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COVID-19 vaccine: Are US consumers ready?

While details of COVID-19 vaccine administration are still pending, healthcare stakeholders may want to consider their long-term plans for consumer engagement in immunization. Here, we discuss the latest insights on US consumers' reported acceptance of COVID-19 vaccination and considerations for healthcare leaders.

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The proverbial light at the end of the dark tunnel of the COVID-19 pandemic is beginning to come into sight. The scientific community has made tremendous strides in getting vaccine candidates through clinical development at unprecedented speed to meet the urgent public health need. But vaccines are only useful if people take them. As discussed in the paper "When will the COVID-19 pandemic end?," our analysis suggests that a high level of vaccine adoption is required to achieve herd immunity, even accounting for some level of natural immunity. If we assume that only adults over the age of 18 receive the vaccine (consistent with the initial vaccine trials) and vaccines all have efficacy of 95 percent, **58 to 85 percent of that adult population would need to be vaccinated to reach herd immunity**. However, there is still significant uncertainty around the vaccine's effectiveness in reducing transmission. If we assume on average that vaccines only reduce transmission at 75 percent or higher levels, for example, then from **78 percent to 94 percent of the adult population would need to be vaccinated to reach herd immunity** (Exhibit 1).

These desired adoption ranges far exceed those of more established vaccines, including flu and pneumococcal pneumonia. For example, only about 40 percent of adults aged 18 to 64 today receive the vaccines that are available and recommended for them.[1] Many reasons exist for this low adoption rate, including confidence in efficacy (15 percent), concern over side effects (23 percent), and lack of concern for the flu (13 percent).[2] Vaccine adoption among the elderly (over 65) tends to be much higher, in the range of 70 percent for flu annuals and pneumococcal pneumonia. Conversely, vaccine adoption among minority groups is often lower—for example, in the 2019 through 2020 flu season, 53 percent of non-Hispanic Caucasian adults

Exhibit 1

Ending the pandemic could require COVID-19 vaccination uptake in the range of between 58% and 94%, higher than most adult vaccine benchmarks.

Overall COVID-19 vaccine rates may be lower than flu or pneumococcal rates for seniors.

% of US population vaccinated by disease and age group
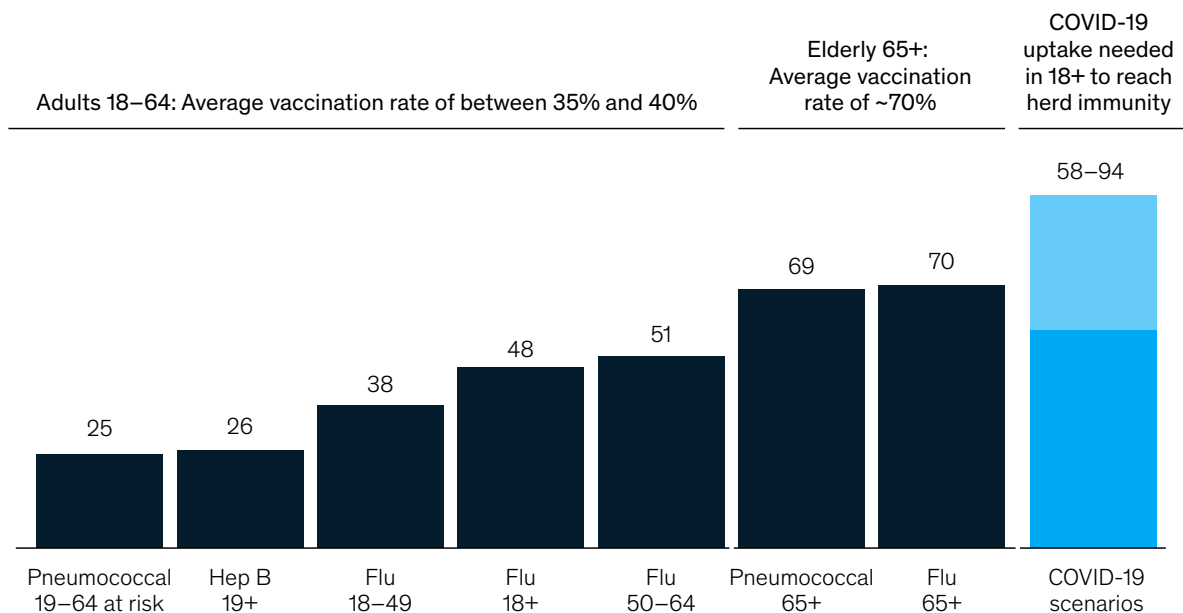
Source: CDC

