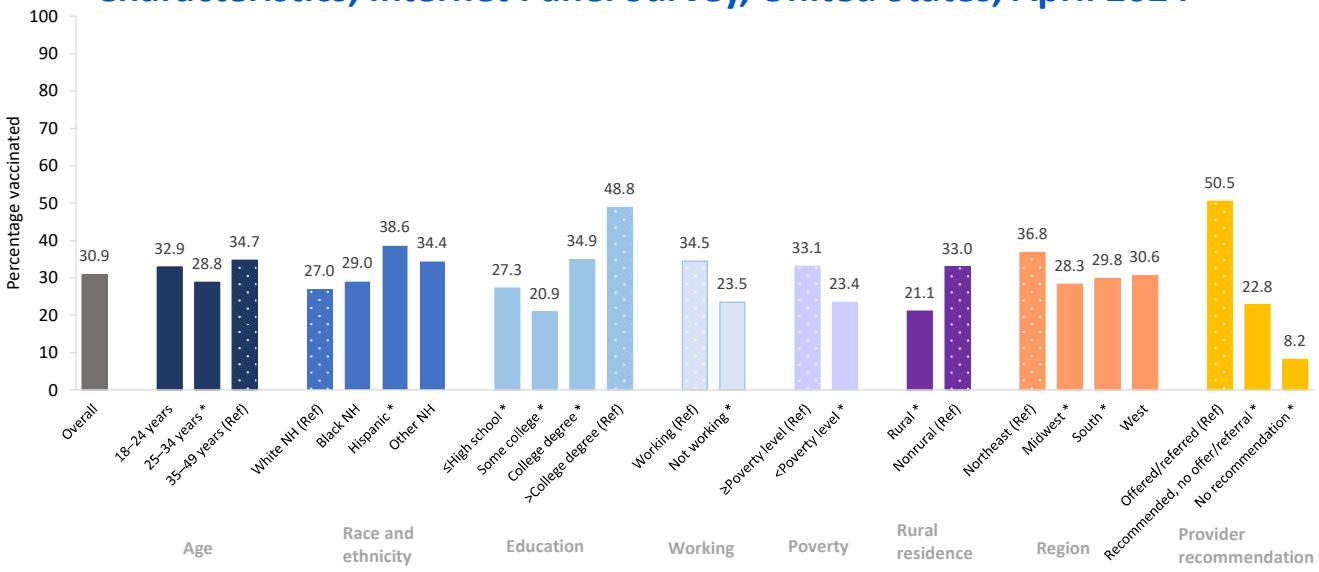
* Statistically significant difference from referent group (Ref).

Tdap Vaccination Coverage by Socio-Demographic Characteristics, Internet Panel Survey, United States, April 2024



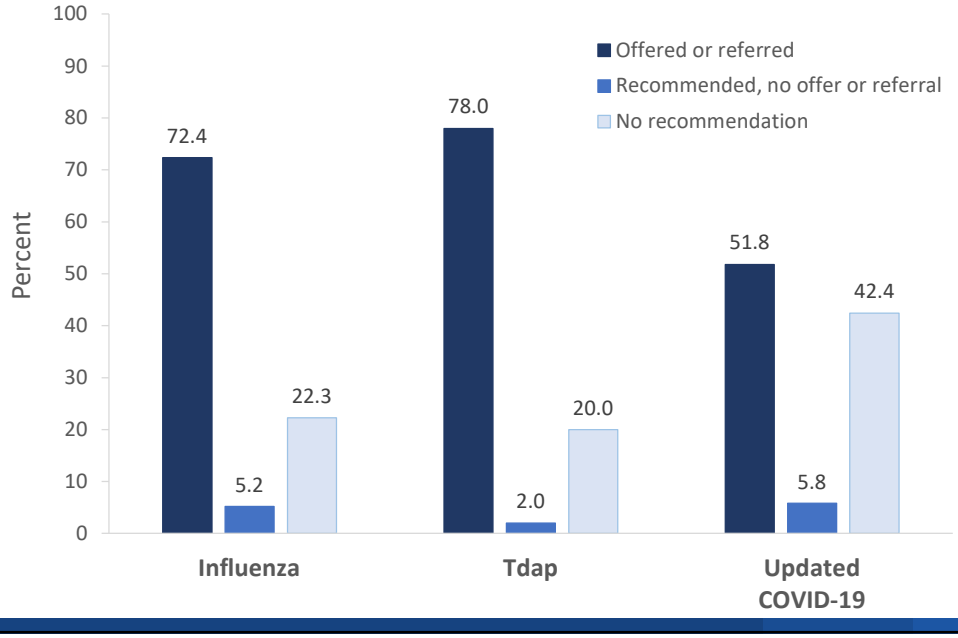
* Statistically significant difference from referent group (Ref). § Estimates do not meet the NCHS standards of reliability. https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf.

