

Perceptions of Vaccines During Pregnancy

Survey of U.S. Patients & Providers

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Background

Maternal vaccinations play a critical role in helping to prevent the spread of infectious diseases among mothers and their babies. Vaccines received during pregnancy help mothers develop antibodies that then get passed onto babies. These antibodies protect the mother and provide newborns with immunity and help protect them from severe illness and vaccine-preventable diseases.¹

Currently, the US Centers for Disease Control and Prevention (CDC) recommends that pregnant people get seasonal influenza (flu), Tdap and COVID-19 vaccines to help protect themselves and their babies.² However, despite these public health recommendations and widespread evidence supporting the safety and effectiveness of maternal vaccines,³ there continues to be suboptimal levels of vaccinations among pregnant people.

Immunization rates overall declined since the start of the COVID-19 pandemic.⁴ However, recent data from the CDC shows declining rates of immunization among pregnant people specifically, as highlighted below.

Addressing the suboptimal levels of maternal vaccinations first requires understanding current perceptions towards vaccines held by pregnant and post-partum people and the providers who recommend vaccination. Results from this survey aim to deepen understanding around the attitudes and barriers towards vaccines during pregnancy and help inform next steps for public health experts, policymakers and other stakeholders involved in the maternal immunization space. These findings will be important when considering the Inflation Reduction Act and new laws that will take effect in 2023 that are designed to eliminate cost-sharing.

DATA FROM THE CDC⁵

49.6% of pregnant people reported **receiving a flu vaccine**, compared to **54.5%** in the previous season

44% of pregnant people reported **receiving the Tdap vaccine** during pregnancy, compared to **53.5%** in the previous season

Only 22.2% of pregnant people reported receiving **both the Tdap and flu vaccine** | **54.5%** of pregnant people reported completing their primary COVID-19 vaccine series

Additionally, **Black women saw lower rates of Tdap coverage during pregnancy** compared to other racial groups, **pointing to continued disparities in maternal vaccinations**

¹ U.S. Department of Health & Human Services. (2021, April 28). *Vaccines for Pregnant Women*. <https://www.hhs.gov/immunization/who-and-when/pregnant/index.html>
² Centers for Disease Control and Prevention. (2021, November 9). *Vaccines During and After Pregnancy*. <https://www.cdc.gov/vaccines/pregnancy/vacc-during-after.html>
³ Centers for Disease Control and Prevention. (2021, November 22). *Vaccine Safety for Moms-To-Be*. <https://www.cdc.gov/vaccines/pregnancy/vacc-safety.html#>
⁴ Bramer C.A., Kimmins L.M., Swanson R, et al. (2020, May 18). Decline in Child Vaccination Coverage During the COVID-19 Pandemic – Michigan Care Improvement Registry, May 2016-May 2020. *Morbidity and Mortality Weekly Report (MMWR)*, 69(20), 630-631. <http://dx.doi.org/10.15585/mmwr.mm6920e1>
⁵ Centers for Disease Control and Prevention. (2022, October 4). *Flu, Tdap, and COVID-19 Vaccination Coverage Among Pregnant Women – United States, April 2022*. <https://www.cdc.gov/flu/fluview/pregnant-women-apr2022.htm>

Key Insights

A previous white paper on working toward solutions to the policy, data and implementation challenges driving suboptimal maternal vaccination rates, [Improving Maternal Immunization Status](#), was published in September 2021 by an author group of 15 leading organizations in the maternal immunization space.

The paper explored the landscape and challenges that undermine longstanding efforts to address the most persistent barriers to maternal immunization in the United States. Following the white paper publication, survey research was conducted among two separate and discrete survey populations in the United States to better understand the experiences of pregnant people, those who recently gave birth, and the providers who make vaccination recommendations during pregnancy.

