

VACCINE HESITANCE DURING COVID-19

Exploring Motivations and Incentives



Executive Summary

As rates of vaccination have slowed, concerns are growing about how to increase vaccine uptake among those who are vaccine hesitant, particularly with the emergence of new and contagious variants such as Delta. Using our national Socioeconomic Impacts of COVID-19 Survey, we examine the predictors of vaccine hesitance in the U.S. and report on findings from an experiment assessing the potential impacts of vaccine incentive schemes.

Our study points to the difficulties in overcoming vaccine hesitance among the unvaccinated. Vaccine hesitance was common across income levels, and experience with COVID-19-related hardships—such as knowing someone who died of the disease or losing a job due to the pandemic—were not strongly correlated with a willingness to get the vaccine. Additionally, the main reasons respondents gave for not getting vaccinated included distrust of government and pharmaceutical companies. When examining strategies for improving vaccination rates, we found that while offering a vaccine free of cost was associated with a higher likelihood of vaccination, offering a small \$5 incentive was associated with a lower likelihood of getting vaccinated. Further, offering a \$100 incentive was not any more effective than offering the vaccine for free.

Several incentive strategies have been introduced recently to help encourage vaccine uptake. However, our results add to the body of research that suggests incentives may not be an effective strategy for the vaccine hesitant. While it has been challenging to identify and overcome the various reasons for vaccine hesitance, current efforts could be bolstered by developing a multi-faceted approach that targets underlying distrust and social beliefs held by those who are most hesitant.

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Background

COVID-19 vaccination rates have lagged in many states across the U.S., and some localities have implemented cash and lottery incentives to encourage vaccination uptake. However, data on the effectiveness of incentives is mixed¹ and some states have found that vaccination rates remained low despite these incentive programs. This may be because hesitance is based on social or political beliefs, such as distrust of government and pharmaceutical companies², and is therefore unlikely to be sensitive to incentives. Others suggest that offering monetary incentives may be interpreted as a sign of risk³, which may further discourage vaccination.

Because widespread COVID-19 vaccination is necessary to end the pandemic, it is important to understand and develop strategies to overcome vaccine skepticism. The purpose of this brief is to examine the profile of the vaccine hesitant, and to assess how different incentive schemes may impact vaccine hesitance.

Methods

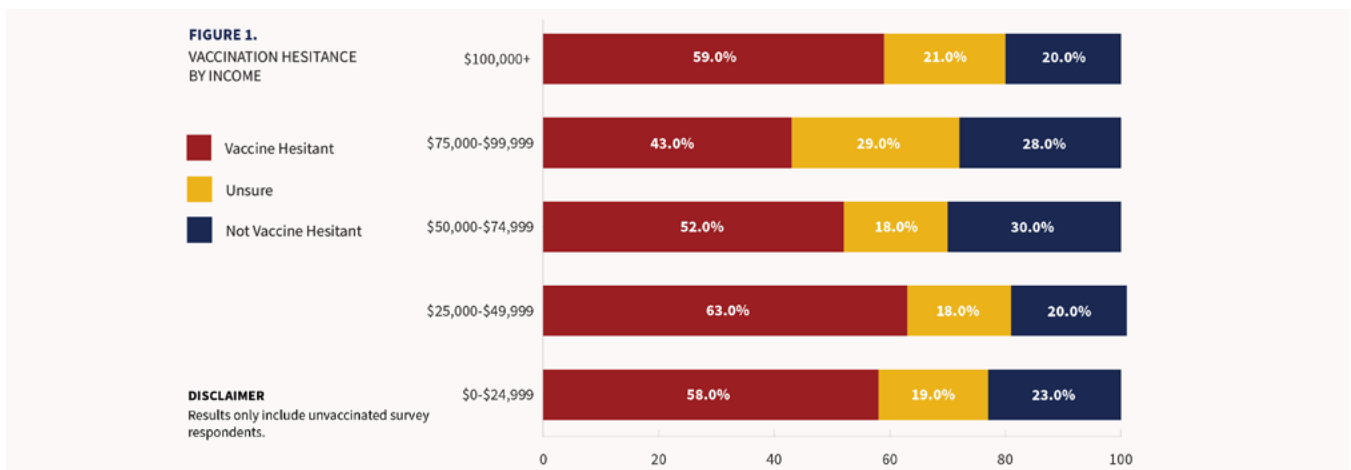
This brief includes data from the nationally representative Socioeconomic Impacts of COVID-19 Survey conducted by the Social Policy Institute at Washington University in St. Louis, which includes roughly 5,000 respondents followed over five waves from late April 2020 to May 2021. You can learn more about the survey and its data collection through the survey methodology report.

