



# COVID-19 VACCINES

## A Survey of Attitudes and Practices Among Family Physicians

### Executive Summary

Throughout the COVID-19 pandemic, family physicians have played a critical role in increasing COVID-19 vaccine confidence among patients and providing the vaccines in their practices. A recent web-based survey indicates that most family physicians believe vaccine assessment is integral to their role, and their recommendations matter to patients.

The survey of family physicians in the United States was conducted in February 2022 by the 2021-2022 American Academy of Family Physicians (AAFP) Vaccine Science Fellows. The results suggest that confidence in the COVID-19 vaccine among family physicians is high, with the vast majority choosing to vaccinate themselves and their children. When communicating with patients, most family physicians report feeling confident in their knowledge and understanding of COVID-19 vaccines.

The survey results also indicate that many family physicians are concerned about the spread of misinformation related to COVID-19 vaccines. Nearly half expressed some discomfort in raising the issue of COVID-19 vaccination status with their patients. Furthermore, survey respondents noted that some patients are now more hesitant to receive any vaccine than before the COVID-19 pandemic.

Motivational interviewing and discussing facts and data were the most common methods respondents use when counseling hesitant patients about COVID-19 vaccines. Survey results pointed to several opportunities to increase COVID-19 vaccine confidence and support family physicians in promoting and administering the vaccine.

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*This publication is supported by an unrestricted grant from Merck Sharp & Dohme Corp. The contents are those of the individual author(s) and do not necessarily represent the official views of or are an endorsement by Merck Sharp & Dohme Corp.*

## About the AAFP Vaccine Science Fellowship

The AAFP Vaccine Science Fellowship just completed its 13<sup>th</sup> year. During their one-year fellowship, fellows develop their knowledge and understanding of vaccine science and policy by working with mentor physicians and meeting with public health and immunization experts and federal and state vaccine policy groups.

## Acknowledgments

The 2021-22 Vaccine Science Fellows would like to thank the AAFP Division of Marketing & Strategic Engagements and its Department of Member Insights for their help administering the survey and compiling the results. We are also very grateful for the support of the Robert Graham Center for Policy Studies in Family Medicine and Primary Care, and Jack Westfall, MD, who provided invaluable help with our survey design and creating this report.

We could not have completed this survey without the assistance of Pam Carter-Smith, MPA, senior strategist at the AAFP and program director of the Vaccine Science Fellowship. She supported and guided this project from the beginning, helping us put all the pieces in place. We also wish to thank Merck Sharp & Dohme Corp., which provided financial support for our project and the fellowship.

## Opportunities for Action

- The public and policymakers should be aware that nearly all family physicians are vaccinating themselves and their children at much higher rates than the general public.
- Additional effort and research should be devoted to creating strategies and communication techniques to increase confidence in all vaccines—COVID-19 and routine—since the acceptance of all vaccines has fallen during the pandemic.
- More evidence-based materials should be developed and distributed to combat vaccine misinformation across all platforms, including traditional media, social media, and newspapers.

“

*I would have liked a laminated 10-page PowerPoint presentation that patients could look at before I came in.*

— FAMILY PHYSICIAN

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- More practices should be supported to overcome barriers to administering COVID-19 and other vaccines on-site, such as infrastructure and storage needs. This is an especially acute need for family physicians. According to our survey, 30% of family physicians provide other vaccines but not COVID-19.
- Physicians need more time to thoroughly discuss vaccines with patients to address their concerns. Motivational interviewing is an often-cited and effective technique, and appropriate training and education on this technique should be made readily available to physicians.
- Support, such as counseling, coaching, resources, and tools should be offered to physicians experiencing frustration due to interactions with patients who refuse COVID-19 and other vaccines.

## Background

On March 11, 2020, the outbreak of Coronavirus Disease 2019, known as COVID-19, was declared a global pandemic by the World Health Organization (WHO).<sup>1</sup> COVID-19 is caused by SARS-CoV-2, a novel coronavirus.