Among renewed discussion around the importance of vaccinations as well as the suboptimal levels of maternal vaccinations, the survey explores the

perceptions of maternal vaccinations—particularly as they relate to COVID-19 vaccines during pregnancy, routine vaccines recommended during pregnancy (flu and Tdap), and potential new maternal vaccines in development such as respiratory syncytial virus (RSV) and group B streptococcus (GBS), as well as general awareness of how maternal vaccines protect the health of mothers and babies.

For the purposes of this report, audiences are referred to as follows: pregnant people, new mothers (those who have given birth in the last year) and healthcare providers (HCPs). Unless otherwise specified, both patients and respondents refer to pregnant people and new mothers as a collective. Providers refers to the HCPs routinely providing care to pregnant people and new mothers. Provider survey respondents included OB/GYNs, general/family practice physicians, and maternal-fetal medicine specialists, nurses, and pharmacists.

HIGHLIGHTS

Patients

Access to Prenatal Care

- More pregnant people report receiving the flu and Tdap vaccine compared to COVID-19 vaccines.
 - » A slightly higher proportion of people who are currently pregnant report having received, or are planning to receive, the flu (58%) and Tdap (61%) vaccine in comparison to only 44% reporting they have already received or plan to receive COVID-19 vaccines.
- Racial and geographic disparities exist when it comes to accessing maternal care for pregnant people.
 - » Although pregnant people and new mothers report they are satisfied with the prenatal care they received during their pregnancy and that it was very easy to access prenatal care, experiences vary by racial group. Only 46% of Hispanic and 51% of Black respondents report having easy access to prenatal care when compared to 67% of non-Hispanic white respondents.
 - » The largest disparity is among the 18% of respondents who identified as living in a rural area who had received a COVID-19 vaccine during pregnancy compared to 42% in urban and suburban areas. Rural areas also show lower rates of flu vaccination (25% in rural areas vs 49% urban areas), but no statistically significant disparity exists for the Tdap vaccine.

Patient Attitudes Towards Maternal Vaccinations

- Pregnant people and new mothers understand the benefits of getting vaccinated; however, the safety and potential side effects of maternal vaccines are reported as perceived barriers to immunization.
 - » Whether or not the respondents report having received vaccines during pregnancy, most report understanding the benefits of getting vaccinated—such as the role vaccines can play in protecting both mother and baby. For example, a majority (about 8 in 10) say the vaccines help protect the mother and baby from serious and potentially dangerous diseases.
 - » Safety and side effects of the vaccine are consistently cited as the most common concern and perceived barrier to immunization by pregnant people.

Barriers to Care for Patients

- Medicaid patients are less likely to have received a vaccine in their current pregnancy than those insured through the exchanges.
 - » While out-of-pocket costs and insurance status are not reported as barriers that impact vaccination rates, Medicaid patients are less likely to have received a vaccine in their current pregnancy (35% flu, 39% Tdap, 32% COVID-19) than those insured through the exchanges (48% flu, 44% Tdap, 50% COVID-19).

Trusted Sources of Information for Patients

- While a CDC recommendation is considered a credible source of information, survey results show it had no incremental benefit beyond the recommendation of a patient's healthcare provider.
 - » Pregnant people want to know more about the safety of vaccines from providers and rely on their recommendations to take vaccines. CDC is also considered a prominent source of information; however, providers are still the most important voice, as a CDC recommendation does not enhance vaccine uptake when combined with a provider recommendation.

Providers' Perceptions of Vaccines

- Providers are regularly recommending flu, Tdap and COVID-19 vaccines.
 - » Most providers who participated in the survey routinely recommend the flu (96%), Tdap (91%) and COVID-19 (90%) vaccines to their pregnant patients.

Providers' Barriers to Providing Care

- Top barriers to not administering COVID-19 vaccines are stocking and inventory management.
 - » Almost all providers stock and administer the flu (91%) and Tdap (89%) vaccines, while significantly fewer providers administer COVID-19 vaccines (60%) and cite stocking and inventory management as the top reasons for not doing so.
- Financial and administrative burdens were the top barriers for providers who do not accept publicly funded insurance plans such as Medicaid.
 - » Most providers (82%) accept public insurance plans, including Medicaid. However, among those who do not accept publicly funded insurance plans, providers cited financial and administrative burdens as the top two barriers.