Updated COVID-19 Vaccination Coverage by Socio-Demographic Characteristics, Internet Panel Survey, United States, April 2024

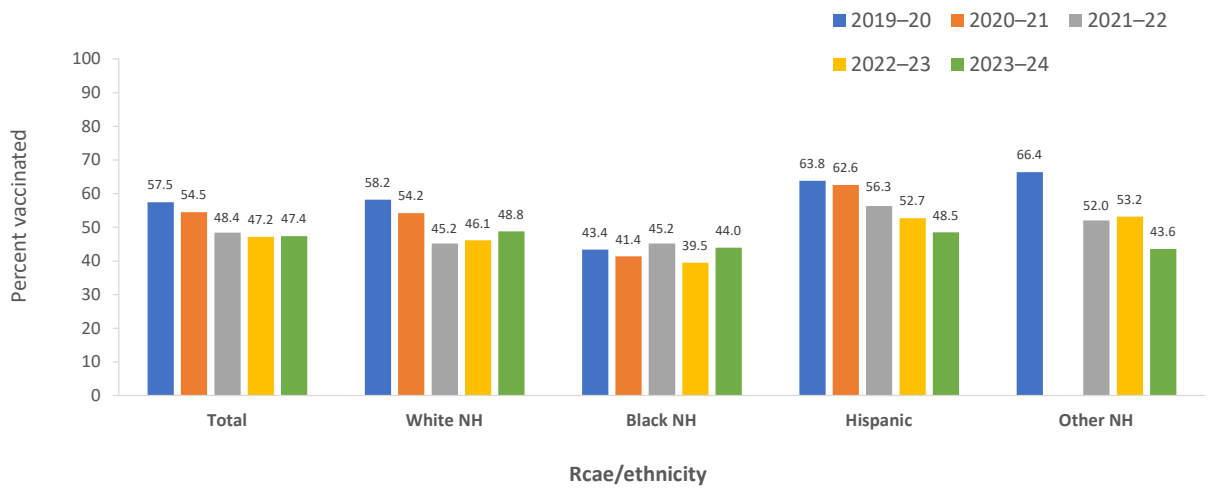


* Statistically significant difference from referent group (Ref).

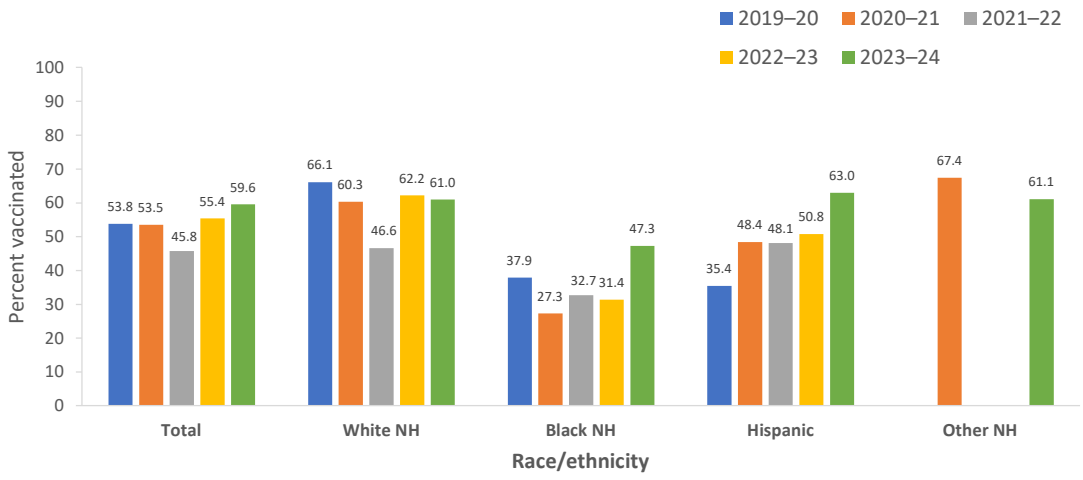
Provider Offer or Referral for Influenza, Tdap, and Updated COVID-19 Vaccines, Internet Panel Survey, United States, April 2024



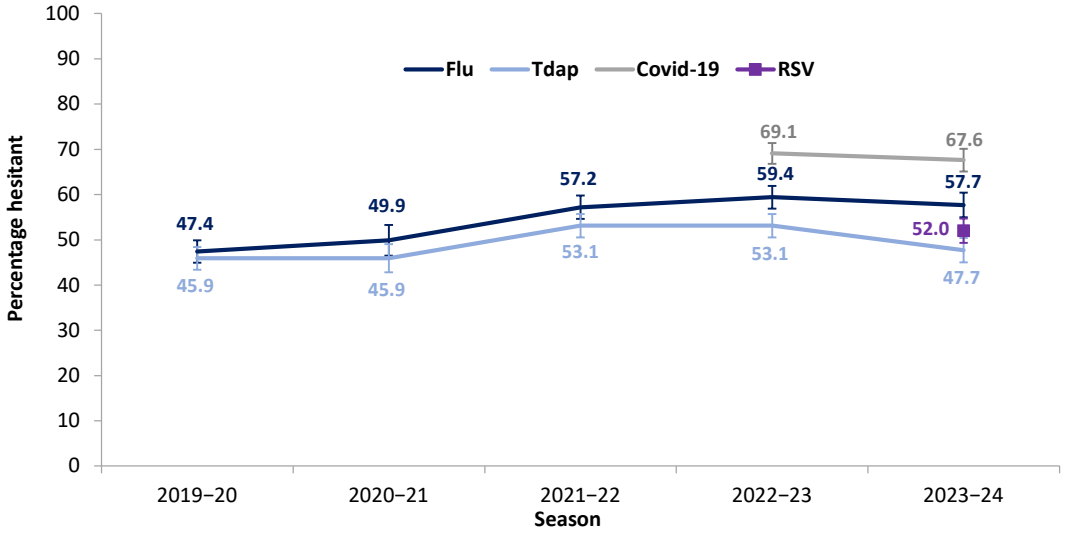
Influenza Vaccination Coverage Among Pregnant Women by Race and Ethnicity, 2019-20 through 2022-23 Influenza Seasons