aged 18 and older got vaccinated, compared with 38 percent of Hispanics and 41 percent of non-Hispanic Black Americans in the same age group.[3] These inequities in adult vaccines adoption are particularly worrying given the disproportionate health impact of COVID-19 on minority populations.

This stark contrast between where we are today with adult immunization and where we would want to be to rapidly and confidently end this pandemic suggests that neither the existing "adult immunization infrastructure," nor the existing practices to engage consumers on adult vaccine adoption, may be sufficient. Certain strategies can help the vaccine live up to its promise, including recognizing physicians and healthcare workers as a trusted source of information.

COVID-19 vaccine consumer sentiment is more complex than "likely"/"unlikely": more than 45 percent of adults want to wait and see.

Before we turn to what potential actions to consider, it is important to understand the nuances of consumer sentiments. McKinsey has been conducting regular surveys of a representative sample of American adults, the most recent of which was completed from November 30 through December 6, 2020 with 2,467 respondents, to understand consumer sentiment regarding potential COVID-19 vaccines and their related experiences through the pandemic. Our previous research suggests that consumers' regard for the importance of

vaccination in our path back to the "next normal" is important. Indeed, 88 percent of consumers that we surveyed believe that a vaccine is "very or somewhat important to return to normal activities."[4]

Consumers fall into three COVID-19 vaccine adoption segments along a continuum of stated vaccine enthusiasm, and opportunity exists to better inform and engage consumers, especially the "cautious adopters."
Much of the prevailing market research on COVID-19 vaccination frames sentiment as "likely," "unlikely," or "neutral." Our research is designed to uncover a more granular continuum of sentiments, and to account for the fact that many consumers may take a "wait and see" approach to their decision about vaccination. Our research has found that consumers' attitudes towards receiving a COVID-19 vaccine fall into three primary segments. These three segments include (percentages indicate the percent of respondents within the given segment)[5]:

— **"Interested adopters":** Thirty-seven percent of respondents say they are willing to participate in a trial, receive a vaccine after an EUA (emergency use authorization), or after clinical trials. These are consumers who have relatively firm personal conviction in their decision to get vaccinated and may well be "first in line" when a vaccine is available to them—assuming continued positive safety and efficacy evidence.

— **"Cautious adopters":** Forty-five percent of respondents want to wait until the vaccine has been on the market for between three

Survey details

Surveys were fielded online to US residents between the ages of 18–84 from September 5–7, 2020, with 1,303 respondents; October 22–26, 2020, with 1,305 respondents; and from November 30–December 6, 2020, with 2,467 respondents. The samples were balanced or weighted to be nationally representative for gender, age, income, race/ethnicity, and region. The surveys were conducted only in English. Thus, they do not reflect the behavior or attitudes of those who would have preferred a survey in another language.

and 12 months or until they feel confident in it. The largest of any other segment, this group is less defined by their demographics (for example, 45 percent of those aged over 65) and more defined by their attitudes. In particular, they are much more focused on the health implications of the vaccine (for example, side effects, ingredients, speed of the vaccine development process)—they want to know it is safe and they want to see that others are safe after receiving the vaccine. Importantly, they want to receive information from trusted sources, namely physicians.

— **"Unlikely adopters":** Eighteen percent of respondents say they are unlikely to receive the vaccine, regardless of timing. This segment could comprise people who are both disinterested in vaccination because they do not think they need it (for example, healthy young adults who may perceive low personal

risks) or because they have developed negative sentiments about vaccination (for example, general distrust, beliefs about harmful effects).

