MEMO TO: Faith in Science

RE: Improving Uptake of COVID-19 Vaccine for BIPOC Populations in Rhode Island

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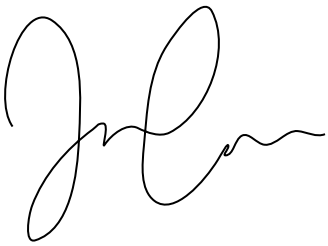
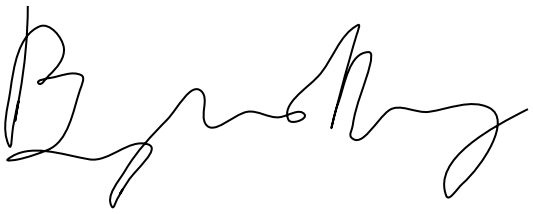
MLD 301: Leadership Decision Making

Harvard Kennedy School

April 27, 2021





Executive Summary

Through literature review, application of behavioral insights, and analysis of survey data, we make the following recommendations to Faith in Science (FiS) to increase vaccine uptake amongst Black, Indigenous, and People of Color (BIPOC) communities in Rhode Island. The purpose of this memo is to provide evidence-based strategies for FiS to implement within their congregations to support reaching their goal of at least 75% vaccination rate across BIPOC communities in Rhode Island. In our report, we concur with the evolved understanding that FiS representatives expressed regarding low vaccination rates in the BIPOC community likely attributed to lack of access and less due to vaccine hesitancy.

We intended to utilize a survey to collect data measuring how the target population's behavior may change with various interventions however, as we understood from our stakeholders that access to vaccine appointments seemed to be a more concerning barrier to vaccine uptake we pivoted our plans. In our survey design, we intentionally tested the impact of defaults to examine whether participants would get the vaccine if by default they were opted-into an appointment. Our data, consistent with the literature, demonstrates that there is indeed demand for the vaccine amongst BIPOC communities in Rhode Island and it is likely that pre-scheduled appointments would be effective.

To support increased vaccine uptake, we enclose recommendations for a vaccine registration volunteer program and advocate for pre-registration systems designed to remove barriers to access and increase uptake. We also outline ways to neutralize risk through both gain and loss framing, as well as targeted communications strategies for populations that remain hesitant despite interventions to improve access. These recommendations incorporate choice architecture and nudges designed to debais how information is presented and streamline decision-making, while acknowledging their tradeoffs accordingly. To assess the effectiveness of our interventions we propose tracking outcomes of each intervention and running controlled-conditioned tests to help FiS track progress-towards-goal and make necessary adjustments along the way.

Introduction

In collaboration with Faith in Science, our project endeavored to ensure BIPOC communities in Rhode Island trust their faith leaders' recommendation for COVID-19 vaccination. Specifically, we aimed to identify barriers to vaccination uptake through surveying the target population and developing communications strategies tailored to address their concerns.

Literature & Expert Interview Review

BIPOC populations across the U.S. have been disproportionately affected by COVID-19, with higher rates of severe cases and deaths (*The COVID Racial Data Tracker*, 2021). This mirrors the systemic inequities in the social determinants of health that are linked to COVID-19 risk (Williams & Cooper, 2020). Initial data also shows that BIPOC populations are receiving smaller shares of vaccinations compared to both their shares of the total population and their shares of COVID-19 cases and deaths (Ndugga et al., 2021). Research on risk perceptions of the vaccine from May 2020 found that Black Americans reported lower influenza vaccine uptake and lower COVID-19 vaccine acceptance compared to nearly all other racial groups (Malik et al., 2020).