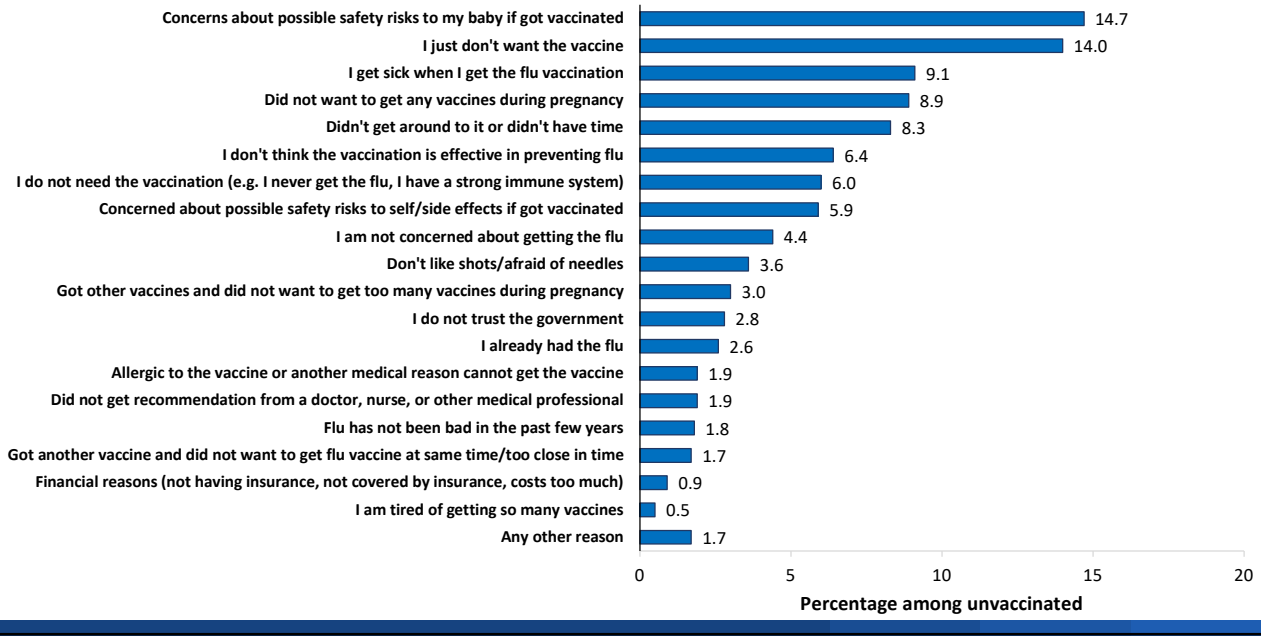
Tdap Vaccination Coverage Among Pregnant Women by Race and Ethnicity, 2019-20 through 2022-23 Influenza Seasons



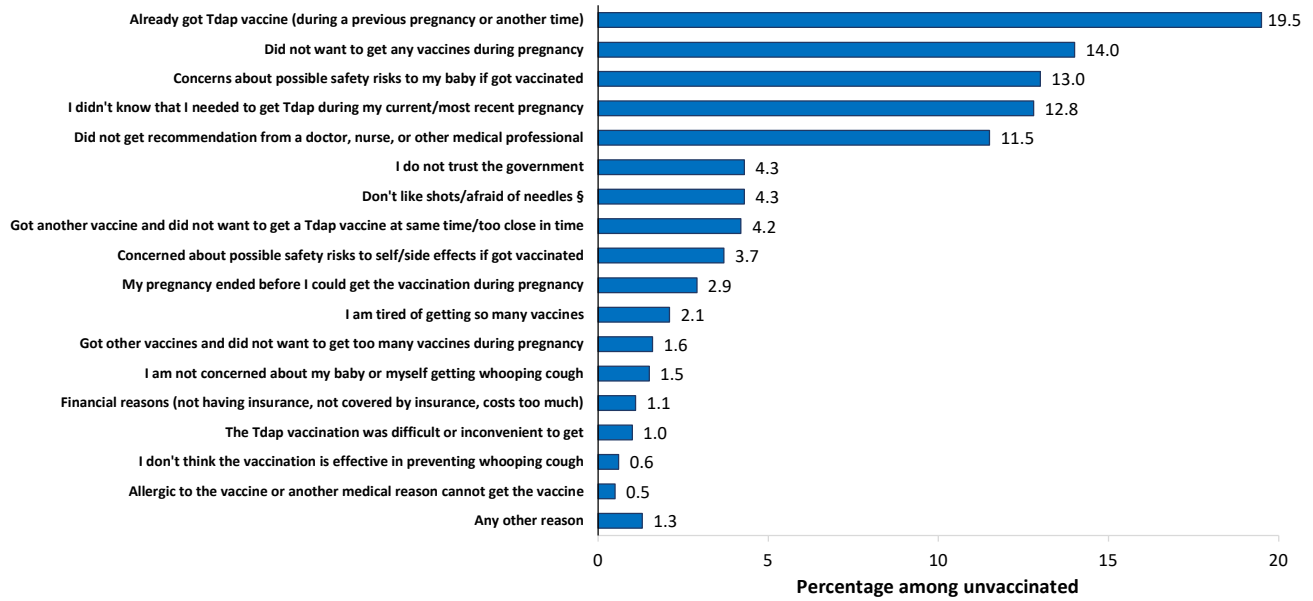
Percent of Women Who Reported being Somewhat Hesitant or Very Hesitant about Influenza, Tdap, COVID-19, or RSV Vaccinations During Pregnancy, Internet Panel Survey, United States, 2020–2024



Main Reasons for not Receiving Influenza Vaccine among Unvaccinated Pregnant Women, Internet Panel Survey, United States, April 2024