The consequences of the pandemic have been far-reaching and for many, long-lasting. As of May 17, 2022, there are more than one million reported deaths from COVID-19 in the United States<sup>2</sup> In a poll taken early in the pandemic, nearly 90% of U.S. adults stated their lives had changed at least a little due

to the pandemic. Many of them (44%) indicated their lives had changed in a major way.<sup>3</sup> Results of a more recent survey at the end of 2021 showed that 30% of Americans believe their lives will never return to normal.<sup>4</sup>

At the start of the pandemic, the unemployment rate in the United States soared to 14.8%.<sup>5</sup> As of May 2022, the unemployment rate had decreased to 3.6%,<sup>6</sup> still slightly higher than in February 2020 before the official start of the pandemic.<sup>5</sup>

In addition to the economic toll, the pandemic adversely affected health outcomes in the United States and globally. Rates of obesity and alcohol consumption increased in the United States compared to pre-pandemic levels,<sup>7</sup> and the prevalence of anxiety and depression increased by more than 25% globally during the first year of the COVID-19 pandemic.<sup>8</sup>

The hope of ending or mitigating the worst effects of the pandemic began when the U.S. Food and Drug Administration (FDA) issued the first emergency use authorization (EUA) for a COVID-19 vaccine—the Pfizer-BioNTech vaccine—on December 11, 2020.<sup>9</sup> The importance of vaccination against COVID-19 to end the pandemic cannot be overstated. A study by The Commonwealth Fund estimated that through March 2022, COVID-19 vaccination efforts in the United States prevented 66 million additional infections, 17 million hospitalizations, and 2.2 million deaths. Nearly \$900 billion in associated health care costs were averted due to the vaccine.<sup>10</sup>

One of the main goals of the U.S. National Strategy for the COVID-19 Response and Pandemic Preparedness is to “mount a safe, effective, comprehensive vaccination campaign.”<sup>11</sup> Health care leaders and professional associations, such as the AAFP, continue to stress the importance of the COVID-19 vaccines in preventing severe disease, hospitalizations, and death.<sup>12</sup>

As of June 21, 2022—more than a year since COVID-19 vaccines became widely available—83% of eligible U.S. residents (five years and older) had received at least one dose of a COVID-19 vaccine.<sup>13</sup>

Despite the overwhelming effectiveness of the COVID-19 vaccines in preventing hospitalizations and death, vaccine hesitancy and refusal continue to impede efforts to stop the viral spread in the United States and worldwide. As of June 2022, nearly 30% of eligible vaccine recipients were not fully vaccinated. More notably, less than half (48.9%) of U.S. residents 12 years and older had received at least their first booster dose.<sup>13</sup> These were concerns before the COVID-19 pandemic, as well. The WHO identified vaccine hesitancy as one of the top ten threats to global health in 2019.<sup>14</sup> Since the first COVID-19 vaccines were administered in the United States, the spread of misinformation (especially via social media) and the politicization of COVID-19 vaccination efforts have been associated with lower vaccination rates.<sup>15</sup>

Family physicians play a vital role in increasing COVID-19 vaccine confidence and acceptance. Health care providers have long been seen as trusted advisors who care about the interests of their patients.<sup>16,17</sup> Despite rising mistrust of other key institutions and leaders, patients continue to look to health care providers for reliable information about their health, including vaccines.<sup>16</sup>

Our survey provides a better understanding of family physicians’ attitudes and barriers to promoting COVID-19 vaccines. It also offers recommendations to better support family physicians as vaccine educators and advocates among patients and their communities.

“*If patients are not exhausted from being grilled, I feed them [information] on how to convince hesitant, reluctant family members or friends to access information. I empower my patients to be advocates for their community by speaking out to those they know.*

— FAMILY PHYSICIAN



## Methods

The AAFP Vaccine Science Fellows developed the survey, which consisted of 31 questions. Twelve questions were measured on a five-point Likert scale. Most of the questions asked for a single answer or allowed respondents to provide multiple answers. Other questions included three close-ended, two multiple text box, and one open-ended question(s).