A primary barrier to vaccination can be an individual's thoughts and feelings--particularly worry, regret, and fear--that stem from their risk appraisals of the disease itself as well as of the vaccine (Brewer et al., 2017). However, in an interview, Rhode Island EOHHS Secretary Jones stated that, "This isn't about hesitancy within the BIPOC community. This is about access" (W. Jones, personal communication, March 24, 2021). In multiple conversations with Pastor Jenkins, he referenced the same concern, noting that age and political affiliation or identity seem to be stronger indicators for vaccine hesitancy (H. Jenkins Jr., personal communication, March 24, 2021). In particular, people of color under the age of 35 seem to be more hesitant to get the vaccine, based on observations by FiS and its partners (A. Brown-Hathaway, personal communication, March 5, 2021). Further research by our team found that gender may also be a differentiator, as research has shown that women are more willing than men to participate in vaccine trials (Sun et al., 2021), while initial data also shows that women are getting COVID-19 vaccines at higher rates than men (CDC, 2020). It is notable that more women responded to the United Way survey (73% of respondents identified as female N=48) perhaps indicating that women are more likely to engage in communications related to health (United Way, 2021).

Through our research and interviews, access was referenced in multiple instances as a primary barrier for BIPOC populations in Rhode Island. Secretary Jones noted that the initial rollout of vaccines prioritized those groups are not primarily composed of people of color. Secretary Jones further stated that more intentionality is needed to ensure access is equitable (W. Jones, personal communication, March 24, 2021). Pastor Jenkins and Reverend Lerner corroborated this concern, stating that, "Given what we are hearing about the high interest in vaccination at least in middle age and older people of color, this suggests that the issue of vaccine access is contributing to the inequity of those current percentages of vaccinated populations" (H. Jenkins Jr. & E. Lerner Maclay, personal communication, March 24, 2021).

Overcoming barriers of hesitancy, access, and racial disparities will require a range of interventions, including targeted communications, recall systems, and default mechanisms. Specifically, increasing risk appraisal has been found to have a small effect on behavioral changes (Parsons et al., 2018). Targeted communications can increase individuals' risk appraisal

by increasing their belief in the risk of the disease as well as the efficacy of a vaccine in reducing that risk. It is important that the process of developing communications which focus on BIPOC populations includes both cultural humility and community engagement (Malik et al., 2020). In addition, there is a key question around who the communications should come from.

Research has found that recommendations from a healthcare provider are often the most trusted (Brewer et al., 2017). This aligns with the findings from the FiS-United Way survey where 72.92% of respondents trust their family doctor or healthcare provider a great deal and the remaining 27.08% trust them somewhat (United Way, 2021). Lessons learned from the Ebola epidemic provide evidence for the positive impacts of this approach, as trusted and local sources were necessary "to ensure local knowledge and buy-in, to build trust, to undermine rumours, to avoid an alienating top-down approach, and to ensure communication to the population is conducted in the local dialect" (UNICEF, 2020). Interviews with the FiS team highlighted an interest in finding more volunteers from the BIPOC population, indicating the importance of the homophily bias in making people feel comfortable and more willing to get the vaccine (H. Jenkins Jr. & E. Lerner Maclay, personal communication, April 21, 2021).

Furthermore, recalls have been found particularly effective in helping to remind people of their intentions to be vaccinated as well as providing a timing trigger (Brewer et al., 2017). Default mechanisms have been less comprehensively tested, but are one way to remove the time and effort barrier of scheduling an appointment (Brewer et al., 2017). This may be helpful for elderly populations and those with limited internet access. An approach that uses elements of both recall and default involves using trusted community members to support individuals in booking appointments for them. Once appointments are booked, they are less likely to opt-out of getting vaccinated, even if they need to reschedule their appointment (Brewer et al., 2017).

Survey Design

Heeding preliminary research and distilling takeaways from conversations with FiS, we developed a survey to assess young-adult BIPOC communities in Rhode Island's attitudes towards the vaccine. The survey was shared through a paid social media ad for ten days targeting users between the ages 16 to 35 in Rhode Island. It was incentivized with the opportunity to enter a raffle to win a $10 Amazon Gift Card. A link to the ad was also shared among FiS community partners and congregation members. Ultimately, our survey assessed a variety of metrics including the respondents' level of worry surrounding the vaccine, demographic information, intention to take (or not take) the vaccine, and theoretical responsiveness to a vaccine pre-registration program.