Data from the fifth and most recent survey wave were used to construct the vaccine hesitance profile. These survey responses were collected between May and June of 2021. Experimental survey data on vaccine incentives were from the fourth wave of the survey, which was administered as vaccine efforts in the U.S. began ramping up, between February and March of 2021.

Findings

WHO ARE THE VACCINE HESITANT?

In our sample, 72% of adults reported that they were vaccinated. Among respondents who had not received any COVID-19 vaccine, 57% reported that they were somewhat or very unlikely to get vaccinated; we classify these individuals as “vaccine hesitant.” In this section, we examine the profile of the vaccine hesitant to understand the extent to which their hesitancy may be motivated by their circumstances or experiences.

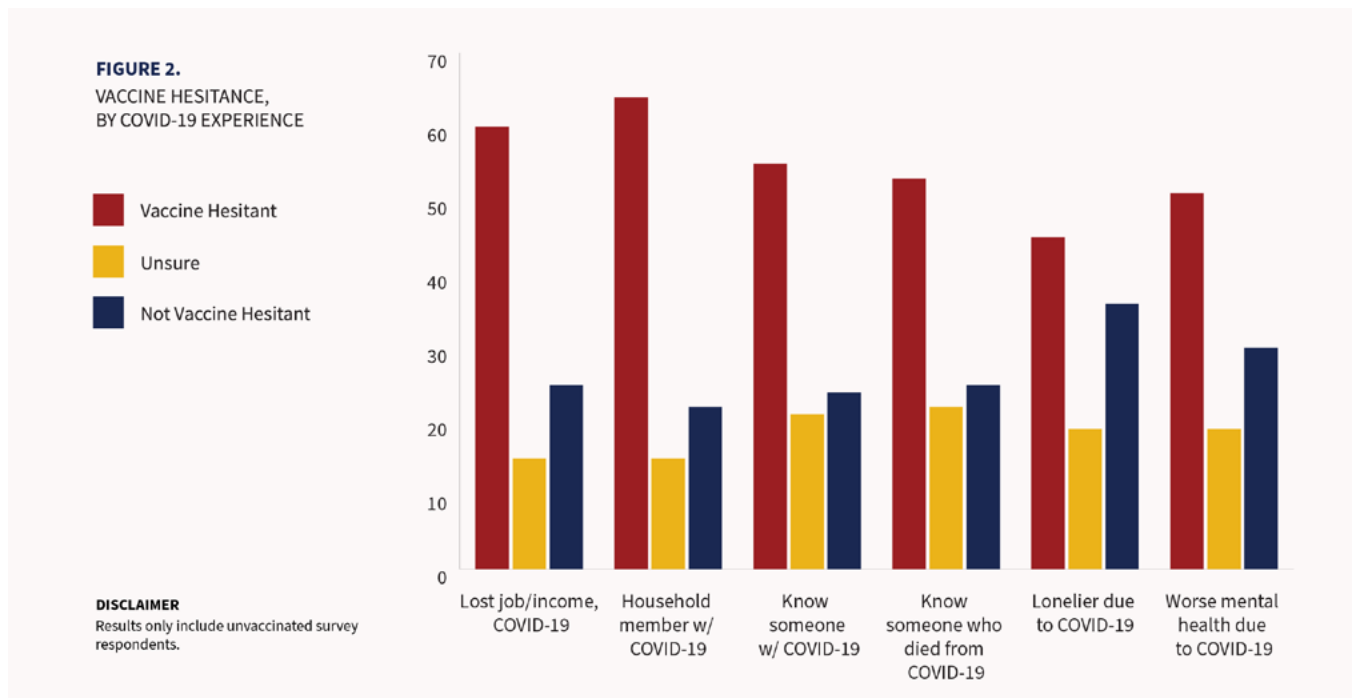


1 Josie Fischels. “Get \$100 For A Vaccine? Cash Incentives Work For Some, Others Not So Much,” NPR, July 30, 2021, <https://www.npr.org/2021/07/30/1022567245/vaccine-cash-incentives-100-dollars-lotteries-effectiveness>