Understanding the different attitudes and experiences of each of these three segments provides insight into what could inform their decision to get a COVID-19 vaccine as well as what actions might have the most impact in supporting informed consumer decision making. For example, it is particularly important to understand the needs and concerns of vulnerable populations. As other research has suggested, the proportion of consumers in each segment varies by race/ethnicity. For example, our survey found that Black Americans surveyed are 1.6 times more likely to be in the "unlikely adopter" segment than Caucasian survey respondents.[6] Black Americans in the "unlikely adopter" segment

Exhibit 2

COVID-19 vaccine acceptance consumer segments reflect variation in attitudes.

Attitudes and preferences of segments highlight potential ways to engage consumers

Segment (% of respondents)

	Interested (37%)	Cautious (45%)	Unlikely (18%)
Who are they? More likely to…	Have been affected by COVID-19 and are engaged in their health, including: • Have tested positive for COVID-19 (65%) or were hospitalized for COVID-19 (87%) • Have one or more chronic conditions (41%) and have a primary care provider (41%) • Live in larger cities (48%), have higher income (44%), male (49%), or ages 35–44 (48%) or 65+ (42%)	Have little differentiation across most demographics, including race/ethnicity and age, for example: • Ages 65+ (46%) • White/Caucasian (44%), Black/African American (43%), or Hispanic/Latino (46%)	Be lower income (including Medicaid and uninsured), healthier, and less likely engaged in testing or in knowing people that have gotten COVID-19: • No chronic conditions (23%), have not tried to get tested for COVID-19 (21%), or not known anyone diagnosed with COVID-19 (24%) • Black or African American (25%) • Lower income (31%) or live in rural communities (29%) • Have Medicaid (31%) or uninsured (34%)
Have they received the flu vaccine?	High stated uptake in the flu vaccine	Strong stated uptake in the flu vaccine	Low stated uptake in the flu vaccine
2019–20 flu season	76%	59%	18%
2020–21 flu season	26%	28%	8%

Exhibit 2 continued

Why they might (or might not) get a COVID-19 vaccine?	Believes getting vaccinated is the right/responsible thing to do (54%) and are motivated by the personal health protection associated with vaccines (57%) and don't want to risk getting COVID-19 (50%).	Has concerns that vaccine development was too rushed (32%), is unproven (21%), and may have side effects (51%). As a result, they want to see how it impacts other people before getting it themselves (45%). They believe they would receive the vaccine for similar reasons as the interested segment.	Does not believe a vaccine would protect them (21%) and would rather risk getting COVID-19 (16%). Concerned about ingredients in the vaccine (31%), that it was too rushed (28%), and don't like people telling them what to do (15%).
Where do they want to get the vaccine?	Open to many sites, including physician office (53%), hospitals (52%), health clinic at a pharmacy (38%), or at home administered by a healthcare professional (27%)	Most open to clinical sites, including physician office (65%), hospitals (45%), and health clinics at a pharmacy (34%)	Limited interest in any sites, preference for physician office (21%) and hospital (13%)
Where are they getting their information today?	Receiving a lot of information across sources, including the CDC (34%), local news (39%), their physician (25%), and social media (24%), and identify the CDC (16%) and physicians (15%) as most influencing their perspectives to date. 13% of respondents say they have not received any COVID-19 vaccine information.	Receiving a lot of information from many sources, including local news (51%), social media (28%), online or paper news-paper (22%), and identify the local news (20%), CDC (15%), and trusted national health authorities and experts (12%) as most influencing their perspectives to date. 13% of respondents say they have not received any COVID-19 vaccine information.	Most often saying that they haven't received any informatio (25%). Those who have receivec information received it from loca news (46%), social media (34%) and identify local news (24%) an social media (15%) as most influential to date.
Whose advice is most important?	Healthcare leaders and others, including physicians (44%), CDC (32%), trusted national health authority (26%), WHO (22%), health insurance company (21%), and pharmacy/pharmacist (22%)	Healthcare leaders, focused on physicians (54%) and government health authorities (90%) (eg, CDC, WHO, trusted national health expert)	Few sources, they prefer to mak the decision on their own (56%) Their top sources are physicians (20%), family (12%), and the CDC (8%)

Source: McKinsey COVID-19 Consumer Survey, 12/07/2020

share similarities with non-Black consumers in this category (for example, income and attitudes). Exhibit 2 highlights some of these core differences.