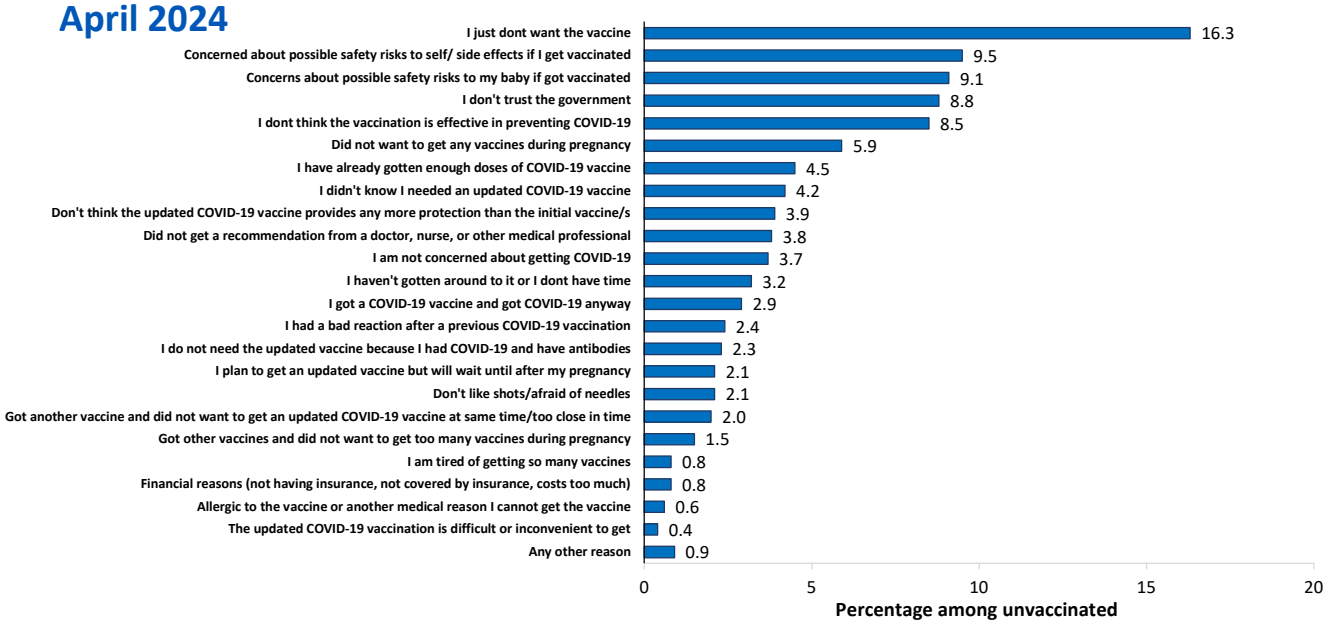


Main Reasons for not Receiving Tdap Vaccine among Unvaccinated Pregnant Women, Internet Panel Survey, United States, April 2024

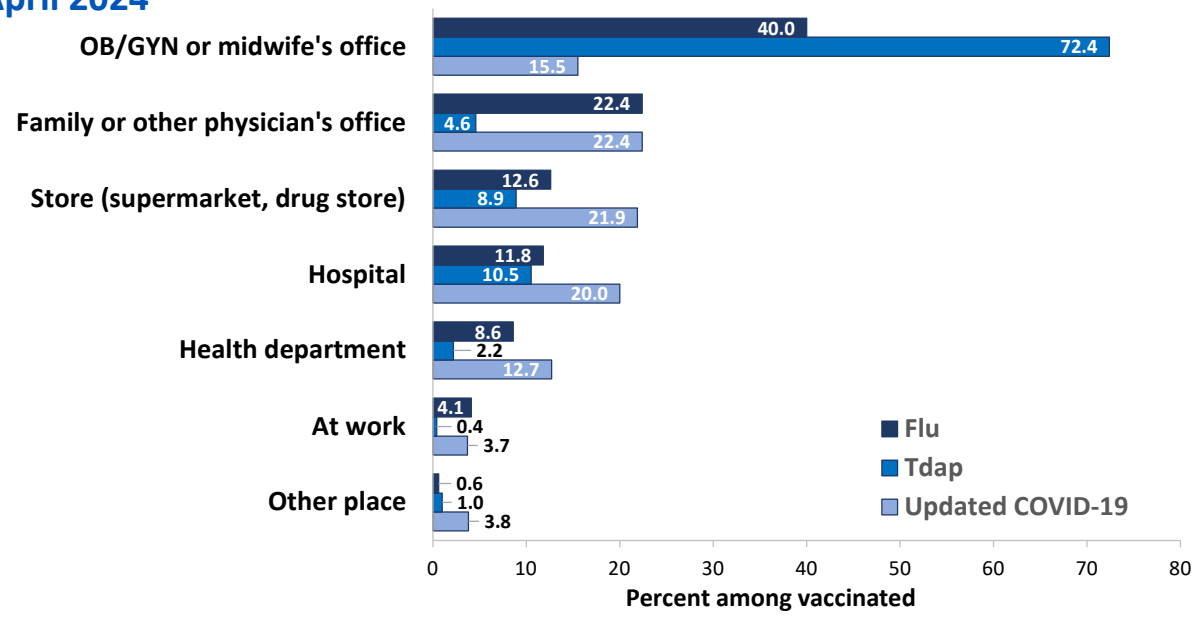


§ Estimates do not meet the NCHS standards of reliability. https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf

Main Reasons for not Receiving Updated COVID-19 Vaccine among Unvaccinated Pregnant Women, Internet Panel Survey, United States, April 2024