Institutional review board (IRB) approval was obtained to administer the survey. A quantitative approach was undertaken, sending surveys via email to 5,000 active AAFP members. Using the AAFP membership database, a random sample of family physicians was sent the survey through the AAFP's Member Insights Exchange on February 9, 2022. The survey was sent from the AAFP's survey platform, Alchemer, with a reminder email sent on February 13, and the survey closed on February 28. We received 304 surveys, with 28 partially completed for a response rate of 6%. Survey responses were anonymous, and we reviewed more than 200 comments provided by respondents.

The survey assessed vaccine confidence among family physicians to understand the frequency of family physician hesitancy in discussing COVID-19 vaccination. We sought to identify how hesitancy may or may not be specific to COVID-19 vaccines compared to other vaccines and what can be done to support physicians in regularly assessing patients' vaccination status.

To conduct this research, we contacted a large sample of AAFP family physicians thought to represent the larger family physician population in the United States. We collected their responses and comments through our survey of COVID-19 vaccination attitudes, practices, and challenges.

## Results

**Table 1: Survey Respondent Characteristics (n = 303) \***

Characteristic	Frequency – n	Percent
<b>Gender</b>		
Male	139	47%
Female	154	53%
<b>Sees patients</b>		
Yes	277	95%
No	16	5%
<b>Years since residency</b>		
0 to 7	42	14%
8 to 14	64	22%
15 to 21	62	21%
22 or more	126	43%
<b>Medical training</b>		
International medical graduate	41	14%
U.S./Canada medical graduate	255	86%
<b>Provides prenatal care</b>		
Yes	72	26%
No	206	74%
<b>Has at least one child 12-17 years</b>		
Yes	75	25%
No	217	73%
Prefers not to answer	4	1%
<b>Has at least one child 5-11 years</b>		
Yes	71	24%
No	218	74%
Prefers not to answer	4	1%

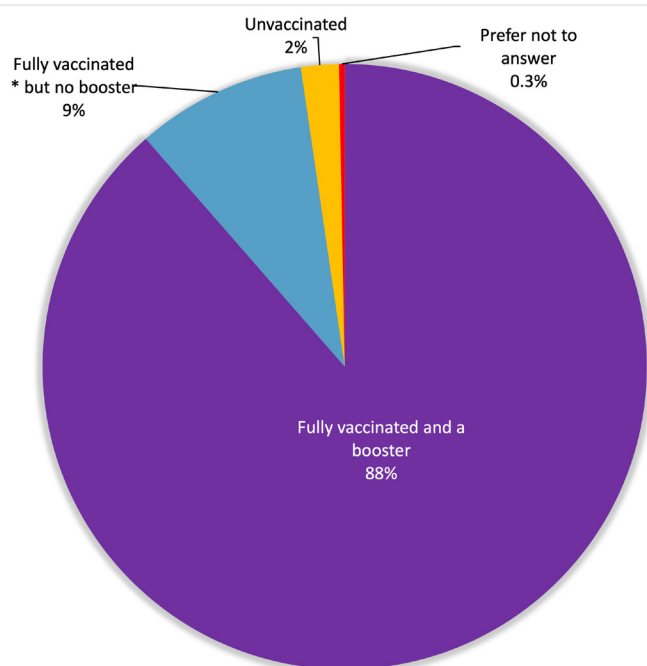
*\*Some survey respondents did not answer all questions. Hence, the number of responses for each answer does not always equal 303.*

## Key Findings

### 1. Family physicians have vaccinated themselves and their children.

In the United States, about one-quarter of adults are not yet fully vaccinated, and far fewer have received boosters.<sup>13</sup> Conversely, 97% of family physicians who responded to our survey reported being fully vaccinated, with 88% receiving at least one booster.

What is your personal COVID-19 vaccination status? (n = 298)



\* Fully vaccinated means receiving at least two doses of the Pfizer or Moderna vaccine or one dose of the Johnson and Johnson vaccine.