Consumer sentiment is fluid and changing.
As consumers' understanding of potential COVID-19 vaccines has increased with new information, so have their attitudes and perceptions of a potential vaccine, including

reduced skepticism about the benefits. For example, within the "cautious adopter" segment, some respondents have shifted from "waiting until they are confident that a vaccine has been proven to be safe" to "getting a vaccine once it has been on the market for 3–12 months." This may be driven by respondents' reduced skepticism for the benefits of a COVID-19 vaccine, such as a decrease in agreement with the statements

such as: "I don't think it would protect me" (18 percent to 12 percent) and "It's an unproven vaccine" (31 percent to 19 percent).[7] Thus, while there are 45 percent cautious adopters today, people can move in and out of this group in either direction over time.
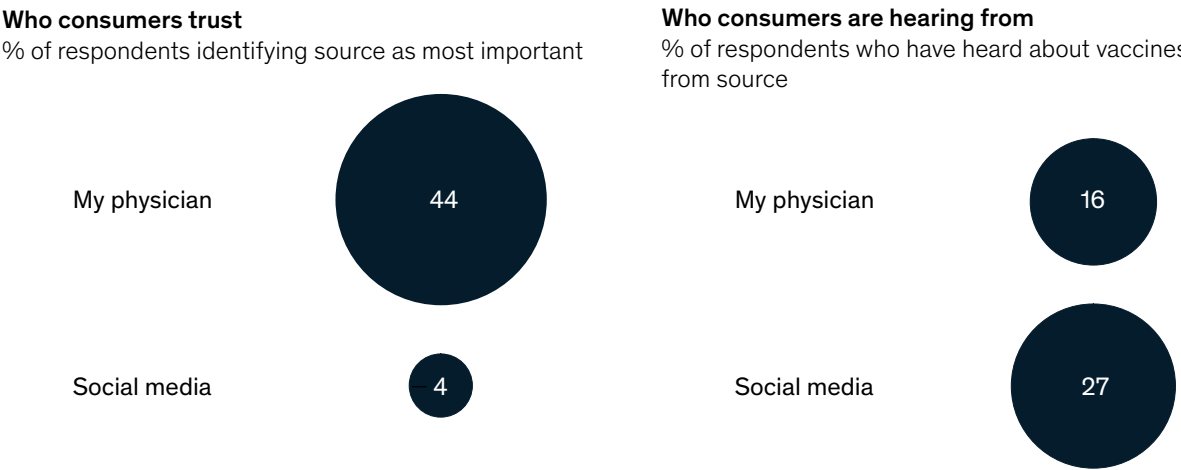
While physicians are the most trusted information source, local news and social media have been more frequent sources of vaccine information. Further, it appears that these information sources are more likely to result in respondents being less likely to consider a vaccine after receiving this information. When asked "whose advice is most important to you in the decision to get vaccinated?," 44 percent of survey respondents said that they would rely on physician advice (the number-one response), while 6 percent would turn to social media.[8] However, when asked where they are getting their information on COVID-19 vaccines today, respondents cited the local news (45 percent) and social media (27 percent), while only 16 percent cited physicians.[9] Importantly, experience receiving information across these sources appears to connect with consumer perception of COVID-19

vaccines (Exhibit 3). For example, interested adopters were more likely to have received information from their physician (25 percent) compared with cautious (11 percent) and unlikely (8 percent) adopters, whereas the unlikely adopters were much more likely to have received information from social media (34 percent).[10] When asked which information source has most influenced their perspectives on a COVID-19 vaccine interested adopters were more likely to identify a physician (15 percent) compared with the other segments (6 percent each)[11] and the unlikely adopters were much more likely to identify the local news (24 percent) and twice as likely to have been most influenced by social media compared to the other segments.[12] When asked how the information received had changed their likelihood to get a vaccine, unlikely adopters were more than three times more likely to say "much less likely than before seeing or hearing this information" compared to the other segments.[13]

It is therefore no surprise that consumers may struggle to understand the COVID-19 vaccine candidates. Many respondents in the survey

Exhibit 3

Messaging around physicians as a trusted source may go unheard on social media channels.