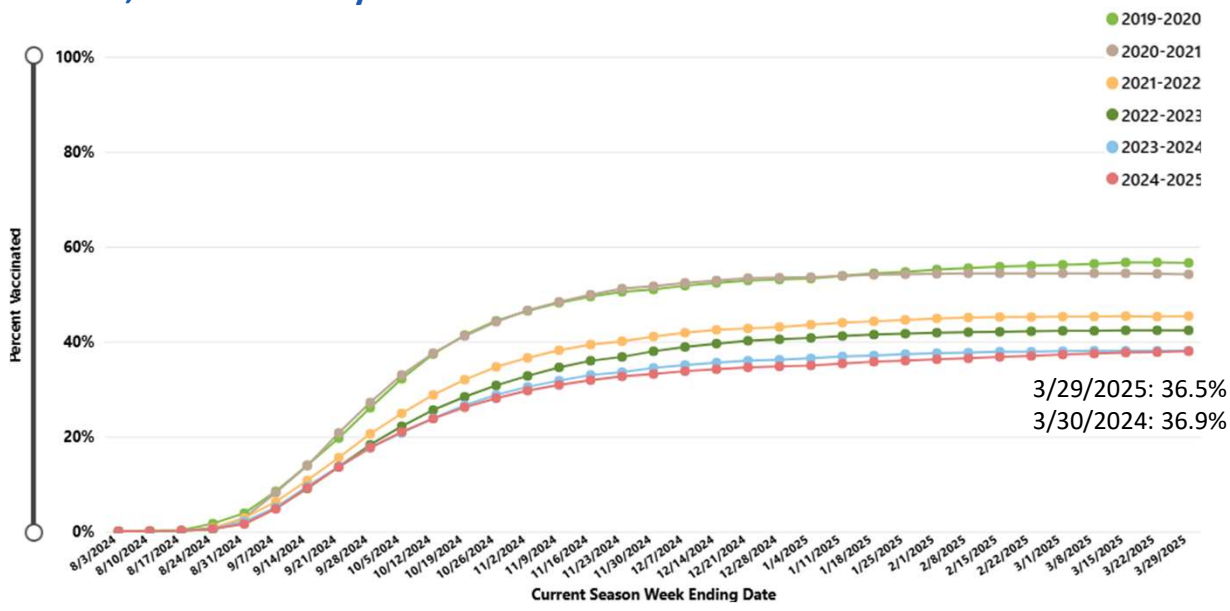
Place of Influenza, Tdap, and updated COVID-19 vaccination among vaccinated pregnant women — Internet panel survey, United States, April 2024



Influenza and COVID-19 Vaccination

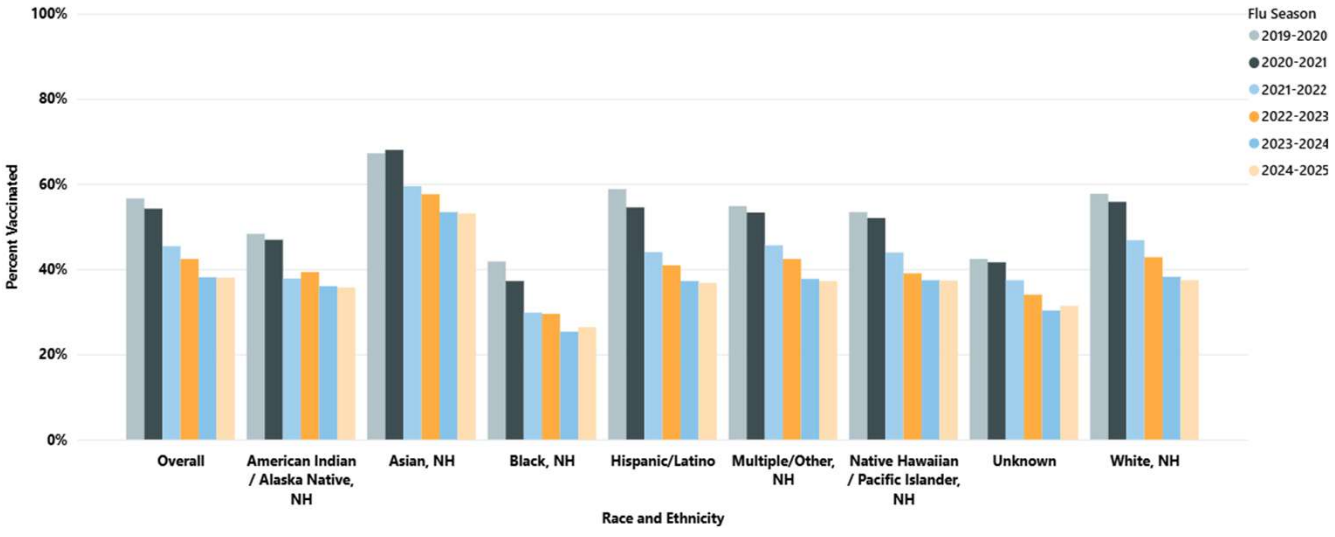
2024–25 Season, Vaccine Safety Datalink

Influenza Vaccination Coverage Among Pregnant Women 18–49 Years by Season, Vaccine Safety Datalink

