

WHITE PAPER

Understanding and Addressing Vaccine Hesitancy

Achieving Control in the U.S. Today



As the pandemic emerged, and then unfolded, the medical and scientific community focused their efforts on understanding and addressing SARS-CoV-2, the virus that causes COVID-19. With multiple manufacturers reporting positive Phase-3 clinical trial data, and several either applying or getting ready to apply for an emergency use authorization (EUA) from the U.S. Food and Drug Administration (FDA), we are now entering a new phase of our collective response to the pandemic.

If and when any of the several leading COVID-19 vaccine candidates are approved, manufacturers are expected to ramp up wide-scale production. Many of the public health levers we have used to date to control the pandemic — social distancing, wearing masks, hand hygiene, broad testing, and contact tracing — will continue to be important. However, vaccines offer us a new and powerful tool in combating the pandemic.

For the country to achieve significant control of COVID-19, widespread adoption of safe and efficacious vaccines across all communities and populations will be critical.

While initial results show the vaccines pending authorization to be both safe and highly efficacious, several reports have emerged suggesting widespread adoption will be difficult due to vaccine hesitancy. Better understanding the reasons behind vaccine hesitancy enables us to implement a targeted campaign to address these concerns and help ensure widespread adoption across communities. We wanted to obtain a clear view of which populations are more or less willing to receive a COVID-19 vaccine, and why they have those particular sentiments.

To do so, we initiated a broad, nationwide survey that is representative of the U.S. population as described by the U.S. Census Bureau. The survey was initiated the day after Pfizer and BioNTech released their first interim efficacy analysis from their Phase-3 study indicating their vaccine candidate was more than 90 percent effective in preventing COVID-19 and had 5,153 participants. The survey was conducted from November 10-15. Its findings allow us to better understand vaccine hesitancy at this point in the pandemic and hence, address it.

Here, we discuss key survey results, and our multi-pronged approach to addressing specific concerns.



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Overall Findings

While the results showed significant hesitancy across multiple populations — only 28 percent of this general population sample were interested in receiving the COVID-19 vaccine as soon as it is available — they also gave us the information needed to effectively overcome these barriers. These findings are a snapshot in time and are likely to evolve.

Survey results showed that 35 percent of participants would prefer to wait until others have been vaccinated before obtaining it themselves. Another 20 percent were unsure whether they will get vaccinated.

Based on the findings, it is clear that education and awareness efforts should focus on helping those very interested in getting a vaccine as soon as it is first available understand that certain populations will be prioritized. Individuals who do not meet the priority criteria may not be able to access a vaccine early on.

The measured early rollout, given the constrained vaccine supply in the first few months, may help to reassure those who want to wait and those who are uncertain.

Seeing vaccines that receive an EUA being deployed in prioritized populations safely and efficaciously can help lower levels of vaccine hesitancy by the time more vaccine(s) is available later in 2021.

28%
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35%
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20%
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about receiving
a vaccination