More than a fourth of respondents are hearing about the vaccines from social media.

Who consumers trust
% of respondents identifying source as most important

| My physician | 44 |
| Social media | 4 |

Who consumers are hearing from
% of respondents who have heard about vaccines from source

| My physician | 16 |
| Social media | 27 |

were unable to name the leading COVID-19 vaccine manufacturers and had limited knowledge of the vaccine candidates' key attributes. Other examples: referring to the two of the vaccines furthest in development, around 45 percent said they understood efficacy, 38 percent knew the required number of doses, around 40 percent believed that the vaccine would be available for some people by late December).[14]

Consumers have changed their minds on vaccines in the past when their concerns were addressed by those they trust. Our research found that around 18 percent of respondents have changed their minds about what vaccines to take[15] in their past. Similar to today's concerns with a potential COVID-19 vaccine, these respondents were most concerned about side effects or believed that they did not need it. The data suggests that the cautious adopters are more likely to change their minds than the unlikely adopters by around seven percentage points,[16] highlighting that this population can be effectively engaged in their health. Both the cautious and unlikely adopters were most influenced to change their decision by understanding that the vaccine was necessary (33 percent) did not initially think they needed the vaccine or were concerned about pain or side effects (29 percent).[17] Physicians (28 percent), family/friends (18 percent), health insurers (17 percent), independent research (16 percent), nurses (14 percent), and pharmacists (11 percent), were most likely to engage with this decision to change health-seeking behaviors.[18]

Consumers care about vaccine safety and efficacy. Recognizing that the safety and efficacy evidence on the COVID-19 vaccine candidates is limited and will continue to cumulate over time (for example, data on long-term safety, effectiveness in reducing transmission, duration of protection), consumers are likely to engage with that emerging data as they make vaccination decisions. Consumers said that when a vaccine had a higher efficacy rate (defined as above 95 percent) they were more interested in receiving the vaccine. When it dropped to below 95 percent efficacy,

consumer interest dropped by 30 percentage points.[19] When asked to choose among the three candidates most likely to come to market, respondents similarly had greater interest (90 percent) in candidates with between 90 and 95 percent or more efficacy.[20] Furthermore, consumers across all segments most frequently cite side effects as the most important driver for being unlikely to get vaccinated for COVID-19.[21]

Three potential actions to better engage consumers

Healthcare leaders in the United States are in the early stages of ramping up broad public messaging campaigns on COVID-19 vaccine, such as the CDC's "Vaccinate with confidence,"[22] and BIO's Stronger campaign.[23] These broad communications campaigns can be helpful; however, additional efforts could help with the level of vaccine engagement necessary to achieve herd immunity and bring the pandemic to an end. This "different approach" could deploy modern consumer engagement and communication capabilities, offering the potential to learn from industries such as media and consumer goods, that do this well. These capabilities could help encourage more *dynamic, engaging*, and *personalized and data-driven* consumer education. This may give consumers the information they need, when and how they need it, in order to make the most well-informed vaccination choices for themselves.

In particular, we believe that healthcare leaders across public and private sectors can consider three actions to engage consumers effectively:

1. Build a dynamic consumer engagement model

Sentiment will continue to evolve as society gains experience with COVID-19 vaccination and we further accumulate evidence on the vaccines' safety and effectiveness. There are, therefore, three imperatives here. First, consumer engagement approaches should be dynamic to reflect the emerging facts of the vaccines and be explicit and transparent on what evidence we know and do not know (and for the latter, when we expect to have that data). Second, consumer

engagement should be responsive to the evolving consumer needs over time. Third, effective engagement approaches test, learn, and iterate in an agile way. Doing this successfully requires clear definition on the front end of how to measure engagement effectiveness—these measures can include metrics like message penetration (for example, the percent of people with target messages in personal feeds, percent of people re-tweeting target messages), sentiment as expressed in consumer research, and behavioral outcomes data, including vaccination rates.

