

RSV Vaccination Intention Among People Who Are or Plan to Become Pregnant

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abstract

OBJECTIVES: Respiratory syncytial virus (RSV) is a common pediatric infection, with young infants being at the highest risk of hospitalization and long-term sequelae. New preventive agents have been recommended to prevent severe RSV illness in infants, including a vaccine administered during pregnancy. The current rates of recommended vaccination in pregnancy are sub-optimal. Our objective was to characterize interest in RSV vaccination during pregnancy among people across the United States who were pregnant or planning to become pregnant.

METHODS: In March 2023, we conducted a national cross-sectional online survey of individuals 18 to 45 years old who were currently pregnant or trying to become pregnant on their perceptions of RSV-related illness and intentions to get vaccinated against RSV. We performed logistic regression analyses to determine the odds and predicted proportions of the likelihood of RSV vaccination during pregnancy, controlling for sociodemographic factors.

RESULTS: Of 1619 completed surveys, 1528 were analyzed. 54% of respondents indicated that they were “very likely” to get vaccinated against RSV during pregnancy. The perception of RSV as a serious illness was the strongest predictor of vaccination likelihood. In the full regression model, predicted proportions of “very likely” to vaccinate against RSV followed a similar pattern (63% if RSV infection was perceived as serious and likely, 55% if serious and unlikely, 35% if not serious; $P < .001$).

CONCLUSIONS: Raising awareness of RSV infection as likely and potentially serious for infants may be an influential component of targeted communications that promote RSV vaccine uptake during pregnancy.



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WHAT'S KNOWN ON THIS SUBJECT: With increasing vaccine hesitancy nationwide, RSV vaccination is now recommended during pregnancy. There is modest uptake of vaccination during pregnancy with tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis and influenza vaccines, despite evidence of benefit to the recipient and child.

WHAT THIS STUDY ADDS: In this nationwide survey of people who are or plan to become pregnant, 54% expressed interest in RSV vaccination during pregnancy. The demographic factors associated with interest in RSV vaccination can inform further education efforts as vaccines become available.

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Respiratory syncytial virus (RSV) is a leading cause of infection among infants,¹ frequently resulting in hospital or intensive care admission, especially for children with special health care needs. Almost all children in the United States will contract RSV within the first 2 years of life. RSV infection contributes to significant morbidity and mortality for young infants, with the highest rate of hospitalization at 25 per 1000 among RSV-positive 1-month-old infants.² Additionally, RSV infections severe enough to require hospitalization have been associated with long-term wheezing and a higher risk of future hospitalization for asthma symptoms compared with children not hospitalized with RSV as infants.^{3,4}

To date, 2 vaccines have been routinely recommended during pregnancy by the American College of Obstetricians and Gynecologists and the Centers for Disease Control and Prevention (CDC): influenza if the patient is pregnant during influenza season and the combined vaccine for tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) for all pregnancies between 27 and 36 weeks' gestation.^{5,6} For influenza and Tdap vaccines, national data indicate that only approximately one-half of pregnant persons in the United States receive these vaccines as recommended.^{7,8}

Recently, novel agents for the prevention of RSV have received US Food and Drug Administration (FDA) and CDC approval, including nirsevimab, a long-acting monoclonal antibody for administration to young children, and Abrysvo, a vaccine recommended for pregnant individuals and persons aged 60 years and older.^{9–12} Since the convergence of widespread outbreaks of coronavirus disease 2019, influenza, and RSV in 2022,¹³ there has been great interest in the pediatric community about the potential of new pharmaceuticals to prevent severe RSV infection among infants.¹⁴ To realize the full benefit for children of a novel RSV vaccine for pregnant persons, it is important to examine the attitudes of the potential vaccine recipients to illuminate drivers of individual interest so that health care and public health teams can develop and implement interventions to promote vaccine uptake.

METHODS

We conducted a nationwide, cross-sectional online survey of people aged 18 to 45 years who were currently pregnant or planning to become pregnant in the coming year.