17%
did not plan
on being
vaccinated

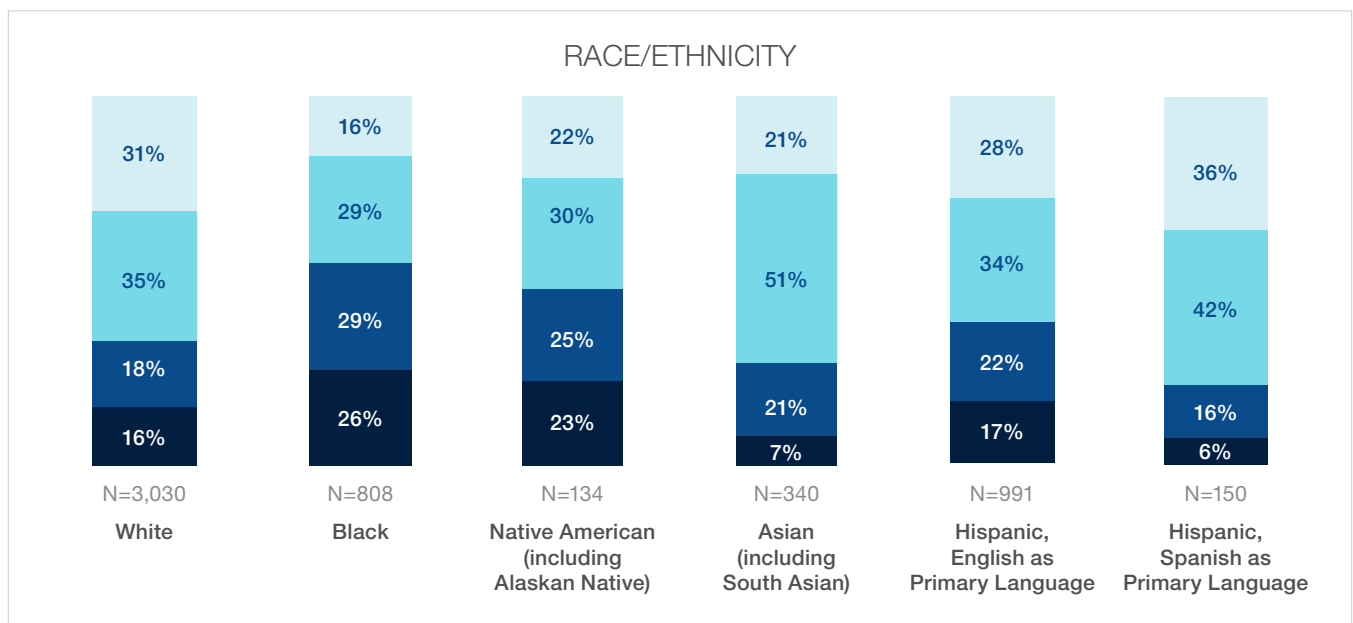


Awareness-building efforts should focus on helping those eager to get vaccinated understand how populations will be prioritized.

Attitudes Toward Vaccines Vary by Race/Ethnicity

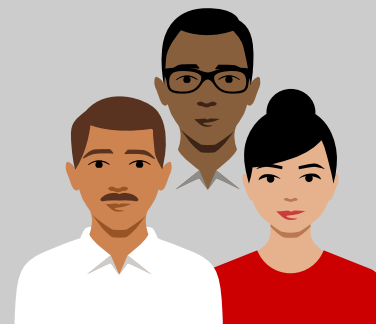
Responses from different demographic groups highlight cultural and ethnic differences in their attitude toward vaccination. These findings help highlight how culturally appropriate awareness campaigns that address each community’s specific concerns can help overcome vaccine hesitancy.

Our survey revealed that Black participants were least likely to seek the COVID-19 vaccine, with only 16 percent interested in receiving a vaccine when one is first available, and 29 percent planning to wait before getting vaccinated. Asian responders were most likely to get the vaccine, but were likely to wait and see (51 percent) rather than get one immediately (21 percent). White participants were also likely to get the vaccine but were split nearly equally between getting one immediately (31 percent) and waiting (35 percent). Both English-speaking (34 percent) and Spanish-speaking Hispanic (42 percent) participants slightly favored waiting compared to getting it immediately (28 percent, 36 percent).



■ I plan on receiving the new COVID-19 vaccine and I would like to get it soon after it becomes available to the public
■ I plan on receiving the new COVID-19 vaccine but I would like to wait until after a decent number of people have already gotten it
■ I am uncertain whether or not I would receive the new COVID-19 vaccine
■ I do not plan to receive the vaccine for COVID-19

Culturally appropriate awareness campaigns that address each community’s specific concerns can help overcome vaccine hesitancy.



Demographic Insights



Demographic insights gleaned from the survey can help target campaigns to promote broad vaccine adoption.

- ✓ **Men** are more likely to be vaccinated than women.
- ✓ **College-educated participants** are more likely to be vaccinated.
- ✓ **Higher-income participants** are most likely to be vaccinated. Lower-income participants are least likely to seek the vaccine right away and most likely to not get it at all.
- ✓ **Urban dwellers** are most likely to be vaccinated; rural dwellers are least likely.
- ✓ **Participants in the Midwest and West** are most enthusiastic about the COVID-19 vaccine. A significant portion of participants living in the Northeast plan to wait or are uncertain about receiving the vaccine. Those in the South are least likely to be vaccinated.
- ✓ **Participants over 55** are more likely to consider or seek COVID-19 vaccination than younger participants.
- ✓ Participants **managing a chronic condition** and those who are immuno-compromised are significantly more likely to seek the COVID-19 vaccine.
- ✓ Participants who have been **tested for the virus** are more likely to seek the COVID-19 vaccine.
- ✓ **Republicans and Independents who lean Republican** are more likely to be uncertain or decline to be vaccinated.