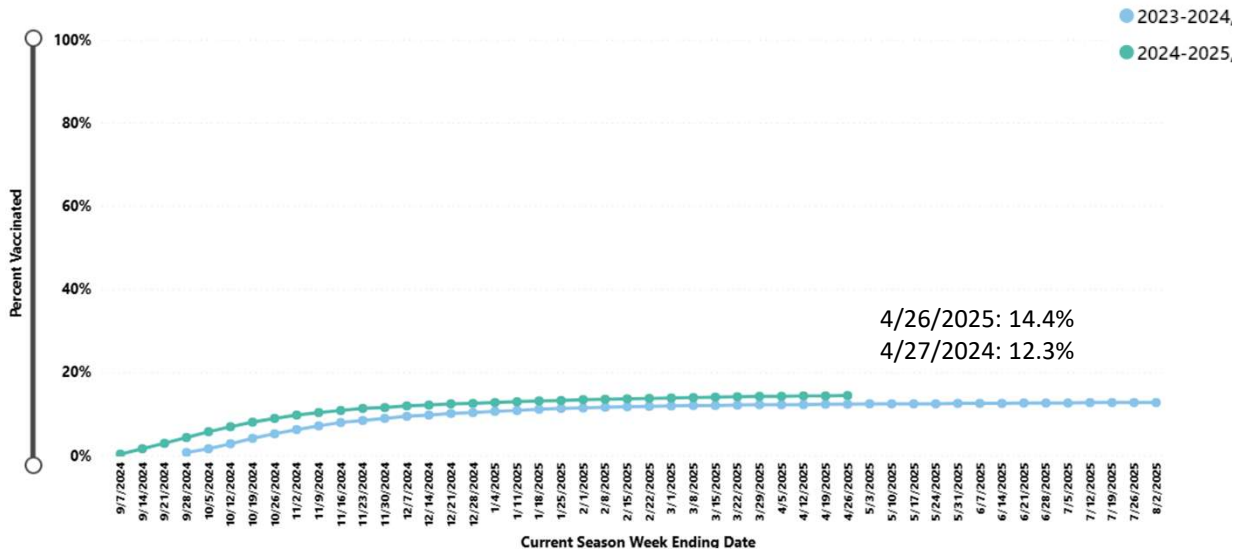


3/29/2025: 36.5%
3/30/2024: 36.9%

Influenza Vaccination Coverage Among Pregnant Women 18–49 Years by Season and Race and Ethnicity, Vaccine Safety Datalink



COVID-19 Vaccination Coverage Among Pregnant Women 18–49 Years, 2023–24 and 2024–25*, Vaccine Safety Datalink



*2023–24 COVID-19 vaccines were first available mid-September 2023, and 2024–25 COVID-19 vaccines were first available at the end of August 2024.

Maternal RSV Vaccination and Infant RSV Protection

Maternal RSV Vaccination and Nirsevimab Coverage Among Pregnant Women and Their Infants by Selected Demographics, Internet Panel Survey, April 2024

Characteristic	Maternal RSV vaccination		Receipt of nirsevimab by infant		Maternal RSV vaccination or receipt of nirsevimab by infant	
	Total N (weighted %)	Weighted % vaccinated (95% CI)	Total N (weighted %)	Weighted % vaccinated (95% CI)	Total N (weighted %)	Weighted % vaccinated (95% CI)
Overall	678	32.6 (28.8–36.6)	866	44.6 (40.9–48.3)	866	55.8 (52.1–59.6)
Maternal age group (yrs)						
35-49 (Ref)	181 (17.6)	37.4 (29.8–45.5)	257 (20.6)	48.4 (41.8–55.2)	257 (20.6)	61.3 (54.5–67.7)
25–34	378 (60.8)	28.9 (24.1–34.1)	466 (58.9)	42.5 (37.6–47.6)	466 (58.9)	54.0 (48.9–59.0)
18–24	119 (21.5)	39.1 (29.7–49.2)	143 (20.5)	46.5 (37.5–55.7)	143 (20.5)	55.8 (46.6–64.8)
Race and ethnicity						
White, non-Hispanic (Ref)	396 (49.5)	33.8 (28.8–39.0)	524 (51.2)	44.2 (39.7–48.8)	524 (51.2)	57.8 (53.2–62.3)
Black, non-Hispanic	110 (14.5)	36.4 (26.6–47.0)	129 (14.0)	51.1 (41.4–60.7)	129 (14.0)	56.5 (46.8–65.9)
Hispanic	121 (26.5)	29.3 (21.2–38.6)	147 (25.7)	43.9 (35.1–53.0)	147 (25.7)	53.7 (44.7–62.6)
Other, non-Hispanic	51 (9.4)	29.9 (16.5–46.3)	66 (9.1)	38.5 (25.9–52.3)	66 (9.1)	50.0 (35.7–64.2)
Area of residence						
Non-rural (Ref)	536 (79.7)	33.1 (28.8–37.7)	693 (81.2)	44.7 (40.6–48.9)	693 (81.2)	56.2 (52.0–60.4)
Rural	142 (20.3)	30.5 (22.4–39.7)	173 (18.8)	43.9 (35.8–52.3)	173 (18.8)	54.3 (45.7–62.7)

Maternal RSV Vaccination and Nirsevimab Coverage Among Pregnant Women and Their Infants by Selected Demographics (2), Internet Panel Survey, April 2024