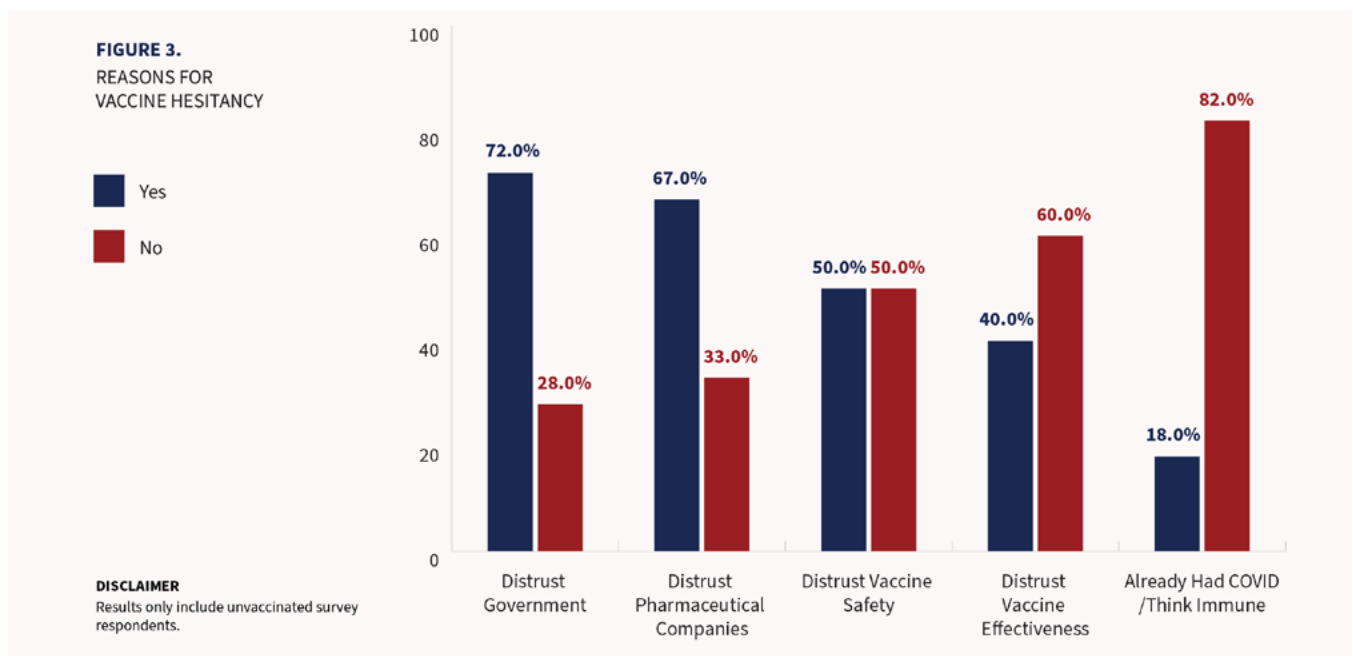
2 Sabrina Tavernise. “Vaccine Skepticism Was Viewed as a Knowledge Problem. It’s Actually About Gut Beliefs,” The New York Times, April 29, 2021, <https://www.nytimes.com/2021/04/29/us/vaccine-skepticism-beliefs.html>

3 Cynthia E. Cryder et al. “Informative inducement: Study payment as a signal of risk,” Social Science & Medicine 70, no. 3 (2010): 455-464. <https://doi.org/10.1016/j.socscimed.2009.10.047>

Figure 1 examines the vaccine hesitance of respondents based on their incomes. We found that, overall, income did not appear to be a strong predictor of vaccine hesitance. For example, 58% of those with incomes less than \$25,000 were vaccine hesitant, as were 59% of those with incomes above \$100,000.