Sources of Information for Providers

- Providers need more resources and information to make recommendations about vaccines during pregnancy.
 - » While providers rely on public health agencies and medical associations to gather information and guidance on vaccine recommendations, close to 4 in 10 say they need additional information to make recommendations about vaccines during pregnancy.

Barriers to Reporting to State Immunization Systems

- In addition to a patchwork of requirements for reporting to state immunization systems, providers are facing interoperability with entering and sharing data across IIS platforms.
 - » While 66% of providers say that the state they operate in requires them to report COVID-19 vaccinations to a state immunization system or registry, only 38% and 43% of providers said their state required them to report flu and Tdap vaccinations, respectively, to a state immunization system.
 - » Nearly 40% of providers report facing some interoperability challenges and issues for entering and sharing data across various IIS Platforms.

Summary of Findings

I. MATERNAL HEALTH EXPERIENCE AND VACCINATION STATUS

Both pregnant people and new mothers say they are very satisfied with their prenatal experience, with 56% saying they have been very satisfied, and 86% being fully satisfied overall. Although most respondents say that it has been very easy to access the prenatal care they needed (60%), the experience differs by ethnic/racial groups. For example, only 46% Hispanic respondents and 51% Black respondents report having easy access when compared with 67% non-Hispanic white respondents.

COVID-19 vaccinations lag behind flu and Tdap vaccinations among both pregnant people and new mothers. Additionally, slightly more than half of those who were previously pregnant say that they received a flu vaccine (52%) and Tdap vaccine (57%) during their last pregnancy. However, for their current pregnancy, a slightly higher proportion say that they either have already received, or plan to receive, the flu vaccine (58%) and Tdap vaccine (61%).

Total Population	Base N	Flu	Tdap	COVID-19
	% Yes only	A	B	C
Did you receive any of the following vaccines during your previous pregnancies? (Q5)	N=719	52% ^C	57% ^C	39%
Have you received any of the following vaccines during this pregnancy? (Q6)	N=853	39%	43%	36%
Are you planning on getting any of the following vaccines during this pregnancy? (Q7)	N=503	19%	18%	8%

In comparison, only 44% of pregnant people say they have already received a COVID-19 vaccine (36%), or plan to receive it (8%). Furthermore, among those who have received the COVID-19 vaccine, they are more likely to have received the flu (76%) and Tdap (68%) vaccine.

Among respondents who received the COVID-19 vaccine

Have you received any of the following vaccines during this pregnancy? (Q6) N=311	Flu	Tdap
Total	76%	68%
Pregnant people	65%	49%
New mothers	82%	77%

COVID-19 vaccination status is correlated with socioeconomic status with more than half of higher-income (\$100k+) and more educated (MA or more advanced degree) respondents reporting having received the COVID-19 vaccine during their pregnancy. Asians are more likely to receive any maternal vaccine, including COVID-19, than any other group (70% received COVID-19). Hispanics (49%) are also statistically more likely than non-Hispanic whites (33%) and Blacks (24%) to have received the COVID-19 vaccine during their pregnancy.

The biggest disparity is among the respondents who identified as living in a rural area with only 18% who had received a COVID-19 vaccine during pregnancy compared to 42% in urban and suburban areas. Rural areas also show lower rates of flu vaccination for their current pregnancy (25% in rural areas vs 49% urban areas), but no statistically significant disparity exists for the Tdap vaccine.

II. INFORMATION SOURCES AND TRUSTED MESSENGERS

Overview

In an era of rampant vaccine misinformation, it is important to identify the sources of information pregnant people trust. **Healthcare providers, from family physicians to midwives, are consistently the most trusted sources of information for patients.**

- 86% trust family doctors or physicians
- 86% trust obstetricians and gynecologists
- 84% trust pediatricians
- 80% trust nurses, certified nurses, and midwives

Notably, religious leaders or faith-based organizations (34%) and celebrities or mom influencers/bloggers on social media (19%) scored relatively low on trust among patients.