Setting and Participants

We recruited participants using Qualtrics^{XM} “dynamic surveys,” as in our previously published work on vaccine attitudes in a community-based sample.¹⁵ Surveys were distributed to eligible panel members through an online portal. Panel members accessed surveys as they became available. Panels were used to purposefully survey diverse people of childbearing age, with the goal of recruiting a sample with

a racial and ethnic composition resembling the US population.

Survey Distribution

The survey was available in English and Spanish. Survey responses were collected from March 1 to March 20, 2023. To enhance response rates, Qualtrics^{XM} used an automated reminder option based on respondents' preferences. A pilot of 52 respondents was conducted to ensure question comprehension and data validity, after which there were no concerns or changes and response collection continued.

To ensure data quality, several checks were established, including (1) participants' surveys were terminated if they were “speeding,”¹⁶ as indicated by one-half the median of the completion speed during the pilot, (2) only unique internet protocol addresses were included to prevent duplicate responses, and (3) surveys were excluded if respondents chose the same answer for every question, which is known as “straight lining.”¹⁶ In addition, a quality attention check question was included midsurvey. Responses were excluded if they failed any of the quality checks.

Measures

Pregnancy

Respondents were screened for eligibility by using the first 2 questions of the survey, which determined if they were 18 to 45 years old and if they identified as a person who was pregnant or may become pregnant by asking if respondents were either currently pregnant or planning to become pregnant in 2023.

Sociodemographic Measures

We used our survey to obtain demographic characteristics by self-report. Race and ethnicity information was collected by asking “What is your race and ethnicity? Please select all that apply.” Insurance type was obtained by asking “Which of the following types of health insurance coverage do you have?”; response options included private, public, no health insurance, or prefer not to answer. Those who preferred not to answer were categorized as missing. Respondents were asked for their 5-digit zip code, which was then mapped to 1 of the 4 US census regions.¹⁷

Perceptions of RSV Illness

To understand the perception of RSV illness, respondents were asked about the seriousness and likelihood of RSV. First, respondents were asked, “How likely do you think it is that your future child will get RSV in their first 12 months of life?” Response options included “very likely,” “somewhat unlikely,” “not likely,” “not sure,” and “prefer not to respond.” We dichotomized responses as likely if the respondents selected “very likely” or “somewhat unlikely” and “not likely” if any other response was selected. Next, respondents

were asked, “How much do you agree or disagree with this statement? RSV is a serious illness for children.” Response options included “strongly agree,” “agree,” “neutral,” “disagree,” “strongly disagree,” “not sure,” and “prefer not to respond.” We dichotomized responses as “serious” if “strongly agree” or “agree” were selected and “not serious” if any other response was selected. All “prefer not to respond” responses were recorded as missing and excluded from the analyses.

Using these 2 variables, we created a combined “serious and likely” variable regarding respondents’ perceptions of RSV illness for children. Given the small proportion of respondents who perceived RSV as not serious, we created the variable with 3 categories: “serious and likely,” “serious and not likely,” and “not serious, regardless of likelihood.”

RSV Vaccination Intention

At the time of survey administration, FDA approval was pending for a vaccine against RSV during pregnancy. To understand their intentions toward future RSV vaccination during pregnancy, respondents were asked, “To protect your future infant against RSV, how likely is it that you would get vaccinated against RSV during pregnancy?” Response options included “very likely,” “somewhat likely,” “neutral,” “somewhat unlikely,” “very unlikely,” and “prefer not to respond.” We dichotomized responses as very likely to vaccinate if “very likely” was selected and less likely to vaccinate against RSV if the other choices were selected. “Prefer not to respond” was categorized as missing and was excluded from the analyses.

Ethical Considerations

The study was considered exempt human subjects research by the Institutional Review Board at Ann & Robert H Lurie Children’s Hospital of Chicago. Incentives for participation were determined by Qualtrics^{XM} and ranged from \$3.58 to \$3.75 per survey based on the time spent completing the survey and compensation on similar surveys.