Next, we examine the extent to which vaccine hesitance correlates with respondents' experiences with COVID-19. Of the respondents, 15% reported having lost a job or income due to COVID-19. Half of respondents knew someone who tested positive for COVID-19 (48%), and 18% knew someone who died from COVID-19. Additionally, 41% of unvaccinated respondents reported having worse mental health due to COVID-19-related stress and another 27% reported feeling increased loneliness due to COVID-19.



In general, there was no clear pattern between these adverse COVID-19-related experiences and vaccine hesitance. Figure 2 shows that roughly 53-65% of those who had lost a job/income due to the pandemic, had a household member who tested positive for COVID-19, knew someone with COVID-19, or knew someone who died from COVID-19 were vaccine hesitant. Additionally, 45%-51% of those who were lonelier due to the pandemic or who reported worse mental health due to the pandemic were vaccine hesitant.

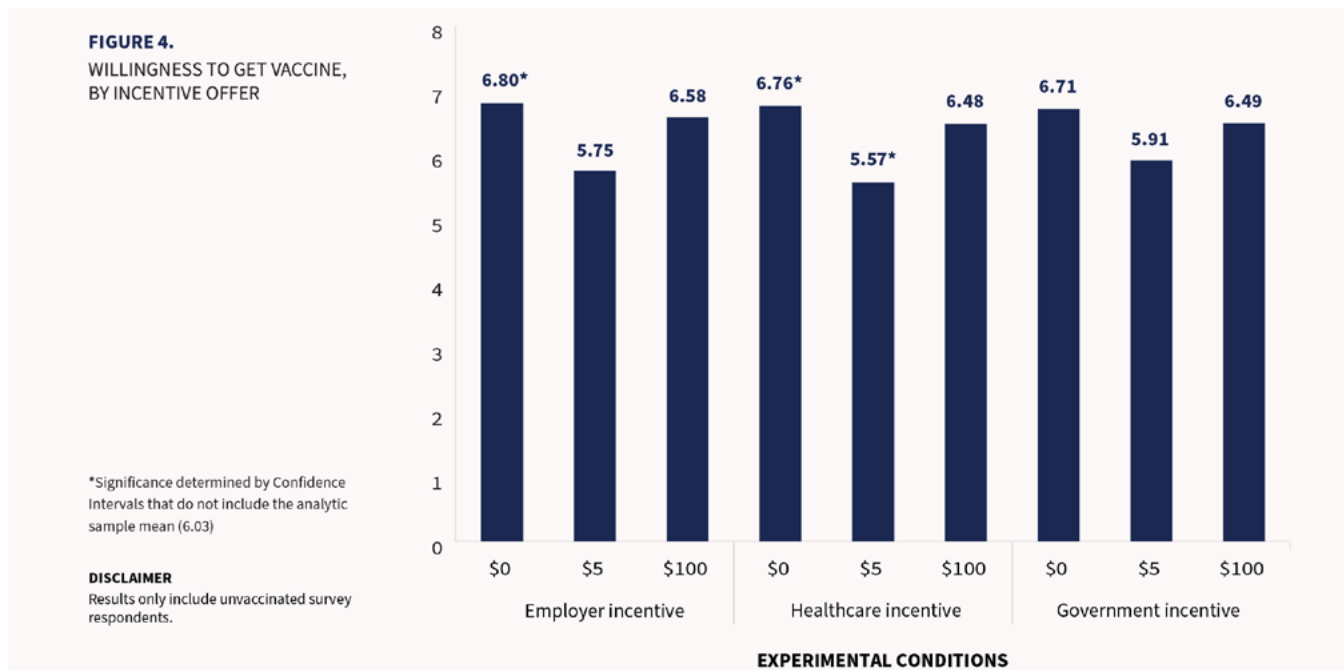
Figure 3 displays motivations for widespread hesitance among unvaccinated respondents. We found that among those who were vaccine hesitant, 72% said they would not get a vaccine because they distrust the government, and 67% said they would not get a vaccine because they distrust pharmaceutical companies. Half said they were hesitant due to vaccine safety concerns (50%), 40% distrust vaccine effectiveness and 18% believed they were immune because they were previously infected with COVID-19.