The most reliable channels of information are pregnancy apps and public health agencies. Perhaps contrary to popular perception, few rely on social or traditional media for reliable information.

- More than half of respondents rely on pregnancy apps (58%) and public health agencies like CDC or FDA (54%) to get information about pregnancy and maternal care.
- Few patients rely on online support groups (29%), social media (22%), traditional media (20%) or pharmaceutical company websites (18%).

While **CDC is a prominent and credible source of vaccine information, survey results show it has no incremental benefit beyond the recommendation of the patient's healthcare provider.** Specifically, a vaccine recommendation by both the CDC and healthcare provider yields no difference to a patient's likelihood in receiving the vaccine (69% likely), compared to a recommendation by the healthcare provider alone (69%). Conversely, likelihood to get vaccinated falls by 9-percentage points if the recommendation is from the CDC alone.

How likely are you to get any vaccine while pregnant if it was recommended by (Q73) N=853	Total Likely (4–3)	Total Unlikely (1–2)
Your healthcare provider	69%	20%
Both the CDC and your healthcare provider	69%	21%
The Centers for Disease Control and Prevention (CDC)	60%	28%

The Important Role of the OBGYNs

OBGYNs are the dominant and most credible source of providing vaccine information to respondents and this holds true for all three vaccines. Approximately 3 in 4 pregnant people are receiving information about vaccines during pregnancy from their OBGYN.

Moreover, the recommendation of an OBGYN is more likely than any other source to have the most impact on a pregnant patient's decision to get vaccinated. For instance, 51% of pregnant patients receiving the Tdap vaccine say their OBGYN's recommendation had the most significant impact. Family doctors came in second, with only 11% of respondents who said their family physician had the most impact on their decision.

Furthermore, respondents are more comfortable talking to their OBGYN (87% comfortable) about questions or concerns about their pregnancy than other providers and sources. OBGYNs are also the only source of information that most respondents (53%) say they trust greatly.

OBGYNs play an especially prominent role with the Tdap vaccine—as the top information source, the greatest impact on vaccination decision, and the most common location to be recommended and receive the vaccine. While about half of pregnant people say they received information about the flu (47%) and COVID-19 (54%) vaccines from their family doctor, they are statistically less likely to have received information about the Tdap vaccine from their family doctor (38%).

Whose advice had the most significant impact on your decision to get the (Flu/Tdap/ COVID-19) vaccine during pregnancy? You may select up to two. (Q14,34,58)	% Most Impactful		
	Flu (n=284)	Tdap (n=520)	COVID-19 (n=248)
	A	B	C
Obstetrician/Gynecologist	41% ^C	51% ^{AC}	29%
Family doctor or physician	16% ^B	11%	20% ^B
Friends or family	9% ^B	3%	5%
Nurse/Certified nurse/Midwife	7%	9% ^C	4%
Centers for Disease Control and Prevention (CDC)	3%	4%	12% ^{AB}
Pediatrician	3%	4%	4%
Academics and medical experts from universities	3% ^B	1%	3% ^B
Religious leaders or faith-based organizations	3% ^B	1%	3% ^B
International health authorities, like the World Health Organization (WHO)	2%	2%	4%
Companies or scientists involved in developing the vaccines	2%	1%	2%
Pharmacists	1%	2%	3%
Online patient resources	1%	1%	3% ^B
Food & Drug Administration (FDA)	1%	3%	0%
Local health agencies and authorities	1%	1%	1%
Celebrities or mom influencers/bloggers on social media	1%	0%	2%
Ancillary care providers (Lamaze counselors, doulas, etc.)	0%	1%	0%

One out of every two pregnant patients (50%) report getting the Tdap vaccine at their OBGYN's office (compared to 39% for the flu vaccine and 10% for COVID-19 vaccines). Additionally, 77% say they received the Tdap vaccine at the time it was recommended and 81% received it at the place it was recommended, significantly higher than for the other vaccines. Of those who received the vaccine where it was recommended, nearly 6 in 10 report receiving it at the OBGYN's office (56%).