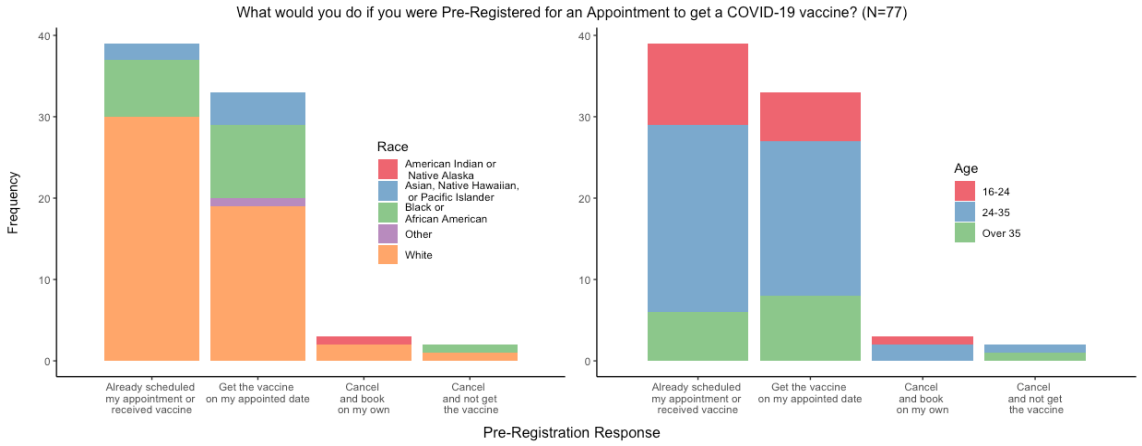
Analysis of Survey Data

Our survey received 77 responses - all with Rhode Island zip codes. We acknowledge this small sample size, but we believe that there is valuable descriptive information in this data. The demographic responses can be seen in the appendix and show that our survey primarily received responses from younger individuals (the focus of our work), women, and both white people and African Americans.

Due to the diverging nature of our survey (some people received different questions due to previous answers), only responses to some of the questions were useful. Specifically, we believe

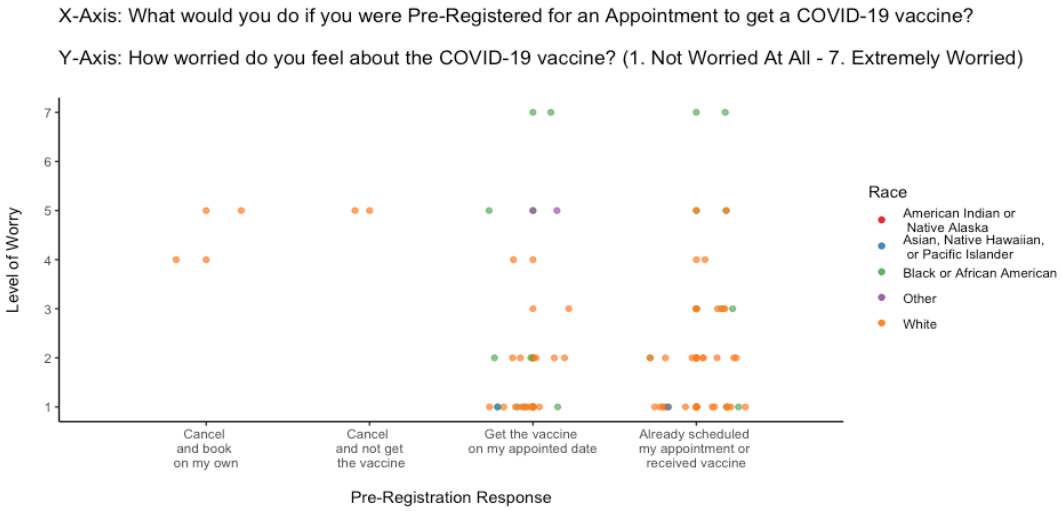
that the preregistration responses are indicative of many individuals' potential willingness to get vaccinated if the opportunity presents itself. As can be seen in Figure 1, both whites and African Americans demonstrated a strong willingness to get the vaccine if registered[1]. In fact, over 90% of respondents selected that they already have an appointment or would keep an appointment if pre-registered. Additionally, those across age groups--especially our age groups of interest (youth)--displayed similar inclinations.