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Additional safety and efficacy data on the vaccines, a successful rollout among priority populations, and targeted outreach efforts could help convince many who are uncertain.

Reasons for Vaccine Hesitancy

Our survey helped reveal that while those who intend to be vaccinated right away feel a need to be protected, safety and side effects given the speed of vaccine development were primary concerns among those who want to “wait and see” or were uncertain about getting vaccinated. It is possible that additional safety and efficacy data on the vaccine candidates in development, as well as a successful rollout among priority populations leading to a reduction in infection rates coupled with targeted outreach efforts, could help convince many in this group.

Top reasons among those who would prefer to wait or were uncertain:

- It seems **rushed/too early**
- Would **have to be convinced** it works
- Not sure if it's **effective**
- **Afraid of side effects**/long-term effects
- **Don't trust it**/don't believe it's safe
- **I'm nervous** about it
- Too many **politics involved** or too much propaganda

Perhaps the most challenging respondents are the nearly one in six who said they did not plan to be vaccinated against COVID-19. They stated that they did not believe they need a vaccine, believed misinformation regarding vaccines, or had misperceptions and mistrust regarding any vaccination effort.

Many of the reasons for vaccine hesitancy — clinical trial speed, overall safety, ingredients — can be addressed through educational efforts.

Impact of a Two-Part Vaccine Schedule

Having multiple vaccines that are administered either as one- or two-dose regimens receive an EUA could help achieve broad acceptance. Of survey participants, 26 percent said they were more likely to get a two-dose vaccine. However, 18 percent stated that it made them less interested. More than half — 56 percent — indicated no change in their interest level.

Key Influencers Can Help Promote Adoption

Our survey also revealed key figures within our communities, and society as a whole, who could play an important role in promoting broad vaccine adoption. To better understand the role of such influencers, we asked participants whose opinion or endorsement of a COVID-19 vaccine — if anyone’s — would make it more likely that they would get a COVID-19 vaccine as soon as one is available. Perhaps not surprisingly, primary care doctors (54 percent); Anthony Fauci, MD (29 percent); and representatives of the Centers for Disease Control and Prevention (CDC) or the FDA (28 percent and 23 percent respectively) emerged as leading influencers. Publications, celebrities, and athletes ranked lowest. Overall, our findings show that trusted health professionals and agencies will play more of a role than non-health influencers.

However, the impact of influencers varied by ethnicity, highlighting once again the need for a targeted approach. Across all groups, participants rated their own doctors highest. Even so, the percentages varied with a high of 62 percent among Asian participants, and lows of 48 percent among Black participants, and 36 percent among Spanish-speaking Hispanics. Asian and Native American participants were more likely to cite the CDC as influencers than other groups. Nearly all respondents who replied “Other” stated that there was no one whose opinion would influence whether they would get vaccinated.

| | Total | White | Black | Native American | Asian | English-speaking Hispanic | Spanish-speaking Hispanic |
|------------------------------------|------------|------------|------------|-----------------|------------|---------------------------|---------------------------|
| Total | N=5,153 | N=3,030 | N=808 | N=134 | N=340 | N=991 | N=150 |
| Your own doctor | 54% | 56% | 48% | 51% | 62% | 53% | 36% |
| Dr. Anthony Fauci | 29% | 29% | 28% | 22% | 45% | 29% | 18% |
| Someone from the CDC | 28% | 26% | 29% | 38% | 42% | 32% | 26% |
| Someone from the FDA | 23% | 21% | 21% | 21% | 35% | 27% | 21% |
| Joe Biden’s Coronavirus Task Force | 18% | 17% | 18% | 17% | 21% | 22% | 20% |
| Joe Biden | 14% | 13% | 16% | 15% | 16% | 19% | 21% |
| A publication you respect | 9% | 8% | 7% | 8% | 17% | 11% | 7% |
| A celebrity you admire and respect | 3% | 3% | 4% | 6% | 3% | 5% | 5% |
| An athlete you admire and respect | 3% | 3% | 4% | 3% | 2% | 4% | 5% |
| Other — Please specify | 14% | 15% | 17% | 19% | 7% | 13% | 9% |

Participants were given the option of choosing multiple influencers.