When it comes to the COVID-19 vaccine, OBGYNs are still more likely to have played a decisive role in pregnant person's decision, but other sources come close: 20% for family doctors and 12% for the CDC. Public health sources including the CDC—which few patients report receiving information from regarding flu and Tdap vaccines—are often reported as sources of information for COVID-19 vaccines.

Information on Vaccines

While pregnant people are receiving information about vaccine benefits, they are receiving less around safety and side effects. Most pregnant people say they received information about the benefits to the mother of the three vaccines. They are more likely to receive information about the benefits to the child of the Tdap vaccine (76%) compared to the flu (62%) vaccine. Information on safety, side effects and how the vaccine works lags behind information about vaccine benefits by nearly half.

What kind of information did you receive about the vaccine during this pregnancy?	Flu	Tdap	COVID-19
	A	B	C
Benefits of the vaccine to the mother	69%	64%	61%
Benefits of the vaccine to the child	62% ^C	76% ^{AC}	49%
Information on safety of the vaccine	43%	50%	47%
Potential side effects of the vaccine	42%	42%	37%
Information on how the vaccine works	38%	38%	36%
CDC recommendations	33%	32%	51% ^{AB}
Where to get the vaccine	29%	-	-
Cost of the vaccine	17%	16%	13%

Statistical differences are noted within the table.

III. PATIENTS' PERCEPTIONS OF BARRIERS TO PRENATAL CARE

Cost

While pregnant people face some perception barriers such as safety and side effects, **cost is not a significant barrier**. Few pregnant people report having to pay any out-of-pocket costs associated with receiving vaccines during pregnancy (8% flu, 12% Tdap, 6% COVID-19). Furthermore, of those who do have an out-of-pocket cost, only a fraction say that the cost mattered to their decision. However, cost barriers do exist for some pregnant people.

Insurance

While insurance status does not play a significant role in vaccination rates, Medicaid patients are less likely to have received a vaccine in their current pregnancy than patients covered by the exchanges.

The proportion of insured pregnant people mirrors the broader public (85% insured). Vaccination rates for all three vaccines do not differ significantly for the uninsured vs. insured pregnant people. Notably, Medicaid patients are less likely to have received a vaccine in their current pregnancy (35% flu, 39% Tdap, 32% COVID-19) than those privately insured through the exchanges (48% flu, 44% Tdap, 50% COVID-19). Nine percent of the respondents say they were not very or not at all confident that their health coverage would allow them to afford the health care they need. Indeed, more patients who purchased health insurance through the exchanges (15%) say they were less confident than those with other forms of insurance (insurance plan through employer 6% and Medicaid 2%).

Safety

Perceptions and concerns around vaccines are the major barriers to vaccines for pregnant people. Safety and side effects are consistently the most common perception barriers. Safety risks to the baby are a concern for about 40% of respondents as it relates to flu and Tdap, and 55% for the COVID-19 vaccine. Pregnant people are even more concerned about COVID-19 side effects (54% agree), compared to side effects of the flu and Tdap vaccines (35% and 37%).

Efficacy

Trust and confidence in COVID-19 vaccine development, efficacy and information are barriers.

About one-third of pregnant people do not trust vaccines generally during pregnancy, but the data suggests COVID-19 negatively impacted overall trust in vaccines during pregnancy. Pregnant patients were asked to answer the same question—"I do not trust vaccines during pregnancy"—in the context of one of three vaccines. In the context of flu, 34% say they did not trust vaccines during pregnancy and 32% say the same in the context of Tdap. However, 40% say they did not trust COVID-19 vaccines during pregnancy, a statistical difference.

