# U.S. General Population COVID-19 Vaccine Uptake Survey: A Psychobehavioral Approach to Promoting COVID-19 Vaccine Uptake

Overview

How can we prioritize scarce time and resources to propel the COVID-19 vaccination effort? Surgo Ventures conducted a survey of 2,747 U.S. adults using the NORC AmeriSpeak nationally representative panel to answer that question.

Our survey (conducted from December 20, 2020 - January 4, 2021) found that 40% of Americans are highly likely to get the vaccine, with the remaining 60% falling into less likely segments with a variety of concerns and barriers shaping their likelihood. But by digging deeper into that 60% of Americans—specifically **by prioritizing three psychobehavioral segments (43% of Americans) who we identified as persuadable**, we believe we can increase COVID-19 vaccine uptake as we need to in order to reach community immunity and overcome the pandemic.
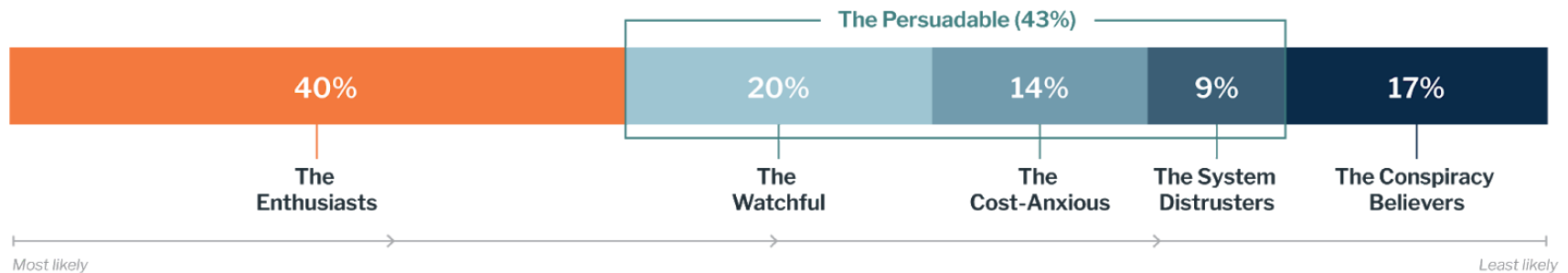
The barriers to COVID-19 vaccine uptake are well-documented. It's widely known that concerns about safety, side effects, efficacy, community norms, rushed approval, and more make people less likely to vaccinate. Therefore, it's not a question of

what the barriers are; **the key question is which barriers should we focus on in the limited amount of time we have** due to the unique nature of this pandemic.

This question is a simple one, but it still hasn't been easy to answer for policymakers, health officials, and other decision makers charged with increasing vaccine uptake. Amid the largest public health crisis in more than a century, where time is of the essence, who and what do you focus time and effort on first? Certain subgroups—women, Republicans, essential workers, Black individuals, rural residents, and those with lower incomes and education levels—tend to express lower likelihood of taking the vaccine, but these groups are not a monolith. **Our approach requires going beyond just demographics to look at the barriers: what truly drives someone's decision to get vaccinated.**

Each of the psychobehavioral segments we've identified is quantifiable and is tied to clear perceptual and contextual barriers. Our results provide time- and resource-pressed decision makers with a clear guide on where to focus to increase COVID-19 vaccination coverage, and suggest evidence-based ideas for how to reach these segments.

Psychobehavioral Segment Profiles

Segment, % of Population	Enthusiasts, 40%	Watchful, 20%	Cost-Anxious, 14%	System Distrusters, 9%	Conspiracy Believers, 17%
Likelihood (X/10)	9.37	4.91	4.16	3.81	2.34
Early Adopter*	100%	0%	11%	9%	3%
Who are they?	Tend to be older and male	Tend to be older and female	Tend to be younger, live in rural areas and work as essential or frontline workers	Tend to be younger, lower income, essential workers, and belong to the Black/minority communities	Tend to be Republican and live in rural areas
Key Barriers	**No formidable barriers**: All early adopters who are extremely worried about COVID-19.	**Community Norms:** Don't want to be the first to get the vaccine; Worried about short- and long-term side effects	**Cost and Time:** Mean perceived cost of vaccine is more than amount willing to pay for vaccine; Majority say they are less likely to take vaccine over concerns around long-term physical side effects	**Trust, Access, Inequity:** Belief that the vaccine has not been adequately tested for their race/ethnicity; Low trust in health system	**Barriers too great to overcome in the short term:** Entrenched beliefs that the vaccine is unsafe, and belief in COVID-19 conspiracy theories; Low risk perception of catching COVID-19
How to get them vaccinated	Make the vaccine free and easy to get with a streamlined sign up process and local vaccine clinics; Leverage this group to promote	Emphasize community norms by making it visible that others are getting vaccinated, encouraging family conversations, and	Promote messaging from credible sources that the vaccine is completely free; Make vaccinations available at employment sites;	Track and elevate data on racial disparities in vaccination, Host listening sessions with communities and	Deprioritize this group while continuing to counter misinformation online; Identify trusted figures that could serve as influencers