2. Activate a coalition of vaccination leaders

An opportunity exists to mobilize a broad base of leaders who can share facts and experiences about COVID-19 vaccination as a means to cultivate broader transparency and trust. Specific priorities could include:

Double down on engaging those influencers consumers trust most for vaccines: physicians and healthcare workers. As discussed in the previous section, physicians are being outpaced by social media in getting COVID-19 vaccine information to consumers.[24] Furthermore, of the more than 300 physicians we surveyed in September 2020, about 30 percent said that they were uncertain or unlikely to recommend COVID-19 vaccination to their patients,[25] citing concerns about the side effects, the "unproven" experience with the vaccine and a desire to see how it affects other people before recommending it themselves.[26] These rifts and concerns appear problematic. Physicians and other healthcare workers (including nurses and pharmacists) must be better engaged to serve as the leaders for factual vaccine information and credible counsel to patients. This effort requires a proactive, intensive, and coordinated engagement model to accomplish two concrete goals. The first goal is to ensure that all healthcare workers are well informed about vaccine performance and availability and, importantly to the consumer, the safety, and efficacy. The second goal is to support healthcare workers to become vaccination leaders. This effort could mean, for example, providing them with practical digital tools (such as fact sheets, web and text content)

with which to engage patients and caregivers. The tools could be adapted to different needs and concerns (such as addressing cost for the uninsured) and available in different languages for minority populations. This information could include for example, the safety and efficacy of the vaccine, what to expect from the vaccination experience (during and after), and the practical aspects of getting vaccinated (for example, sites, hours).

Engage influencers to cut through the noise and get the facts to consumers. The scale and velocity of information on COVID-19 vaccine candidates and vaccination can be dizzying to even the most voracious health information consumers. It is therefore no surprise that many consumers struggle to grasp the basic facts about the COVID-19 vaccine candidates. An alternative approach to traditional broad campaigns is to use modern analytical capabilities (described below) to identify the less obvious influencers, especially for "underpenetrated" consumer segments. The #BeatTheVirus campaign, for example, applied advanced analytical techniques developed for media companies to identify influencers of "gamers" (video game players). By identifying and engaging one trusted influencer (in this case, a Japanese voiceover artist), to tweet about #BeatTheVirus, the campaign increased penetration in the gamers segment from 5 percent to 80 percent.

Create a platform for COVID-19 "early vaccinators" to tell their personal stories. Finding ways for early adopters to make their choice to vaccinate known could be powerful in demystifying the vaccination experience and creating broad transparency about the side effects—and thereby increasing trust. Social media can serve as a catalyst and amplifier here—imagine a "#Ivaccinatebecause…" or "#Ivaccinated"—similar to the recent get-out-the-vote campaigns for the 2020 US presidential election. In addition, physical displays in the form of an "I was vaccinated" sticker or a symbolic pinned ribbon (akin to the red AIDS support ribbon) worn on outerwear, could make those who have been vaccinated

visible in their community and engage others in following their example.

3. Personalize consumer engagement using modern consumer data and analytical techniques

Consumer needs are diverse, and engagement needs to be personalized, with an element of success that includes:

Understanding the consumer through advanced analytics: There are many industries that have innovated analytical models that go beyond traditional approaches and instead mine multisource data (for example, social media firehoses, talk radio, set-top boxes) and use machine learning-based models to predict how consumers will engage with COVID-19 vaccine information. Although such approaches are nascent in the public health domain, these advanced techniques enable, for example, microsegments to be defined based on the ways that audience members prefer to receive and absorb messages.