IV. PATIENTS' ATTITUDES TOWARDS PRENATAL VACCINES

Though about one-third of pregnant patients expressed mistrust of vaccines during pregnancy, messaging on the importance of maternal vaccination resonates and respondents embrace key arguments on reasons to take the vaccines. Large majorities of pregnant people (at least 75%) agree with key arguments around importance of protecting mothers and babies, importance to public health and confidence in efficacy for both mother and baby. Among the top arguments for the Tdap vaccine is the seriousness of the diseases it prevents (84% agree).

I got/will get the (Flu/Tdap/COVID-19) vaccine because:	Flu (n=248)	Tdap (n=547)	COVID-19 (n=226)
	% Total Agree (5–4)		
	A	B	C
I believe that protecting myself and my baby from the (Flu/Tdap/COVID-19) is important	90%	85%	85%
I believe getting the vaccine is important for public health	84% ^B	77%	82%
I believe the (Flu/Tdap/COVID-19) vaccine will be helpful in protecting my baby	83% ^C	84% ^C	75%
I believe the (Flu/Tdap/COVID-19) vaccine will be helpful in protecting me	83%	77%	81%
My doctor/healthcare practitioner has recommended I get the (Flu/Tdap/COVID-19) vaccine	78%	83% ^C	74%
I believe that (Flu/Tdap/COVID-19) during pregnancy is a serious and potentially dangerous disease	75%	84% ^A	81%
There is enough data about its safety and how the (Flu/Tdap/COVID-19) vaccine works	75% ^C	75% ^C	65%
I think there is no harm in getting the (Flu/Tdap/COVID-19) vaccine since it has been recommended by the CDC	70% ^B	62%	70% ^B
My friends and family have received the (Flu/Tdap/COVID-19) vaccine	69% ^B	58%	72% ^B

However, “recommended by the CDC” is a less compelling argument, especially for the Tdap vaccine. Although most pregnant people (65%) believe there is enough data on the safety of the COVID-19 vaccine, there is statistically significantly less confidence for that vaccine than for the flu and Tdap vaccines (75% each).

Overall, there are clear disparities in perceptions around the safety and relevance of the flu, Tdap, and COVID-19 vaccines. Less respondents are compelled to get the Tdap vaccine (77%) because of its importance to public health compared to flu (84%) and COVID-19 (82%), suggesting patients are less likely to connect the Tdap vaccine to public health in comparison to flu and COVID-19. Although a nearly equal proportion are moved by the argument that the vaccine would be helpful in protecting their baby when it came to flu (83%) and Tdap (84%), the results dip to 75% when it came to the COVID-19 vaccine.

V. PROVIDERS' PERCEPTIONS OF MATERNAL VACCINATIONS

Almost all providers surveyed routinely recommend the flu (96%), Tdap (91%) and COVID-19 vaccines (90%) to their patients. Male providers are slightly more likely to recommend a vaccine when compared to their female counterparts.

Which of these vaccines do you recommend to your pregnant patients?	Male HCPs (n=227)	Female HCPs (n=171)
	A	B
Flu	98% ^B	94%
Tdap	91%	91%
COVID-19	91%	88%

Providers strongly agree with all key arguments about the benefits of taking the vaccines. Among the top reasons, the benefits of flu and Tdap vaccines are prominent, with a majority of 7 in 10 believing that these vaccines are safe for pregnant people and the benefits outweigh the risks involved. Although most providers believe there is enough data on the safety and efficacy of flu (70%) and Tdap (64%) vaccines,