Figure 1.



Additionally, these attitudes were consistent across races and levels of worry. That is, as can be seen in figure 2, even the individuals assessed in our survey who were the most worried about the vaccine, state that they already had an appointment or would keep an appointment if scheduled. Even more important, people of color who were *the most* worried stated their willingness to keep a vaccine appointment if they were pre-registered.

Figure 2. (N= 63)[2]



[1] All other races had too small an answer rate to come to any reasonable conclusions.
[2] 14 responders answered the pre-registration question, but did not answer the level of worry question.

These insights directly support our recommendations, in that we may be able to help improve vaccine uptake in BIPOC communities with worried individuals by simply improving ease of access to the vaccine, or making access automatic.

It is important to note this survey's limitations. The survey was in no way random, and there was likely a selection bias in who was willing to fill out the survey. That is, people with certain views around the vaccine may have been more or less likely to fill out a survey. Additionally, these are *preliminary* results and we would want far more data to make the most definitive conclusions about vaccine hesitancy within our group of interest. In the future, conducting a truly randomized survey with more people and effective conditions could improve the possibility that we are able to make causal claims about our data and offer more robust recommendations to FiS. For these reasons, we use the data analysis as a way to support our conclusions, but not as the foundation for our recommendations.

Recommendations

We make the following recommendations for a volunteer program and pre-registrations systems to increase BIPOC access to vaccines, while incorporating choice architecture designed to decrease vaccine hesitancy, and utilize existing infrastructure available to FiS and their congregations.

Strengthen and structure volunteer program: This volunteer program would designate individuals in specific communities who are trained to help register people for appointments (to overcome lack of internet access, language barriers, etc.). Building on what Pastor Jekins has organized at Bethel AME in Providence, incorporating default/opt-out models into registration efforts with his congregation and surrounding communities would improve vaccination uptake outcomes. Volunteers could register BIPOC community members directly and efficiently. Volunteers will streamline access to appointments and be available to make adjustments, or personalize nudges to increase uptake, individually. To ensure that this registration volunteer program is most effective, volunteers should be recruited across all languages and races represented in the community.

Provide a simple way for people to automatically pre-register for appointments: We recommend that FiS organizations pre-register their congregants and members for a COVID-19 vaccine. This would provide an appointment by default, with the individual able to opt-out or cancel their appointment. The volunteers would pre-register individuals and text or call with an alert that an appointment is scheduled. Based on our literature review, the results of our survey, and conversations with Pastor Jenkins and Reverend Lerner, we anticipate that this would result in an increase in vaccine uptake from hesitant community members.

Neutralizing framing of risk in communications: In the event that community members wish to opt-out of the vaccine appointment, or respond asking for more information, volunteers should be prepared with additional information about COVID-19 and the vaccine framed from both the loss frame (i.e.: what individuals have to lose by contracting COVID-19 and/or not getting a vaccine) and the gain frame (what individuals will gain by receiving the vaccine).

Targeting communications/campaigns: To further incentivize the younger generation Pastor Jenkins expressed remains hesitant, and men, we recommend applying homophily principles (ie:

utilizing peer examples/volunteers who look like BIPOC youth); conformity principles (ie: show younger generations that vaccines are the social norm); and understanding bandwidth constraint (i.e.: be mindful not to overwhelm with too much information).