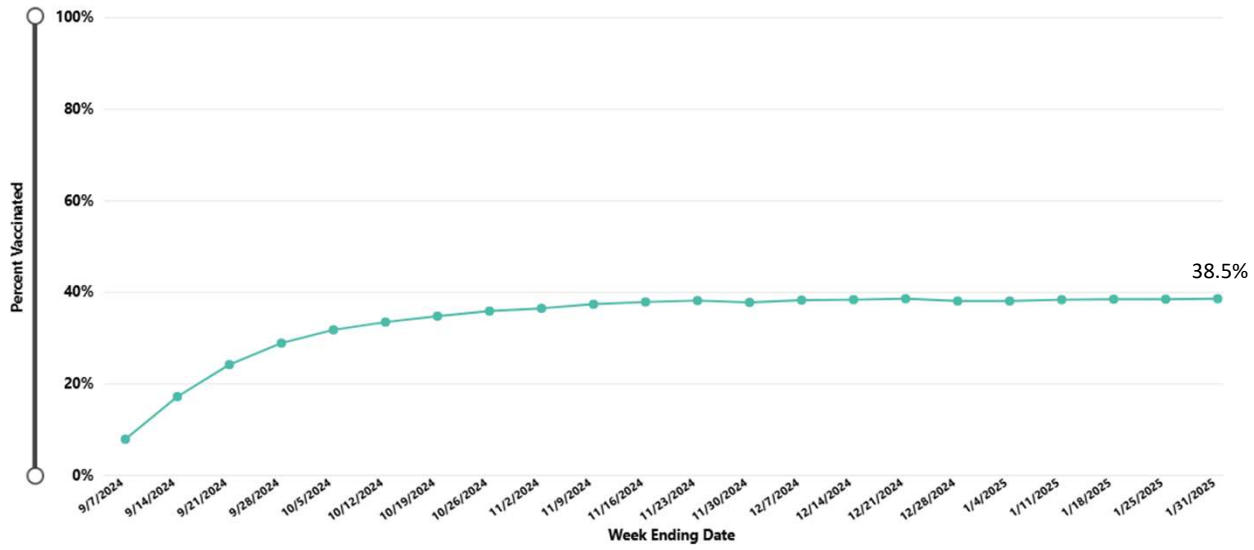
Characteristic	Maternal RSV vaccination		Receipt of nirsevimab by infant		Maternal RSV vaccination or receipt of nirsevimab by infant	
	Total N (weighted %)	Weighted % vaccinated (95% CI)	Total N (weighted %)	Weighted % vaccinated (95% CI)	Total N (weighted %)	Weighted % vaccinated (95% CI)
Maternal education						
Higher than college degree (Ref)	86 (10.6)	50.1 (38.1–62.0)	112 (11.3)	37.2 (27.8–47.5)	112 (11.3)	63.4 (53.0–72.8)
College degree	234 (33.6)	***32.7 (26.2–39.7)***	302 (33.8)	46.2 (39.9–52.5)	302 (33.8)	55.9 (49.5–62.1)
Some college, no degree	169 (23.2)	***30.0 (22.9–38.0)***	220 (24.6)	45.3 (38.0–52.7)	220 (24.6)	55.2 (47.7–62.6)
High school diploma or less	189 (32.6)	***28.7 (21.8–36.4)***	232 (30.4)	45.0 (37.7–52.4)	232 (30.4)	53.5 (46.0–60.9)
Maternal employment status						
Working (Ref)	410 (59.1)	35.7 (30.7–40.9)	531 (59.8)	48.5 (43.8–53.2)	531 (59.8)	60.1 (55.3–64.7)
Not working	268 (40.9)	28.2 (22.2–34.7)	335 (40.2)	***38.7 (32.9–44.8)***	335 (40.2)	***49.6 (43.5–55.7)***
Poverty status						
At or above poverty (Ref)	496 (72.1)	35.0 (30.4–39.8)	647 (73.3)	44.5 (40.2–48.8)	647 (73.3)	57.3 (53.0–61.6)
Below poverty	182 (27.9)	***26.4 (19.8–33.9)***	219 (26.7)	44.7 (37.4–52.2)	219 (26.7)	51.7 (44.2–59.3)
Prenatal insurance coverage						
Private or military insurance only (Ref)	313 (41.7)	38.9 (32.9–45.1)	417 (45.1)	43.1 (37.9–48.4)	417 (45.1)	58.9 (53.6–64.1)
Any public insurance	339 (53.8)	***28.0 (22.9–33.6)***	418 (50.9)	46.9 (41.6–52.3)	418 (50.9)	53.7 (48.3–59.1)
No insurance	26 (4.4)	—	31 (4.0)	—	31 (4.0)	—
Provider recommendation of RSV vaccination or nirsevimab administration						
Recommendation (Ref)	388 (56.0)	56.7 (51.1–62.2)	469 (53.5)	58.7 (53.6–63.7)	469 (53.5)	79.2 (74.6–83.3)
No recommendation	290 (44.0)	***1.9 (0.6–4.4)***	397 (46.5)	***28.3 (23.5–33.5)***	397 (46.5)	***29.0 (24.2–34.2)***

Bolded estimates are significantly different compared with the referent group.

Maternal Preferences for RSV Vaccination, Internet Panel Survey, April 2024

Preference/Reasons	N	Weighted % (95% CI)§
Maternal RSV vaccination during pregnancy	**782**	**38.1 (35.7–40.5)**
I believe it will be safer	373	47.8 (43.8–51.9)
I believe it will be more effective	234	30.0 (26.4–33.8)
I am worried the antibody shot will not be available for my baby	105	12.4 (9.9–15.2)
I am worried the antibody shot will cost too much or not be covered by insurance	37	4.9 (3.3–6.9)
I am worried about my baby getting too many shots	225	30.2 (26.6–34.0)
I do not have enough information about the RSV antibody shot	127	16.1 (13.3–19.2)
Other reason	51	5.8 (4.2–7.8)
RSV antibody shot for baby	**576**	**27.8 (25.7–30.1)**
I believe it will be safer	188	32.4 (28.0–36.9)
I believe it will be more effective	258	43.6 (39.0–48.3)
I am worried the vaccination will not be available during my pregnancy	46	7.5 (5.3–10.2)
I am worried the vaccination will cost too much or not be covered by insurance	41	7.3 (5.0–10.2)
I am worried about getting too many shots during my pregnancy	126	23.0 (19.1–27.3)
I do not have enough information about the RSV vaccination during pregnancy	108	18.8 (15.4–22.6)
Other reason	44	7.7 (5.5–10.5)
No preference	**419**	**21.3 (19.3–23.4)**
I would not get an RSV vaccination for myself or the RSV antibody shot for my baby	**246**	**12.8 (11.1–14.5)**