	vaccination in their communities	amplifying positive vaccination stories	Offer employees time off to get the vaccine	vaccination clinics in local venues	
More detailed findings					
COVID-19 Worry*	79% are at least moderately worried about catching COVID-19	71% are at least moderately worried about catching COVID-19	58% are at least moderately worried about catching COVID-19	66% are at least moderately worried about catching COVID-19	19% are at least moderately worried about catching COVID-19
Health Access*	>90% have health insurance 15% have delayed care due to cost	>90% have health insurance; 0% have delayed care due to cost	Only 72% have health insurance All have delayed care due to cost	Only 75% have health insurance 15% have delayed care due to cost	>90% have health insurance 15% have delayed care due to cost
Beliefs*	The majority believe the vaccine is safe and only a small percentage believe in COVID-19 conspiracy theories	12% think vaccine unsafe, 31% think safe, 57% don't know; 22% believe a conspiracy theory	32% think vaccine is unsafe, 21% think it is safe, and 47% don't know; 62% believe a conspiracy theory	26% think vaccine it is unsafe, 19% think it safe, 55% don't know; 41% believe a conspiracy theory	48% think it is unsafe, 10% think it is safe, 42% say they don't know; All believe at least 1 conspiracy theory
What is their community doing?	Most likely to live in communities that **wear masks** and have **positive attitudes toward vaccination**. 90% believe more than half of their community will get the vaccine.	More likely to live in communities with **widespread mask wearing but low expectation of vaccine uptake.** Very few think COVID-19 is exaggerated.	More likely to live in communities where there is **low expectation that community members will get the vaccine**.	More likely to live in communities where there is **low expectation that community members will get the vaccine** and **many consider COVID-19 a threat**.	Most likely to live in communities which **see COVID-19 as exaggerated**, prefer alternative medicine, and have **negative attitudes towards vaccination**.
Where do they get their	Receive news from a variety of sources	Receive news from TV sources, CDC, WHO,	Receive news from a variety of sources,	Receive news from TV sources, CDC, WHO,	Receive news from their church, social

information?	ranging from doctors to scientists to social media sources.	and doctors.	including scientists, doctors, TV, CDC, and WHO.	and doctors. More likely to receive news from their church.	media, and Fox News. Most likely to believe information from Donald Trump.
Who do they seek advice from?	Doctors (70%); family (24%)	Doctors (66%); Family (30%)	Doctors (50%); family (25%)	Doctors (44%); family (29%); friends (5%); no one (17%)	Doctors (44%); family (27%); no one (18%)

*These categories represent the 7 variables used to conduct the cluster segmentation as outlined in the Methodology section below.

Methodology

The final survey sample consisted of 2,747 U.S. adults older than 18 run from December 21, 2020 to January 4, 2021. Data was collected using a probability-based household panel (NORC AmeriSpeak). The survey was conducted online and over the phone and in both English and in Spanish. We oversampled Black and Latinx respondents, see Table 1. The sample is representative of the U.S. population and weighted to population benchmarks.

Segmentation methodology

A k-medoid partitioning around medoids (PAM) clustering algorithm (with a Gower distance metric) was used to identify clusters of individuals that differed on the following seven variables:

1. **Health insurance status** (whether an individual had health insurance)
2. **Cost barriers to medical care** (whether an individual had delayed medical care in the past year because of cost)
3. **Degree to which an individual agreed the COVID-19 vaccine was unsafe**
4. **Degree of worry about COVID-19**
5. **Early adoption** (whether an individual said they would get COVID vaccine in first three months it is offered)
6. **Conspiratorial belief score** (0-3 score; 1 point each for agree with the following statements: vaccine would insert a tracking chip; COVID-19 is caused by ring of people who manipulate world events; COVID-19 is being exploited by government to control people)
7. **Perception of racial fairness in medical system** (agreement with statement that people of your race are treated fairly in a healthcare setting)

These variables were selected for segmentation based on their relationship to self-reported COVID-19 vaccine likelihood observed in predictive models and their actionability in order to identify population groups and effective

interventions. After segments were defined, they were then profiled on COVID-19 vaccine uptake likelihood as well as a variety of demographic and other characteristics. Cluster solutions from 3 to 8 groups were explored. The 5-cluster solution was considered most actionable based on differences between segments in vaccine likelihood barriers and perceptions and is reported here.

Percent of individuals in each cluster represents the population-weighted proportion of respondents in each segment.

Below is the demographic makeup of the sample.

Table 1. Sociodemographics of our sample

Group	Sample Size
Total	2747
Gender	
Man	1256
Woman	1371
Non-binary	39
Other/prefer not to answer	60
Geographic Region	
Northeast	404
Midwest	672
South	999

West	672
Race/Ethnicity	
Latinx	520
White	1627
Black, African or African American	393
Asian, Native Hawaiian, or Pacific Islander	61
2+ races, non-Hispanic	104
Other, non-Hispanic	42
Party Identification	
Democrat	1037
Independent	756
Republican	775
Other	152