Vaccine confidence extends to vaccines for physicians' children. Among the survey respondents' children 5-11 years, 86% are fully vaccinated, and another 5% have received either one dose or are planning to be vaccinated. Among their children 12-17 years, 88% are fully vaccinated. This is a significant difference from current vaccination rates among all children in these age groups in the United States, with 29% of children 5-11 and 59% of children 12-17 fully vaccinated as of June 15, 2022.<sup>18</sup>

Among the small number of family physicians who reported not vaccinating their children, the most common reasons were safety concerns and the belief that serious COVID-19 infections are rare in children. Two respondents also mentioned objections from

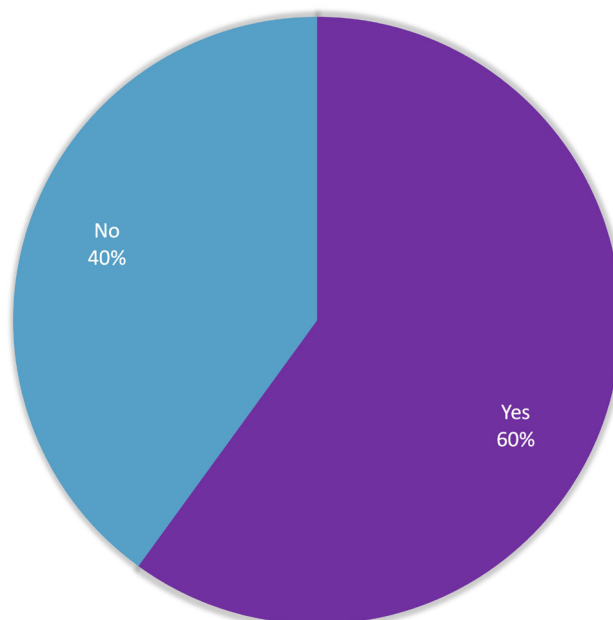
their spouses, while two others said their child(ren) had already been infected with COVID-19 and had some natural immunity.

Nearly all family physicians in this survey support adult and child vaccination, and the vast majority report that they and their children are vaccinated.

### 2. Family physicians are contributing to nationwide vaccination efforts.

Sixty percent of family physician respondents indicated that their practices provide the COVID-19 vaccine. Of the 161 respondents who shared the number of COVID-19 vaccines they provided to patients, 39% estimate their practice has provided more than 1,000 vaccines.

Does your practice currently provide the COVID-19 vaccination? (n = 281)



Among practices that do not offer the COVID-19 vaccine, 31% offer routine vaccines for adults but not COVID-19, and 30% provide routine vaccines for children but not COVID-19 vaccines.

For the practices that do provide COVID-19 vaccines, we estimate that based on the number of doses they reported their practice has administered (averaging nearly 600 vaccines per respondent), the 168 family physicians and their practices provided more than 100,000 total COVID-19 vaccines to patients.

**3. Despite some concerns about COVID-19 vaccine hesitancy, family physicians believe assessing vaccination status and encouraging vaccines is an important part of their job, and they are confident in their own knowledge of the vaccine.**

Eighty-six percent of survey respondents reported assessing vaccination status for almost every patient, and 89% agreed or strongly agreed that this is an important part of their job. Only 1% (2 respondents) said COVID-19 vaccination status is not routinely assessed. Nine percent of survey respondents (12% of women; 6% of men) reported being less comfortable discussing COVID-19 vaccination status compared to other routine vaccines.

Ninety percent of survey respondents reported feeling confident with their knowledge and understanding of the COVID-19 vaccine, and 92% said they know where to get information about the COVID-19 vaccine.

**4. Some family physicians are experiencing challenges and personal discomfort with assessing COVID-19 vaccination status.**

Fifty-three percent of respondents reported no discomfort or hesitation discussing COVID-19 vaccination with patients. The remaining 47% were split about the primary reason for their discomfort, with those respondents reporting that:

- The issue is likely to upset or anger the patient (17%).
- Discussing the issue takes too much time (10%).
- The physician's input won't impact the patient's decision (10%).
- Discussing the issue is likely to anger the physician (5%).
- There is insufficient evidence for the vaccine/other (5%).

**5. COVID-19 vaccine hesitancy may affect patient confidence to receive other routine vaccines.**

Thirty-four percent of survey respondents reported that their patients are more hesitant to receive any routine vaccines now compared to before the pandemic. Another 24% were neutral.