Analysis

Our dichotomous outcome of interest was very likely versus less likely intent to receive the RSV vaccine during pregnancy. Based on previous studies of vaccination intent and hesitancy, predictors of primary interest included race and ethnicity, census region, insurance type, pregnancy status (current, planning), respondent age, and child age if the respondent had a child at home. We conducted bivariate analyses to determine variable inclusion for subsequent multivariable models. Models for 3 analytic samples were evaluated, including all respondents, respondents with child(ren) at home, and respondents without child(ren) at home. The multivariable model included all variables with $P \leq .25$ in any of the 3 bivariate analytic samples (total; with child(ren) at home;

without child(ren) at home) for consistency in reporting. Child age was removed from the multivariable model because of collinearity. Postestimation testing was conducted to calculate predicted probabilities based on the multivariable analyses. All analyses were conducted by using Stata 17 (Stata Corporation; College Station, Texas).

RESULTS

Sample Demographics

Of those within our target demographic that were offered the survey, 3413 started the survey and 1619 completed it (survey completion rate = 47%). A total of 90 responses were excluded because of quality concerns, resulting in an overall analytic sample size of 1528. A total of 50 parents completed the survey in Spanish. Approximately one-third of respondents were 18 to 25 years old, and <10% were 40 to 45 years old. Survey respondents generally reflected the racial and ethnic composition of the childbearing population in the United States (Table 1).¹⁸ Racial and ethnic demographics were similar for respondents with and without a child at home. Most respondents had health insurance, with 50% of respondents with commercial insurance, 46% with public insurance, and 5% with no insurance. Twice as many respondents lived in the South as in any other major census region.

Responses were split almost evenly between people planning to become pregnant (48%) and those who were currently pregnant (52%). More than one-half already had at least 1 child at home (60%), with most children currently 1 to 5 years old (55%). Among respondents with a previous pregnancy, 39% had received both the Tdap and influenza vaccines and 20% reported receiving the Tdap vaccine alone, for a total of 59% who had received the Tdap vaccine, and 23% reported receiving the influenza vaccine alone, for a total of 62% who had received the influenza vaccine.

In the overall sample, 30% of respondents reported first hearing about RSV illness in 2022, 15% reported first hearing about it in 2021, and 36% reported first hearing about it in 2020 or earlier, whereas 20% said they had never heard of RSV. Among respondents with child(ren) at home, 29% reported first hearing about RSV illness in 2022, 17% reported first hearing about it in 2021, 37% reported first hearing about it in 2020 or earlier, and 16% said they had never heard of RSV. In contrast, a greater proportion of parents without children had not heard of RSV; 30% reported first hearing about RSV illness in 2022, 12% reported first hearing about it in 2021, 33% reported first hearing about it in 2020 or earlier, and 25% said they had never heard of RSV.

In the overall sample, 40% of respondents perceived that RSV illness among children is both serious and likely, whereas 45% perceived RSV illness as serious but

TABLE 1 Demographics of Survey Respondents in the Overall Sample ($n = 1528$) and Among Subsamples of Respondents With Child(ren) at Home ($n = 914$)^a and Respondents Without a Child at Home ($n = 611$)

Demographics	Respondents Overall, n (%)	Respondents in Subsample With Child(ren) at Home, n (%)	Respondents in Subsample Without a Child at Home, n (%)
Race/ethnicity			
American Indian/Alaska Native	12 (1)	9 (1)	3 (0)
Asian	79 (5)	42 (5)	37 (6)
Black, non-Hispanic	201 (13)	117 (13)	82 (13)
Native Hawaiian/Pacific Islander	4 (0)	4 (0)	0 (0)
Hispanic	296 (19)	184 (20)	112 (18)
Multi-race/other	30 (2)	22 (2)	8 (1)
White, non-Hispanic	900 (59)	532 (58)	367 (60)
Census region			
Northeast	303 (20)	186 (20)	116 (19)
South	630 (41)	376 (41)	253 (41)
Midwest	302 (20)	171 (19)	131 (21)
West	293 (19)	181 (20)	111 (18)
Insurance			
Commercial	741 (50)	448 (50)	291 (49)
Public	687 (46)	413 (46)	273 (46)
No insurance	68 (5)	38 (4)	30 (5)
Pregnancy status			
Planning	730 (48)	344 (38)	385 (63)
Pregnant	798 (52)	570 (62)	226 (37)
Maternal age			
18–25 y	475 (31)	190 (21)	282 (46)
25–30 y	292 (19)	178 (19)	114 (19)
30–35 y	364 (24)	233 (25)	131 (21)
35–40 y	275 (18)	212 (23)	63 (10)
40–45 y	122 (8)	101 (11)	21 (3)
Child age category			
<1 y	104 (11)	103 (11)	—
1–5 y	504 (55)	504 (55)	—
6–10 y	170 (19)	170 (18.6)	—
≥11 years	133 (15)	133 (15)	—

—, indicates where child age was not collected for respondents without a child at home.