To be most effective, outreach should be customized and include engagement by clinicians and public health authorities, as well as community-based organizations and a broad coalition of stakeholders.



Our survey provided valuable insights to the important role health care providers and the public health community can play in addressing hesitancy and helping drive widespread adoption of a COVID-19 vaccine.

How CVS Health Plans to Address Vaccine Hesitancy and Access

1 Data and Reporting

We will continue to periodically survey the nation to update our findings. We will create focus groups — with an emphasis on minority populations — to better understand community-specific concerns. Additionally, we are developing reporting for Aetna and CVS Caremark clients to determine uptake of the vaccine.

2 Targeted Messaging

Using these and future survey findings, we will develop targeted messaging to be delivered through traditional and digital media outlets and our in-store channels. We will also train nearly 90,000 clinicians — pharmacists, pharmacy technicians, nurse practitioners, and other professionals — to deliver these messages. We will provide vaccine educational materials to Aetna and CVS Caremark plan sponsors to assist them in empowering their own beneficiaries, employees, and dependents.

3 Providers and Other Influencers as Educators

We will partner with influencers — including health care providers — and other stakeholders across the country to amplify information about the safety, efficacy, and benefits of COVID-19 vaccines. We will also educate Aetna and CVS Caremark members through a variety of channels including as a health and pharmacy benefit provider, and through Aetna's contracted network of providers.

4

Convenient Access to Vaccination Services

We believe convenient access matters. We are present in communities across the country, with more than 70 percent of Americans living within three miles of a CVS Pharmacy. In addition, nearly 60 percent of CVS Pharmacy locations are in communities more vulnerable to the impacts of COVID-19.*

We will provide vaccination services to nearly 30,000 long-term care and skilled nursing facilities in collaboration with the CDC. Nearly all 10,000 of our pharmacies will provide vaccination services. Vaccines will be available by appointment only while supply is limited. Patients will be able to sign up online and schedule their follow-up booster shot at the time of initial scheduling.

CVS Pharmacy locations meet needs of vulnerable populations.



| Social Vulnerability Index** | Number of Stores | % of Total US Population Within Store Radius | | | |
|---------------------------------|------------------|--|---------|---------|----------|
| | | 1 Mile | 2 Miles | 5 Miles | 10 Miles |
| Very High (0.75-1.00) | 2,095 | 8% | 14% | 19% | 22% |
| High (0.50-0.75) | 2,462 | 8% | 15% | 20% | 23% |
| Moderate (0.25-0.50) | 2,697 | 7% | 14% | 19% | 22% |
| Low (0-0.25) | 2,692 | 7% | 13% | 18% | 20% |
| Total | 9,946 | 30% | 57% | 77% | 86% |

One or more safe and efficacious vaccines becoming available will give us the final tool that helps us overcome this pandemic that has already claimed hundreds of thousands of lives. A concerted effort from a broad range of stakeholders can help Americans understand the importance of COVID-19 vaccinations. Insights from this, and additional future research, will inform our outreach efforts through multiple outlets, as well as person-to-person through our 90,000 clinicians in our pharmacies and other local touchpoints.



CVS Health is committed to helping build awareness about the importance of getting vaccinated against COVID-19, and providing safe and equitable access across communities.

Survey Methodology

This survey was initiated the day after Pfizer and BioNTech released their first interim efficacy analysis from their Phase-3 study, which cited their vaccine candidate was found to be more than 90 percent effective in preventing COVID-19. The survey ran nationwide from November 10-15. Invitations were sent via email to individuals who have opted to take surveys. In all, 5,153 people participated.