As the United States catches up on the more than 37 million adult and adolescent routine vaccines missed during the pandemic,<sup>19</sup> family physicians are likely to play a vital role in increasing vaccine uptake among a potentially more skeptical public.

**6. Family physicians believe their advice makes a difference.**

Physicians and other health care providers are widely viewed as trustworthy and ethical by the public,<sup>16,17</sup> and most survey respondents believe their advice matters to patients. Seventy-four percent agreed that their recommendations about COVID-19 vaccination affect patient decisions.

**7. Most, but not all, physicians agree with the Centers for Disease Control and Prevention's (CDC's) vaccination recommendations for COVID-19. Some have concerns about the vaccine for children.**

Eighty-two percent of survey respondents agreed or strongly agreed with the recommendations for COVID-19 vaccines made by the CDC, but the remaining were neutral (8%) or disagreed or strongly disagreed (9%) with the CDC's recommendations.

Some physicians were more skeptical about COVID-19 vaccines for children. Twelve percent of respondents reported being less likely to discuss COVID-19 vaccination if the patient is under 18 years, and 12% also indicated they have concerns that the risk of COVID-19 vaccination outweighs the benefits in children.

*I've changed some minds. I've lost some patients.  
I've gained some patients. I've become more jaded.*

— FAMILY PHYSICIAN

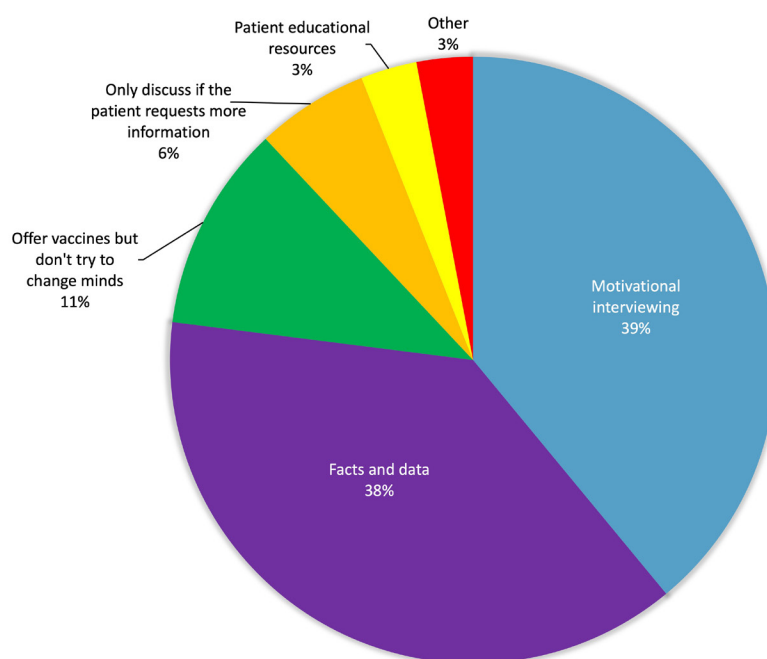
**Table 2: Attitudes and Practices**

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n =
Assessing COVID-19 vaccination status is an important part of my job as a family physician.	18 (6%)	5 (2%)	8 (3%)	61 (22%)	186 (67%)	278
In my main practice setting, we assess COVID-19 vaccination on almost every patient.	15 (5%)	8 (3%)	16 (6%)	88 (32%)	150 (54%)	277
Compared to other routine vaccines, I am LESS comfortable discussing COVID-19 vaccine with my patients.	144 (52%)	89 (32%)	21 (8%)	20 (8%)	4 (1%)	278
Compared to before the pandemic, my patients are more hesitant to receive ANY routine vaccines now.	24 (9%)	94 (34%)	66 (24%)	75 (27%)	18 (6%)	277
I am confident with my knowledge and understanding of the COVID-19 vaccine when discussing it with my patients.	7 (3%)	4 (1%)	16 (6%)	92 (33%)	158 (57%)	277
I agree with the recommendations for COVID-19 vaccines made by the CDC.	14 (5%)	12 (4%)	23 (8%)	90 (32%)	139 (50%)	278
I know where to get information when I have questions about the COVID-19 vaccine.	5 (2%)	4 (1%)	13 (5%)	93 (34%)	160 (58%)	275
My recommendations about the COVID-19 vaccine have an impact on my patients' decisions to be vaccinated or not.	4 (1%)	12 (4%)	56 (20%)	134 (48%)	72 (26%)	278