^a Three study participants had child(ren) at home but did not specify how many children were in the home. They were included in the Total column but were not included in the subgroup analyses.

not likely, and 16% did not view RSV illness as serious. In the subsample of respondents with child(ren) at home, 44% perceived RSV illness among children as both serious and likely, whereas 40% perceived RSV illness as serious but not likely, and 16% did not perceive RSV illness as serious. In contrast, in the subsample of respondents without a child at home, 33% perceived RSV illness among children as both serious and likely, whereas 52% perceived RSV illness as serious but not likely, and 15% did not perceive RSV illness as serious, regardless of its likelihood.

Self-Reported Likelihood of Future Vaccination Against RSV During Pregnancy

Among survey respondents, 54% reported that they would be very likely to receive a future RSV vaccine during pregnancy, with the same rates among those who

were currently pregnant and trying to become pregnant. A higher proportion of respondents with a child at home reported they would be very likely to receive RSV vaccination during pregnancy (57%) than those without a child at home (50%; $P = .01$). A total of 63% of respondents who thought that RSV illness was both serious and likely reported they would be very likely to get vaccinated against RSV during pregnancy, whereas 31% of those who thought RSV illness was not serious (regardless of whether they thought it was likely) would do so ($P < .001$).

Associations With Likelihood of Future RSV Vaccination During Pregnancy

In the adjusted overall model, respondents who had received Tdap or influenza vaccines in past pregnancies had significantly higher odds of being very likely to

receive a future RSV vaccine during pregnancy (odds ratio 3.56, 95% confidence interval 2.38–5.33; Table 2). Among respondents who thought it was likely, as well as those who thought it was not likely, perceiving RSV illness in children as serious was associated with significantly higher odds of receiving a future RSV vaccine across the 3 models (overall, with child(ren), and without a child at home) when compared with those who believed RSV not to be serious.

Among parents without a child at home, non-Hispanic Black parents and parents with Medicaid had significantly higher odds of reporting that they would be very likely to receive a future RSV vaccine during pregnancy. In the overall sample and the subsample without a child at home, individuals with public insurance had significantly higher odds of saying they were very likely to receive a future RSV vaccine during pregnancy. In contrast, child age and census region were not significantly associated with a

TABLE 2 Adjusted Odds of Being “Very Likely” to Receive a Future RSV Vaccine During Pregnancy, Among Respondents Currently Pregnant or Planning to Become Pregnant