To what extent do you agree or disagree with the following statements about the (Flu/Tdap/COVID-19) vaccine?	% Strongly Agree (5) (n=409)		
	Flu	Tdap	COVID-19
	A	B	C
I believe (Flu/Tdap/COVID-19) vaccines are safe for pregnant patients	76% ^{BC}	67% ^C	50%
The benefits of getting the (Flu/Tdap/COVID-19) vaccine during pregnancy outweighs the risks involved	73% ^{BC}	68% ^C	55%
There is sufficient data regarding the (Flu/Tdap/COVID-19) vaccine's safety and efficacy	70% ^{BC}	64% ^C	41%
I believe (Flu/Tdap/COVID-19) vaccination during pregnancy helps in protecting the baby	69% ^C	67% ^C	53%
I believe getting the (Flu/Tdap/COVID-19) vaccine during pregnancy is important for public health	67% ^{BC}	57%	55%
I believe getting the (Flu/Tdap/COVID-19) vaccine is a social responsibility for every pregnant patient	54% ^{BC}	48%	47%

there is statistically significantly less confidence for the COVID-19 vaccine (41%).

Furthermore, among those who administer the three vaccines, almost all report them out to various registries and IIS platforms. Nearly 40% of providers report facing some interoperability challenges and issues for entering and sharing data across various IIS platform.

While 66% of providers say that the state they operate in requires them to report COVID-19 vaccinations to a state immunization system or registry, only 38% and 43% of providers said their state required them to report flu and Tdap vaccinations, respectively, to a state immunization system.

Does the state you operate in require you to report (Flu/Tdap/COVID-19) vaccinations to a state immunization system or registry?	Flu (n=366)	Tdap (n=355)	COVID-19 (n=243)
	A	B	C
Yes always	33%	35%	53% ^{AB}
Yes, sometimes	5%	8%	13% ^{AB}
No	36% ^C	32% ^C	12%
Not sure	27% ^C	25%	21%

Providers cite public health agencies as the most reliable source of information. Almost all (91%) of the providers rely on public health agencies like the CDC, FDA and WHO to gather information about prenatal care. **Equally trusted is the information provided by medical associations like the AMA, ACP and ACOG.** The resources that are published and shared through print and media are most sought after by providers to refer guidance on vaccine recommendations. While about half of providers say they have all the information on vaccines to make recommendations to their patients, 4 in 10 say they need additional information and resources.

To help promote the administration of prenatal vaccines, providers say unified messaging and incentivizing providers who administer vaccines as a part of prenatal care would be the top two most impactful solutions to implement.

Here are a few solutions that can promote the administration of prenatal vaccines. Which of these do you think would be the most impactful solutions to implement? You may select up to two options. Q49 (n=409)	Most Impactful	2nd Most Impactful
Unified messaging to communicate the importance of prenatal vaccines to patients	21%	13%
Incentivize payments to healthcare providers who administer the flu/Tdap vaccine as part of prenatal care	20%	14%
Make Prenatal Immunization Status an HEDIS measure and incentivize healthcare providers to administer vaccines	11%	10%
Providing no cost vaccines to Medicaid patients	9%	9%
Have a designated in-clinic vaccine manager	8%	7%
Authorize HHS grants in coordination with CMS, CDC, and ONC, to enhance uptake, use, and interoperability of state and local IIS with provider health record systems	7%	6%
Train patient facing staff on the importance of prenatal immunization	6%	11%
Allow healthcare providers to bill health plans outside of capitation rates	6%	10%
Offer continuing education credits for healthcare providers who take courses related to prenatal immunization	5%	8%
Use of vaccine management services, or third-party technology platforms that provide end-to-end vaccine management	5%	6%
Provide starter doses to clinics and encourage group purchasing	2%	7%

VI. PROVIDERS' BARRIERS TO IMMUNIZATION

Fewer providers stock and administer the COVID-19 vaccine. While most providers routinely stock and administer the flu and Tdap vaccines on site, they are significantly less likely to stock a COVID-19 vaccine and nearly 6 in 10 report the cost of stocking the vaccine and managing inventory as their top reason among many other reasons for not doing so. Of those who do not administer vaccines, almost all provide a referral to their patients to get the vaccine at a different location. Local pharmacy is the top choice for providers.