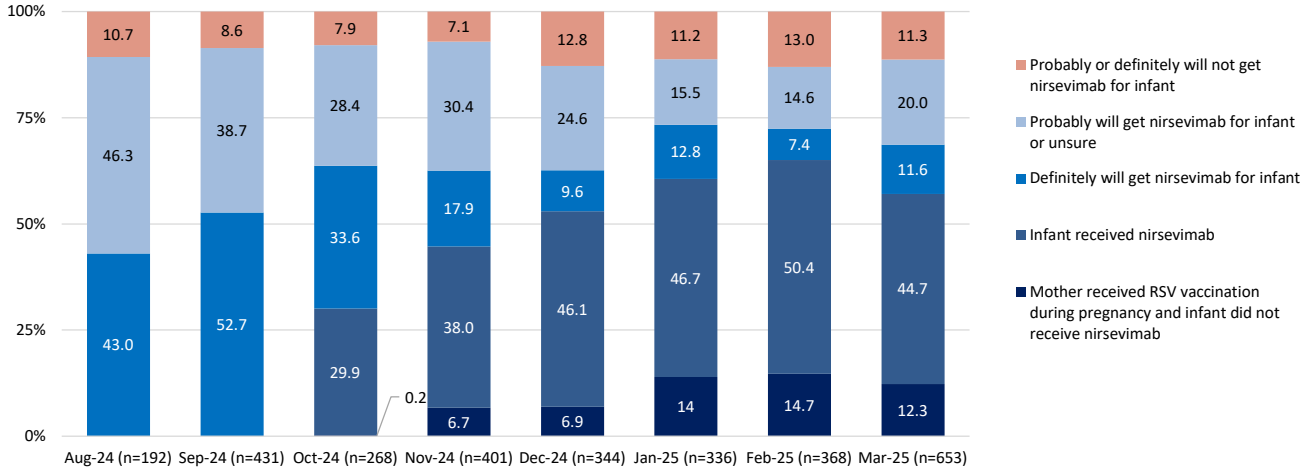
RSV vaccination coverage among pregnant women* 18–49 years, 2024–25 season, Vaccine Safety Datalink



- *Among pregnant women who reached 32 weeks' gestation after September 1, 2024

Protection Against RSV and Intent for Nirsevimab Among Infants <8 months, August 2024–March 2025, NIS-ACM

Infant protection against RSV by maternal RSV vaccination or receipt of nirsevimab, and intent for nirsevimab, among those with a baby <8 months during the RSV season (born since April 2024)



57% of infants born April 2024-March 2025 were protected from RSV from either maternal vaccination or nirsevimab receipt.

Summary

- **Influenza vaccination coverage decreased from 57.5% in 2019–20 to 47.4% in 2023–24.**
  - Preliminary data suggest coverage in 2024–25 is similar to 2023–24
- **Tdap vaccination coverage was ~60% in 2023–24.**
- **Vaccination coverage with the 2023–24 COVID-19 vaccine was only approximately 30%, which may be an overestimate.**
  - Coverage with 2023–2024 COVID-19 vaccine from the Vaccine Safety Datalink was only 12%; coverage with the 2024–2025 COVID-19 vaccine was 14%
- **For all vaccines, coverage was higher among women who reported receiving a provider offer or referral for vaccination.**

Summary (2)

- **Reasons reported for non-vaccination continue to highlight concerns about perceived safety risks if vaccinated during pregnancy, as well as a lack of knowledge regarding the need to receive a Tdap vaccine during *every* pregnancy.**
- **Preliminary data from 2024–25 season suggests that maternal RSV vaccination is ~39%, and 57% of infants born April 2024–March 2025 are protected from RSV through maternal vaccination or nirsevimab receipt.**

Limitations (Internet Panel Survey)

- **The sample was a non-probability sample, and results might not be generalizable to all pregnant women in the United States.**
- **Vaccination status was self-reported and might be subject to recall or social desirability bias.**
- **Non-coverage and nonresponse bias might remain after weighting adjustments.**
- **Due to small sample size, we were not able to assess vaccination coverage separately among some racial and ethnic groups.**
- **Tdap, coverage estimates might be subject to uncertainty, given the exclusion of 11% of women with unknown Tdap vaccination status.**
- **Survey respondents may have had difficulty distinguishing the updated 2023–2024 COVID vaccine from previous booster and bivalent doses.**

Limitations (Internet Panel Survey)

- **Formal statistics were used to determine differences in vaccination coverage between groups in this non-probability sample.**
- **Despite limitations, Internet panel surveys are a useful assessment tool for timely evaluation of vaccination coverage among pregnant women, as well as the assessment of related knowledge, attitudes, beliefs, and behaviors.**

Limitations (Vaccine Safety Datalink)

- **Sample might not be nationally representative**
- **Vaccinations received outside of VSD sites could be missed**

Thank you!
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For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 cdc.gov

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