	Very Likely to Get a Future RSV Vaccine in Pregnancy: Overall Sample			Very Likely to Get a Future RSV Vaccine in Pregnancy: Subsample of Respondents With a Child(Ren) at Home			Very Likely to Get a Future RSV Vaccine in Pregnancy: Subsample of Respondents Without a Child at Home		
	aOR	95% CI	P	aOR	95% CI	P	aOR	95% CI	P
Currently pregnant ^a	0.89	0.70–1.11	.301	1.03	0.76–1.41	.828	0.68	0.47–0.98	.038
Heard of RSV									
In 2022	0.98	0.71–1.36	.906	1	0.63–1.58	.995	1.01	0.62–1.64	.966
In 2021	0.85	0.58–1.25	.411	0.71	0.43–1.18	.184	1.24	0.66–2.31	.5
In 2020 or earlier	1.13	0.82–1.56	.462	1.09	0.70–1.70	.71	1.17	0.72–1.92	.526
Never	Reference								
Vaccination during past pregnancies									
Yes, received some or all vaccines	3.56	2.38–5.33	<.001	3.61	2.40–5.44	<.001	—	—	—
No, did not receive past pregnancy vaccines	Reference						—	—	—
No previous pregnancy	2.29	1.51–3.47	<.001	—	—	—	—	—	—
Seriousness and likelihood of RSV illness for children									
Serious and likely	3.41	2.39–4.85	<.001	3.14	2.01–4.92	<.001	3.91	2.13–7.18	<.001
Serious and not likely	2.4	1.70–3.38	<.001	2.64	1.69–4.13	<.001	2.19	1.24–3.67	.007
Not serious (likely or not likely)	Reference								
Race and ethnicity									
American Indian/Alaskan Native	2.21	0.59–8.23	.238	2.13	0.46–9.89	.334	1.39	0.12–16.60	.793
Asian	1.05	0.63–1.73	.858	0.69	0.35–1.39	.3	1.73	0.82–3.64	.15
Black, non-Hispanic	1.2	0.84–1.70	.317	0.83	0.52–1.33	.444	2.08	1.18–3.64	.011
Native Hawaiian/Pacific Islander	0.75	0.06–9.53	.824	0.61	0.05–8.24	.71	—	—	—
Hispanic	1.29	0.95–1.75	.11	1.28	0.86–1.91	.262	1.25	0.76–2.04	.382
Multi-race/other	1	0.46–2.19	.993	1.08	0.43–2.72	.877	0.83	0.19–3.71	.808
White, non-Hispanic	Reference								
Insurance type									
Commercial	Reference								
Public	1.46	1.15–1.84	.002	1.3	0.95–1.76	.096	1.8	1.22–2.65	.003
No insurance	0.78	0.45–1.34	.364	1.14	0.53–2.43	.736	0.48	0.20–1.13	.093
Maternal age									
18–24 y	Reference								
25–29 y	1.16	0.84–1.61	.374	1.57	0.99–2.49	.057	0.96	0.59–1.57	.874
30–34 y	1.24	0.90–1.69	.184	1.56	1.00–2.43	.048	1.02	0.64–1.64	.929
35–39 y	0.97	0.68–1.37	.843	1.06	0.67–1.67	.81	1.11	0.60–2.03	.744
40–45 y	1.37	0.86–2.18	.19	1.67	0.96–2.93	.072	1.03	0.38–2.78	.949
Census region									
Northeast	Reference								
South	1.02	0.76–1.38	.899	0.93	0.62–1.38	.708	1.22	0.75–1.98	.424
Midwest	1.03	0.73–1.46	.857	0.95	0.60–1.51	.84	1.18	0.68–2.05	.552
West	1.21	0.85–1.72	.293	1.1	0.69–1.73	.694	1.27	0.71–2.27	.415

^a Compared with respondents who were planning to get pregnant.

parent reporting they would be very likely to receive a future RSV vaccine in the overall model. In the subsample of respondents without a child at home, those who were currently pregnant were significantly less likely than those planning to get pregnant to say they were very likely to get vaccinated against RSV during pregnancy.

Predicted Probabilities of Future RSV Vaccination During Pregnancy

Based on the multivariable models described above, the lowest predicted proportions of being very likely to receive a future RSV vaccine during pregnancy were among those who thought RSV illness was not serious (35% overall, 37% with

child(ren), 32% without child(ren), $P < .001$; Fig 1). Similarly low predicted proportions were observed among those who did not receive vaccines during past pregnancies in the subsample of respondents with child(ren) (33%).

Although limited by small subgroup sizes and not reaching statistical significance in regression models (Table 2), low predicted probabilities of future RSV vaccination during pregnancy were observed among respondents without insurance in the model without child(ren) (30%), and the highest predicted proportions were among American Indian/Alaska Native respondents in the overall sample and the subsample with child(ren) at home (70%; 72%), with lower rates seen among those without child(ren) in the home.