We constructed our sample to be representative of the U.S. population as described by the U.S. Census Bureau. Participants represent the general population and were not screened as customers of CVS Health. We ascribed quotas based on gender, age, race/ethnicity, and region of residence. Participants had the option of choosing more than one race/ethnicity.

In addition to **demographic factors**, we asked the following set of questions:

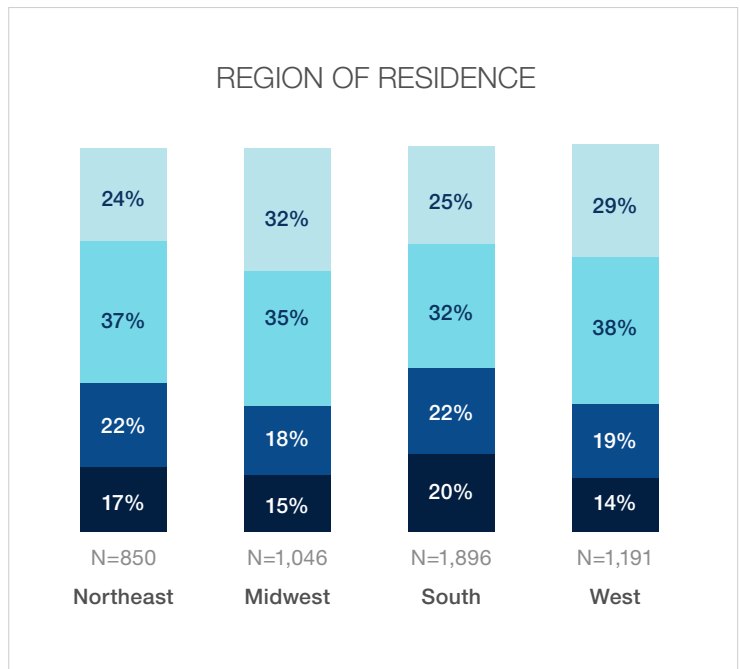
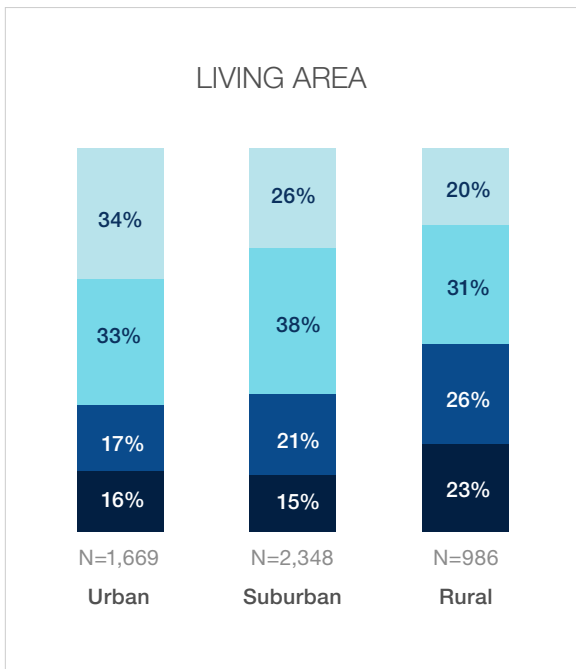
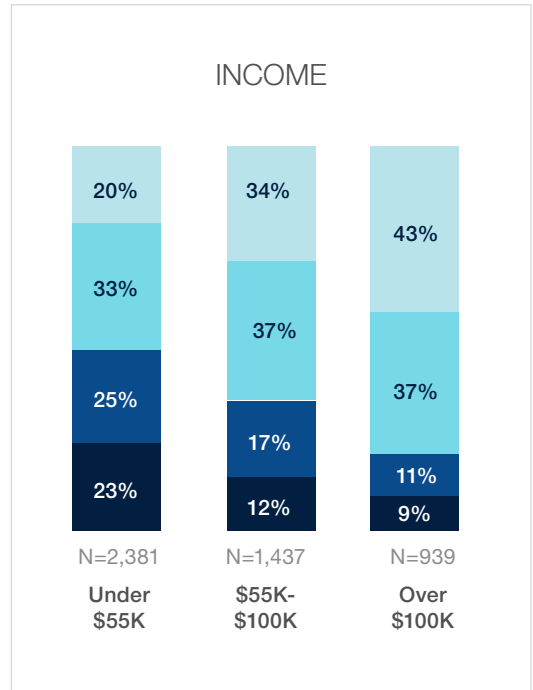
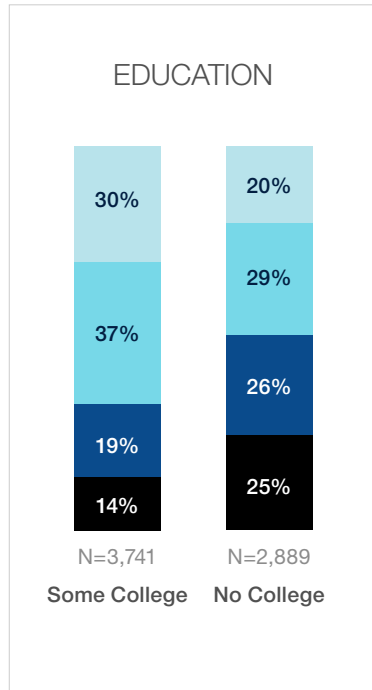
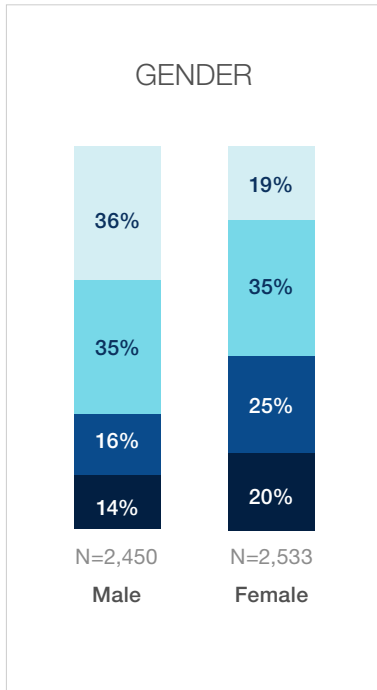