Does your clinic/practice/hospital/pharmacy stock and administer the (Flu/Tdap/COVID-19) vaccine on site? (n=409)	Flu	Tdap	COVID-19
	A	B	C
Yes always	78% ^C	76% ^C	45%
Yes, sometimes	13%	13%	15%
No	8%	11% ^A	37% ^{AB}

Additionally, most providers (82%) accept public insurance plans, including Medicaid. However, among those who do not accept publicly funded insurance plans, providers cited financial and administrative burdens are the top two barriers.

Why are publicly funded insurance plans not accepted?	Yes	No
Financial burdens—lower reimbursements rates	85%	14%
Administrative burdens—additional paperwork, resubmissions, negotiations	84%	15%
Do not offer enough compensation	77%	22%
Requires prior authorization to provide basic health services	56%	42%
High costs passed on to the patients	27%	71%
Not sure	3%	7%

Methodology

The survey for pregnant people and providers was designed to collect reliable data on the perceptions and behaviors of patients around maternal vaccinations and prenatal care. A literature review was conducted around existing and relevant academic surveys, which helped to inform the questionnaire design.

The survey for pregnant people was conducted June 23–July 19, 2022 by Ipsos using a combination of the probability-based KnowledgePanel® and sample from opt-in panel suppliers. The survey is based on a nationally representative probability sample of 853 pregnant people and women who are in the post-partum recovery period, aged 19–49. The sample included 574 pregnant people and 279 women within the first year after birth.

The survey was conducted using both KnowledgePanel, the largest and most well-established online probability-based panel that is representative of the U.S. adult population, and off-panel respondents. The KnowledgePanel recruitment process employs a scientifically developed addressed-based sampling methodology using the latest Delivery Sequence File of the USPS—a database with full coverage of all delivery points in the United States. As a result of recruitment and sampling methodologies, samples from KnowledgePanel cover all households regardless of their phone or internet status and findings can be reported with a margin of sampling error and projected to the general population. Opt-in panel sample was calibrated and combined with the KnowledgePanel sample to obtain total.

The online study was conducted in both English and Spanish and took an average of 15 minutes for KP and opt-in respondents. The data were weighted to adjust for age, race/ethnicity, education, census region, and metropolitan status. The demographic benchmarks came from the 2020 National Health Interview Survey (NHIS). The weighting categories were as follows:

- Age (18-34, 45-49)
- Race/Ethnicity (Black, Hispanic, Other)
- Education (High School or Less, Some College, Bachelor's degree or higher)

- Region (Northeast, Midwest, South, West)
- Metro status (Metro, non-Metro)

Given the survey length, we adopted the split questionnaire design (SQD). Adopting SQD helped reduce the individual questionnaire length while collecting data on questions from a longer questionnaire. In this method, we allocated three sections—focusing on the individual vaccine batteries—Influenza, Tdap, and COVID-19. Each respondent answered questions about two vaccines—Tdap and Influenza or the COVID-19 batteries. The base sample size for each of the vaccine batteries is as follows: Influenza (N =426), Tdap (N=853), COVID-19 (N=427).

The largest market research panel of health care providers, Survey Healthcare Global (SHG), supplied a targeted sample frame of OB/GYNs, general/family practice physicians, and maternal-fetal medicine specialists, nurses, and pharmacists. Given the survey population, we adopted non-probability sample methodology and pre-stratified to target the specific sample groups. The total sample size completed interviews with eligible HCPs screened for routinely providing care for pregnant people is N = 409. The following percentages represent the reported field of care:

- Obstetrics and/or Gynecology (51%)
- Family and General Practice (33%)
- Pediatrics (14%)
- Maternal-Fetal Medicine (9%)
- Reproductive Endocrinology (8%)

SHG targeted panelists were selected at random (PTP allocation) and sent to an online survey. SHG validates panelists using AMA and other provider directories to maintain sample integrity. The online survey took an average of 19 minutes to complete. The survey was conducted between June 6–30, 2022. The data were not stratified or weighted post-data collection since the population parameters represented those who routinely care for pregnant patients.