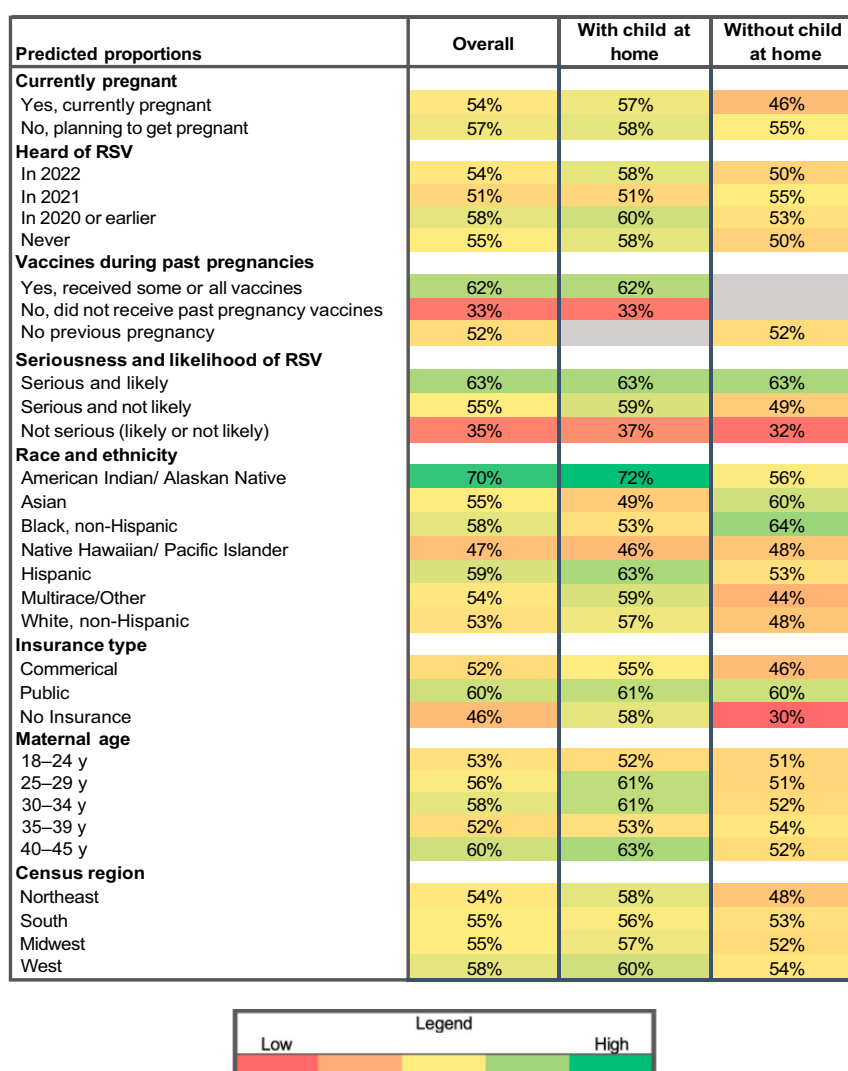


FIGURE 1

Heatmap of predicted proportions of respondents indicating they were “very likely” to receive a future RSV vaccine during pregnancy based on multivariable regressions, among overall respondents, respondents with child(ren), and respondents without child(ren). Lower predicted proportions have darker red hues; higher predicted proportions have greener hues.

DISCUSSION

The recent FDA approval and subsequent recommendation by the CDC of an RSV vaccine for administration during pregnancy is an advancement in the prevention of RSV in young infants most at risk for serious illness. Our nationwide survey, which revealed a majority interest in an RSV vaccine during pregnancy among people pregnant or trying to become pregnant, provides insights into attitudes among potential recipients of this new preventive strategy. Perceptions of pregnant people are important for public health and health care advocacy designed to reach pregnant people to inform their decision-making.

Our results of likely future RSV vaccination rates are consistent with the authors of other studies, who found suboptimal rates of vaccine uptake among pregnant individuals. In a recent survey fielded to pregnant persons by the CDC, 43% reported receiving the influenza vaccine and 55% reported receiving the Tdap vaccine,⁷ which generally suggest missed opportunities to realize the full benefits of vaccination during pregnancy in protecting the health of the future child.