This new kind of segmentation can rapidly expose how individuals should receive COVID-19 information (which may vary across the target populations). The segmentation can identify unexpected influencers or "outsized voices" in specific under-penetrated microsegments. It can generate insights into which communications formats and messages are more and less impactful. Ultimately, personalized communication and engagement, which includes micro-targeted communication pushed through a consumer's preferred channel, can help trusted community messengers reach consumers while protecting their privacy.

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COVID-19 vaccination acceptance will play a meaningful role in the timing and confidence with which we return to a new normal. Consumer sentiment is dynamic and nuanced, not monolithic nor simple. Healthcare leaders have the opportunity to better inform and engage consumers in their role as educators and in providing access to care consumers need, leveraging a new approach to support adult vaccination for the betterment of our lives and livelihoods.

[1] National Center for Immunization and Respiratory Diseases, "Flu vaccination coverage, United States, 2019–20 influenza season," Centers for Disease Control and Prevention, last reviewed October 1, 2020, cdc.gov.

[2] *Meeting the challenge of vaccination hesitancy*, a joint report from The Aspen Institute and Sabin Vaccine Institute, May 2020, sabin.org; McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QFLU4: Why are you unlikely to get an annual flu shot/vaccine or why have you not received it in the past?

[3] National Center for Immunization and Respiratory Diseases, "Flu disparities among racial and ethnic minority groups," Centers for Disease Control and Prevention, last reviewed October 23, 2020, cdc.gov.

[4] McKinsey COVID-19 Consumer Survey, October 26, 2020, QFEEL5: Please indicate how important each of the following would be for making you feel comfortable resuming your normal daily activities, (10-point scale from extremely unimportant to extremely important).

[5] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAX1B: Under which timeframe of COVID-19 vaccine availability would you be most likely to get vaccinated?

[6] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QS5: What is your race or ethnic background?; QVAX1B: Under which timeframe of COVID-19 vaccine availability would you be most likely to get vaccinated?

[7] McKinsey COVID-19 Consumer Survey, September 7, 2020, QVAX2: Why would you be unlikely to get a Coronavirus/COVID-19 vaccine?; McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020.

[8] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAX1C: Whose advice is most important to you in the decision to get vaccinated for COVID-19?

[9] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAXTYPEINFO: From which of the following have you seen or heard about a potential Coronavirus/COVID-19 vaccine?

[10] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAXTYPEINFO: From which of the following have you seen or heard about a potential Coronavirus/COVID-19 vaccine?

[11] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAXINFOINFLUENCE: Which of these sources of information has most influenced you in whether or not to get a Coronavirus/COVID-19 vaccine once it becomes available?

[12] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAXINFOINFLUENCE: Which of these sources of information has most influenced you in whether or not to get a Coronavirus/COVID-19 vaccine once it becomes available?

[13] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAXLIKELY: Based on what you have seen or heard on the Coronavirus/COVID-19 vaccine, how has your likelihood to get a Coronavirus/COVID-19 vaccine changed with that information?

[14] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAXHEARD_1: Which of the following did you see or hear about the Coronavirus/COVID-19 vaccine(s)?

[15] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QCHANGE: Have you ever experienced a situation where you didn't want to get a particular medical service (treatment, vaccine, or medication), but you changed your mind and had the service?

[16] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAX1B: Under which timeframe of COVID-19 vaccine availability would you be most likely to get vaccinated?; QCHANGE: Have you ever experienced a situation where you didn't want to get a particular medical service (treatment, vaccine, or medication), but you changed your mind and had the service?

[17] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QCHANGEREASON: Why didn't you want to get that?

[18] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAX1B: Under which timeframe of COVID-19 vaccine availability would you be most likely to get vaccinated?; QCHANGESOURCE: What made you change your mind about getting the vaccine, medication, or treatment?

[19] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QEFFECTIVE: What would be the minimum effectiveness at preventing COVID-19 would a vaccine need to before you to be likely to get it?

[20] McKinsey COVID-19 Consumer Vaccines Survey, December 6, 2020, QVAX_WHICHR3: Assuming that there are the 3 vaccines, how likely would you be to get each one?

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