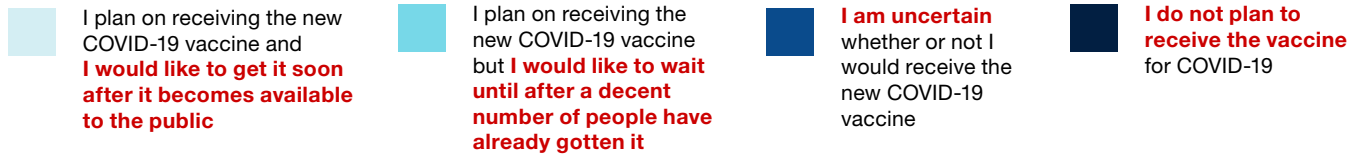
- Assuming that a vaccine is developed to protect against COVID-19, when, if at all, do you think you would want to receive the vaccine?
 - Right away
 - Wait until others get it
 - Uncertain about vaccination
 - Do not plan to get vaccinated
 - Reasons for feeling that way
- The vaccine that is closest to being approved by the FDA requires two doses approximately 21 days apart. How, if at all, does that affect your interest in receiving the COVID-19 vaccine?
- Whose opinion or endorsement of a COVID-19 vaccine, if anyone's, would make you feel more likely to get the COVID-19 vaccine as soon as it becomes available to you?