Overrepresented among those who said they are not very likely to get an RSV vaccine during pregnancy were respondents who perceive RSV illness for children as not serious and those who do not yet have a child at home. It is possible that individuals without a child at home have little to no experience with RSV because RSV illness is most serious in early childhood. These findings suggest that education efforts regarding RSV infection prevention and the potential harms of RSV among infants <6 months old will likely be important components of an RSV vaccination promotion campaign. The youngest infants are among the most vulnerable to RSV infection,² and vaccination during pregnancy has been demonstrated to help prevent RSV-related hospitalizations.¹¹ There is also evidence that pregnant individuals appreciate receiving information on the safety and benefit of immunizations for their infant as part of conversations about their decision to receive vaccinations during pregnancy.¹⁹

Other investigators have reported that Black and Hispanic pregnant persons express lower vaccine confidence, including regarding influenza and Tdap vaccines.²⁰ Interestingly, in our findings, non-Hispanic Black individuals without a child at home had significantly higher odds of reporting they would be very likely to get a future RSV vaccine during pregnancy when compared with non-Hispanic white individuals. American Indian and Alaskan Native individuals had somewhat higher odds of reporting they would be very likely to get a future RSV vaccine during pregnancy among the overall sample and had among the highest predicted proportions of any subgroup. This particular finding may reflect the historically high RSV-

related hospitalization rates among American Indian and Alaskan Native children²¹ and that prevention of RSV in Alaskan Natives is already a priority of the Arctic Investigations Program of the CDC.²²

Our study should be considered within the context of some limitations. First, we drew from the previous vaccine literature and our own published work in developing our survey items;^{15,23} however, we could not validate our survey measure on the likelihood of receiving a future RSV vaccine during pregnancy because no gold standard was available at the time of survey fielding. Second, our survey was conducted in spring 2023 before the RSV vaccine had been approved or recommended for pregnant people, and perceptions may have changed once the vaccine was approved and recommended. Third, the fielding of the survey took place before research results on the effectiveness of the RSV vaccine given during pregnancy were publicly available, and the effectiveness was not discussed or presented to survey respondents. Additionally, our fielding period also immediately followed the media coverage of the “triple-demic” in the fall and winter of 2022 to 2023,¹³ which may have raised awareness of RSV among the general public. Although we used purposeful sampling to be representative of the racial and ethnic demographic characteristics of the US childbearing population, our results may be biased in unobservable ways regarding individuals and their attitudes about RSV illness or vaccination during pregnancy. The proportion of respondents who indicated that they are likely to get vaccinated against RSV during pregnancy in comparison to the proportion of respondents who were vaccinated against influenza and Tdap during pregnancy suggests that such biases are likely small if they exist at all. Moreover, the similarity of the proportion of our respondents who reported they had been vaccinated against Tdap and flu in previous pregnancies suggests that our sample reflected a broad and generally representative cross-section of persons of childbearing age in the US population.

CONCLUSIONS

Overall, in March 2023, the majority of respondents who were pregnant or trying to become pregnant said that they were very likely to receive a future RSV vaccine during pregnancy. This interest was greatest among those who perceive RSV illness among children as serious and likely and those who have children at home. Educational efforts about protection against RSV illness in infants through vaccination during pregnancy and the consequent positive health implications for children may be a key component of public health and health care strategies to encourage RSV vaccination among pregnant individuals.