## 8. Family physicians rely on facts and data and motivational interviewing to improve vaccine acceptance.

When interacting with hesitant patients, survey respondents use a variety of strategies to increase vaccine confidence and acceptance, but they largely prefer facts and data (38%) and motivational interviewing (40%).

Which of the following methods and/or interventions do you use MOST often to discuss the COVID-19 vaccine with hesitant patients? (Select only one response)



## 9. Family physicians point to a number of factors that would improve vaccination rates, especially more time for patient visits and better resources for overcoming misinformation.

Survey respondents indicated the following factors would improve their experience discussing COVID-19 and routine vaccination status with patients.

Factors that would improve experience	Discussing COVID-19 vaccines (n = 272)	Discussing routine vaccines (n = 271)
Better resources for helping patients overcome misinformation	39%	20%
More time for visits	24%	27%
Financial incentives for doctor/practice	6%	6%
Patient incentives	7%	7%
Administrative support	4%	4%
More help from support staff	5%	15%
More personal knowledge of vaccine safety	2%	1%
EMR reminders	2%	14%
Other	11%	7%

## Discussion

Family physicians play a pivotal role in shaping discussions about COVID-19 vaccination and helping skeptical patients become more comfortable with the vaccine. As the survey results indicate, nearly all family physician respondents (97%) have been fully vaccinated against COVID-19. This is consistent with other reports of high COVID-19 vaccination rates (96% as of June 2021) among all physicians.<sup>20</sup> Our survey also indicates that most respondents have vaccinated their children. In addition, they are talking to their patients about the importance of the COVID-19 vaccine, and 60% offer the vaccines in their practices.

One initial hypothesis the authors formed was that family physicians may experience their own hesitancy in assessing and counseling patients about COVID-19 vaccination status. Since it first became available, many people who rejected the vaccine have become increasingly entrenched in their beliefs. Some are spreading misinformation that stokes fear and increases vaccine hesitancy and refusal. Our concern was that the politicization of the vaccine and the strong emotions expressed by many who reject the vaccine would generate reluctance from family physicians to initiate conversations about the COVID-19 vaccine.

However, our results show that family physicians, by and large, have risen to the challenge. Eighty-six percent of respondents reported assessing the vaccine status of almost every patient. Only 9% reported feeling more uncomfortable discussing the COVID-19 vaccine than other routine immunizations.

Despite their overwhelming confidence in the vaccine, family physicians are still affected by widespread vaccine hesitancy and refusal in many communities. Almost half (47%) reported at least occasional discomfort when talking to patients about COVID-19 vaccines.

“*I never push, but I ALWAYS recommend them [COVID-10 vaccines] and also exhibit curiosity if patients refuse.*”  
— FAMILY PHYSICIAN



One physician described “discomfort [discussing COVID-19 vaccines] for multiple reasons: [the] issue [is] likely to upset/anger [the patient], [it] takes a significant amount of time, and [it] often does not impact the patient’s decision.”

Despite the discomfort, the physician summarized his perspective by stating, “I still engage with patients and discuss [the COVID-19 vaccines] unless they are outright hostile when the topic is brought up.”

Other physicians voiced concerns about the negative impact of such conversations on their ability to connect with patients. One physician stated that “disagreement about the vaccine creates barriers in the doctor-patient relationship.”

Another physician lamented that there is “distrust of [the] medical community like I have never seen before.” The physician commented that there is “stalwart opposition [to the vaccine] by patients. They believe what they believe, period.”

Still, others expressed frustration over widespread misinformation and interference by politicians, which affects patient decision-making. One opined to “get politics out of health care decisions,” representing a common sentiment shared by several others.