The percentages are significance tested at the 95 percent and 90 percent levels of confidence using a Z-test. Due to a variety of reasons, including a respondent's choice not to answer and the option to choose more than one answer, data totals may vary and percentages may not add up to 100.

Understanding vaccine hesitancy is critical to effective outreach ensuring widespread adoption across communities.

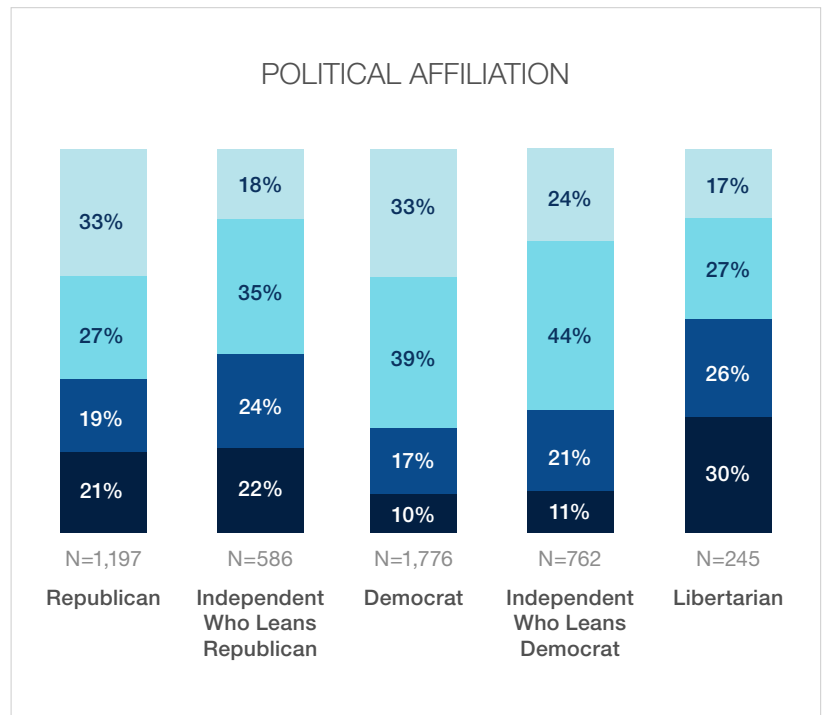
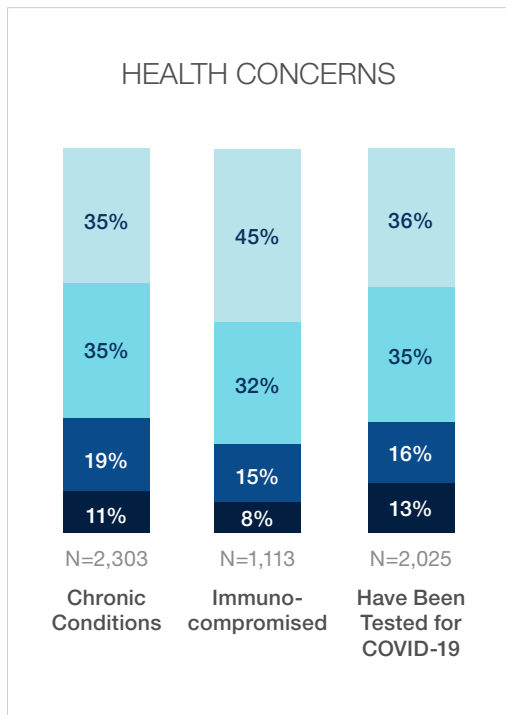
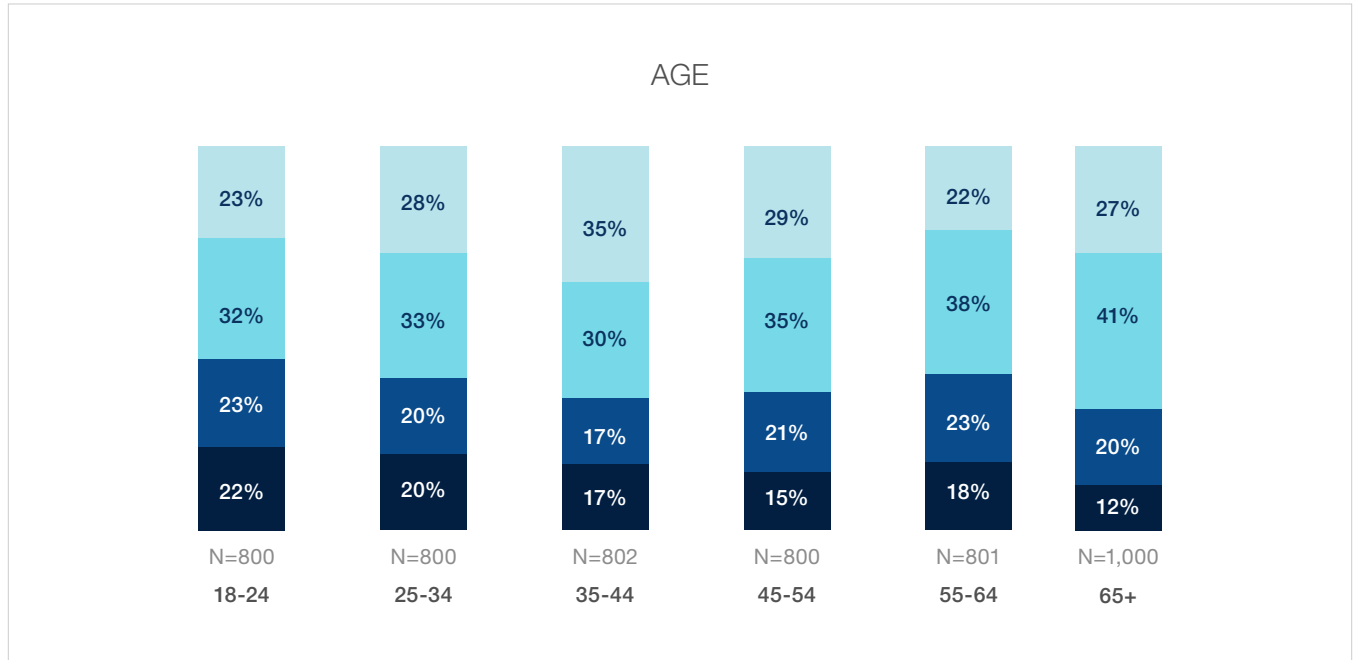
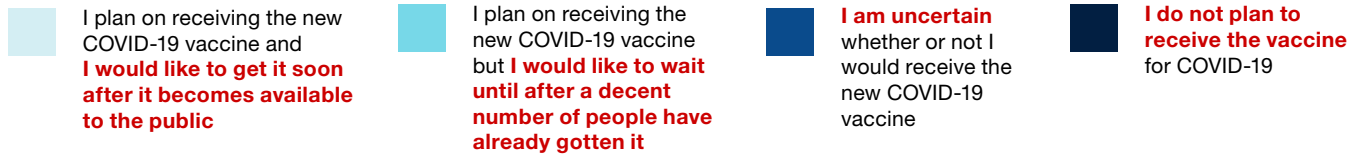