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ABBREVIATIONS

CDC: Centers for Disease Control and Prevention

FDA: Food and Drug Administration

RSV: respiratory syncytial virus

Tdap: tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis

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REFERENCES

1. Hall CB, Weinberg GA, Iwane MK, et al. The burden of respiratory syncytial virus infection in young children. *N Engl J Med*. 2009;360(6):588–598
2. Rha B, Curns AT, Lively JY, et al. Respiratory syncytial virus-associated hospitalizations among young children: 2015–2016. *Pediatrics*. 2020;146(1):e20193611
3. Piedimonte G. Respiratory syncytial virus and asthma: speed-dating or long-term relationship? *Curr Opin Pediatr*. 2013;25(3):344–349
4. Coutts J, Fullarton J, Morris C, et al. Association between respiratory syncytial virus hospitalization in infancy and childhood asthma. *Pediatr Pulmonol*. 2020;55(5):1104–1110
5. ACOG Committee opinion no. 741: maternal immunization. *Obstet Gynecol*. 2018;131(6):e214–e217
6. Centers for Disease Control and Prevention. Pregnancy and vaccination: vaccines during and after pregnancy. Available at: <https://www.cdc.gov/vaccines/pregnancy/vacc-during-after.html>. Accessed October 17, 2023
7. Razzaghi H, Kahn KE, Calhoun K, et al. Influenza, Tdap, and COVID-19 vaccination coverage and hesitancy among pregnant women - United States, April 2023. *MMWR Morb Mortal Wkly Rep*. 2023;72(39):1065–1071
8. Razzaghi H, Kahn KE, Black CL, et al. Influenza and Tdap vaccination coverage among pregnant women - United States, April 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(39):1391–1397
9. The IMPact-RSV Study Group. Palivizumab, a humanized respiratory syncytial virus monoclonal antibody, reduces hospitalization from respiratory syncytial virus infection in high-risk infants. *Pediatrics*. 1998;102(3):531–537
10. Medimmune, LLC, US Food and Drug Administration. Synagis (palivizumab) [package insert]. Available at: https://www.accessdata.fda.gov/drugsatfda_docs/label/2017/103770s5200lbl.pdf. Accessed October 6, 2021
11. Food and Drug Administration. Food and Drug Administration approves first vaccine for pregnant individuals to prevent RSV in infants. Available at: <https://www.fda.gov/news-events/press-announcements/fda-approves-first-vaccine-pregnant-individuals-prevent-rsv-infants>. Accessed October 2, 2023
12. Pfizer. Pfizer announces positive top-line data of phase 3 global maternal immunization trial for its bivalent respiratory syncytial virus (RSV) vaccine candidate. Available at: <https://www.pfizer.com/news/press-release/press-release-detail/pfizer-announces-positive-top-line-data-phase-3-global>. Accessed November 30, 2022
13. Rees A; CNN. What to know about the triple threat of influenza, COVID and RSV. Available at: <https://www.cnn.com/2022/12/09/health/covid-influenza-rsv-vaccine-pandemic-wellness/index.html>. Accessed October 27, 2023
14. Jenco M; AAP News. CDC OKs maternal RSV vaccine, provides updated guidance for nirsevimab. Available at: <https://publications.aap.org/aapnews/news/26165/CDC-OKs-maternal-RSV-vaccine-provides-updated>. Accessed October 2, 2023
15. Alfieri NL, Kusma JD, Heard-Garris N, et al. Parental COVID-19 vaccine hesitancy for children: vulnerability in an urban hotspot. *BMC Public Health*. 2021;21(1):1662
16. Zhang C, Conrad FG. Speeding in Web Surveys: the tendency to answer very fast and its association with straightlining. *Surv Res Methods*. 2014;8(2):127–135
17. United States Census Bureau. Geographic levels. Available at: https://www.census.gov/programs-surveys/economic-census/guidance-geographies/levels.html#par_textimage_34. Accessed November 7, 2023
18. March of Dimes. Births - data for United States. Available at: <https://www.marchofdimes.org/peristats/data?reg=99&top=2&stop=10&lev=1&slev=1&obj=3>. Accessed October 27, 2023
19. Rand CM, Olson-Chen C. Maternal vaccination and vaccine hesitancy. *Pediatr Clin North Am*. 2023;70(2):259–269

20. Dudley MZ, Limaye RJ, Salmon DA, et al. Racial/ethnic disparities in maternal vaccine knowledge, attitudes, and intentions. *Public Health Rep.* 2021;136(6):699–709
21. Atwell JE, Hartman RM, Parker D, et al. RSV among American Indian and Alaska Native children: 2019 to 2020. *Pediatrics.* 2023;152(2):e2022060435
22. Centers for Disease Control and Prevention. RSV in Alaska Native infants. Available at: <https://www.cdc.gov/rsv/research/aip.html>. Accessed October 9, 2023
23. Heffernan ME, Bendelow A, Kociolek LK, et al. Targeted vaccine messaging to promote COVID-19 vaccines for children and youth. *Pediatrics.* 2023;151(6):e2022059191