VACCINE INCENTIVE EXPERIMENT RESULTS

We next study the impact of incentives on vaccine hesitance. We conducted an experiment testing unvaccinated respondents' willingness to get vaccinated based on nine treatment conditions. Respondents (n=3,468) were prompted to rank their willingness to get a COVID-19 vaccine on a scale of zero to 10 based on one of the following assigned conditions:

- Federal Government/Employer/Healthcare Provider offered a free vaccine
- Federal Government/Employer/Healthcare Provider offered a \$5 incentive to get vaccinated
- Federal Government/Employer/Healthcare Provider offered a \$100 incentive to get vaccinated

This approach allows us to test two mechanisms through which incentives can affect willingness to get vaccinated: the incentive amount (\$0, \$5, \$100), and the source of the incentive (government, employer, healthcare provider). The average score of willingness to get vaccinated was 6.3. However, vaccination willingness scores varied across treatment conditions. For example, we see a statistically significant increase in vaccine willingness among those in the treatment groups where the employer offered a free vaccine (score=6.8) and where a healthcare provider offered a free vaccine (score=6.8) as compared to the average. Conversely, those in the treatment group where the employer offered a \$5 incentive (score=5.7) and where health insurance offered a \$5 incentive (score=5.6) were significantly less willing to get vaccinated than the average. Incentives offered by the government did not have a significant impact nor did incentives at the \$100 level.



This speaks to the challenge of using incentives to motivate vaccination. Vaccinations offered with no incentive appear more appealing to the unvaccinated than offering small incentives, and even offering \$100 is no more appealing than offering no incentive. Moreover, this pattern was the same regardless of whether it came from the federal government or a more politically neutral source like an employer or a healthcare provider.

Implications

These findings point to the difficulty in overcoming vaccine hesitance. The vaccine hesitant appear to be from diverse economic backgrounds and do not appear sensitive to events that might otherwise change their risk perceptions of COVID-19, such as knowing someone who died of the virus or losing a job because of the economic effects of the pandemic. In addition, our findings revealed that those who were vaccine hesitant were primarily reluctant due to government and pharmaceutical company distrust—a distrust that may be caused by deep-rooted beliefs (or lived experiences) about society, the role of government, and the practices of large corporations. Further, we found that incentives were not only ineffective in improving vaccine likelihood, but small incentives had a negative impact on the likelihood of getting a vaccine. These results support studies that have suggested incentives may not be effective among those who are hesitant due to distrust or other social beliefs, and indicates a need for diverse COVID-19 vaccine promotion strategies.

Policy should incorporate multi-faceted outreach to promote vaccine uptake. Some have argued that effective COVID-19 vaccine promotion requires adaptable messaging to address specific needs and barriers. One study presented a tiered approach⁴ of COVID-19 vaccination communication priorities based on level of hesitance. Strategies unique to the most hesitant group included judgment avoidance, collaboration with opinion leaders, identity framing, messaging about a common enemy and message framing that allows for a change of opinion without “losing face.”

A particularly promising approach presented through the tiered approach involves identity framing. This approach relies on qualitative research (particularly through social media) to identify key determinants of why COVID-19 vaccination challenges the identity of those who are vaccine hesitant, and designing subsequent campaigns that address those identity conflicts. Because of the strong association between vaccine distrust and political/personal identity, incorporating identity framing in vaccine messaging could be a useful tool in improving vaccination rates among those who are hesitant due to distrust.

However, while there may be promising approaches to addressing some vaccine hesitancy in the current pandemic, the insensitivity to adverse COVID-19 experiences and vaccine incentives we observed in this study indicates that there may be no easy short-term solution to getting holdouts vaccinated. Moving the needle substantially on vaccination rates may require more heavy-handed approaches like mandates. These approaches will likely be costly in terms of money, political capital, and sowing additional distrust in a population already primed toward distrust of the government and healthcare institutions. In the future, these costs—as well as the massive costs in terms of lives lost and reduced economic output—would likely be reduced if the discourse around the pandemic, public health regulations and treatment options were less polarized from the onset of a public health emergency.

The research in this brief does not reflect the opinions or views of the funders

4 Stacy Wood and Kevin Schulman. “Beyond politics- promoting COVID-19 vaccination in the United State,” *New England Journal of Medicine*, February 18, 2021, <https://www.nejm.org/doi/full/10.1056/NEJMms2033790>