At this point in the pandemic, many family physicians find that patients who remain unvaccinated can’t be persuaded to accept a COVID-19 vaccine. Yet, nearly three-quarters (74%) of respondents indicated that they believe their professional advice does make a difference. One physician commented, “[trying to change minds] is frustrating, but the occasional win is uplifting!”

One of the most concerning findings is that one-third of respondents felt their patients are more hesitant to receive routine, non-COVID-19 vaccines than before the pandemic. Several physicians reported a general mistrust among their patients about the government, especially the CDC and pharmaceutical companies. Frustration about how the government and health leaders handled the COVID-19 pandemic may contribute to doubt about public health guidelines, including recommended vaccines.

The perception that COVID-19 vaccine hesitancy may now extend to other vaccines has grave public health implications. Vaccinations are essential to reducing the spread of many other infectious diseases, including influenza, measles, and human papillomavirus (HPV). Fear of vaccines, stimulated by misinformation and mistrust of health leaders, may undermine efforts to help people catch up with the millions of vaccinations missed during the pandemic.

Among the many family physician respondents who try to support hesitant patients to accept the vaccine, motivational interviewing is the most common tool, preferred by 40% of respondents. “I think motivational interviewing is key,” wrote one physician. “You have to know where they stand. If they are not open, they are just not open. But if you feel that door is open... take advantage!”

Offering more training in motivational interviewing techniques is one strategy that might help family physicians become even more effective when talking to patients about vaccines.

Additionally, many family physicians would welcome more research and sharing of best practices to help patients overcome misinformation. In conjunction with family physician input, researchers at the University of Calgary’s School of Public Policy recently developed the evidence-based [Vaccine Hesitancy Guide](#) to help support conversations with vaccine-hesitant patients.

About one-quarter of survey respondents cited having more time for patient visits as an important way to increase the physician’s ability to discuss vaccine status with patients. One respondent wrote, “I ask all patients at the end of the visit about their COVID vaccination status/booster status without hesitancy, but [it] would be helpful if my visits had more time to allow for this discussion.”

Other physicians commented about the length of time it takes to have these conversations. Family physician leaders in the United States should continue to stress to administrators the importance of allowing for quality patient visits over the quantity of appointments.

Although the vast majority of family physicians are vaccinated and vaccinated their children, vaccine confidence is not universal among physicians. Another survey of primary care physicians in May 2021 indicated that 10% of respondents do not agree that, in general, vaccines are safe; 9% do not agree they are effective; and 8% do not agree they are important. The study expressed concern that almost 25,000 primary care physicians nationwide potentially disagree that, in general, vaccines are safe.<sup>21</sup>

Similar to that study, our results show that 8% of respondents disagreed that assessing COVID-19 vaccination status is an important part of their job. A small minority also expressed concerns about the safety of the COVID-19 vaccine, especially in younger patients. Twelve percent of respondents were worried that the risks of the vaccine outweighed the benefits in children and reported that they were less likely to discuss the vaccine when the patient was under 18 years. Even though they are relatively few, those who waver in their support of COVID-19 vaccines present an opportunity for education and support to ensure a unified voice in support of vaccines from family physicians.

Overall, survey results indicate that family physicians are prepared and well-positioned to address their patients who are still considering the COVID-19 vaccine. However, attempts to convince unvaccinated patients to take the COVID-19 vaccine can strain the physician-patient relationship. A feeling demonstrated in our survey among family physicians, which continues to be pervasive in the public, is that the continued politicization of COVID-19 is harmful and increases mistrust in the COVID-19 vaccines. The long-term relationships built through family medicine may be more amenable to conversations that avoid the political aspects of COVID-19 vaccination, testing, and treatment.

## Biases and Limitations

The survey results have some notable biases and limitations. The relatively low response rate (6% of the 5,000 physicians who received the survey) limits our ability to generalize the results to the broader population. Selection bias could be present, with physicians more interested in promoting COVID-19 vaccines choosing to complete the survey more often than those less supportive of the vaccine or tired of thinking about COVID-19. This could lead to an overestimation of the willingness of family physicians to talk to patients about their COVID-19 vaccination status.

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