Detail on Survey Responses



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Demographic Breakdown of Survey Participants

| | | N | % |
|--|-----------------------|-------|-------|
| Gender | Male | 2,450 | 49% |
| | Female | 2,533 | 51% |
| Age | 18-24 | 800 | 16% |
| | 25-34 | 800 | 16% |
| | 35-44 | 802 | 16% |
| | 45-54 | 800 | 16% |
| | 55-64 | 801 | 16% |
| | 65+ | 1,000 | 20% |
| | Race/Ethnicity | White | 3,030 |
| Black | | 808 | 26% |
| Native American (including Alaskan Native) | | 134 | 4% |
| Asian (including South Asian) | | 340 | 7% |
| Hispanic | | 991 | 17% |
| Part of the Country | Northeast | 850 | 17% |
| | Midwest | 1,046 | 21% |
| | South | 1,896 | 38% |
| | West | 1,191 | 24% |

*As determined by the CDC's Social Vulnerability Index.

**CDC Social Vulnerability Index (SVI) uses U.S. census variables to identify communities that may need support before, during, or after disasters. Index of store based on SVI Percentile of Census tract in which a store is located; a store's trade area and population may extend beyond the Census tract in which a store is located, capturing populations with different SVI percentile than the tract of the store. CDC, 2018. For nearby stores, store radius limited so population is only attributed to nearest store to avoid double-counting.

Unless otherwise noted, the source for all data cited in this paper is the Baseline Vaccine Attitude Survey developed and analyzed by CVS Health Enterprise Insights. All data reported as "total sample" is based on English-speaking survey participants (including people who self-identify as Hispanic and speak English primarily.) A small sample of unacculturated Hispanic consumers was analyzed separately.

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