Recommendation Drawbacks

We acknowledge that costs to many of our recommendations are both time and money. Recruiting and training volunteers for any project involves resources and opportunity costs. Updating electronic sign-up systems, changing pipelines for vaccine access, and changing organizations for vaccine distribution also come with significant investment, but we believe the benefits to society outweigh these costs. Finally, without a truly randomized control trial, it is difficult to definitively know that a given intervention will help improve vaccine uptake in BIPOC communities in Rhode Island under the FiS purview. However, we are confident that our preliminary data analysis, expert interviews, and literature review provide enough evidence for validity.

Testing Recommendations

In order to collect more definitive data on the impact of these interventions, and to track progress-to-goal on Faith in Science' desired 75% vaccination rate across BIPOC communities in Rhode Island, we strongly recommend tracking the effectiveness of these recommendations. For example, the volunteer program and pre-registration systems could try multiple techniques in signing people up for vaccinations. Individuals could be randomly assigned to either receive a text or a call regarding their appointment, and FiS could compare which group (text or call) had higher vaccination rates. Additionally, FiS should collect quantitative data on how many vaccine appointments their volunteers uniquely schedule, how many vaccine doses are ultimately administered from those appointments, whether there is a drop-off rate for no-shows to appointments, how many return for second doses (as applicable), and consider conducting a follow-up survey to obtain data on the utilization of the volunteers or the pre-registration system (asking whether or not participants would have received their vaccine without this intervention). By collecting this data, and running any number of experiments, FiS will be able to determine their progress-to-goal, understand what methods are indeed improving vaccination rates, and make adjustments as needed along the way to meet their goal. They can also leverage the lessons learned to apply in future public health crises or utilize demonstrated effective behavioral interventions to encourage other desired actions within their congregation populations.

Concluding Thoughts

Ultimately, we provide four recommendations supported by our literature review, expert interviews, and data analysis. We conclude that targeted communication towards young people, neutralized risk-framing of vaccine information, adding volunteers for a variety of purposes, and establishing a pre-registration program should help the members of FiS reach the goal of vaccinating 75% of the BIPOC population in Rhode Island. Based on explicit inferences from our data and discussions with leading FiS stakeholders, these recommendations will make it easier for individuals in membership communities to access vaccines, gather accurate information, and ultimately save lives.

Citations

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Appendix

In the survey, in addition to demographic information - *age, gender, race, zip code* - we created a conditional question. To test if respondents were influenced by messaging in loss, gain, or neutral framing, respondents were asked about their attitude about the COVID-19 vaccine. There were five responses to choose from. If a respondent selected four of the five responses - *'I have received at least one dose of the vaccine,' 'I have scheduled an appointment to get the vaccine,' 'I will be taking the vaccine when I am eligible,'* or *'I will be taking the vaccine when I feel like it,'* - they were prompted with one of the following messages, at random:

> *1. Please read this carefully before proceeding to the next page:*
>
> *The COVID-19 vaccine is a safe way to build protection to the virus. COVID-19 can have serious, life-threatening complications, and there is no way to know how COVID-19 will affect you. And if you get sick, you could spread the disease to friends, family, and others around you.*
>
> *In addition, the COVID-19 vaccine is an important tool to help stop the pandemic. If you and your family and friends get vaccinated, you'll be able to socialize with people, attend events, and get life back to normal.*
>
> *2. Please read this carefully before proceeding to the next page:*
>
> *The COVID-19 vaccine is an important tool to help stop the pandemic. COVID-19 can have serious, life-threatening complications, and there is no way to know how COVID-19 will affect you. And if you get sick, you could spread the disease to friends, family, and others around you.*
>
> *3. Please read this carefully before proceeding to the next page:*
>
> *The COVID-19 vaccine is an important tool to help stop the pandemic. COVID-19 can have serious, life-threatening complications, and there is no way to know how COVID-19 will affect you. And if you get sick, you could spread the disease to friends, family, and others around you.*

Respondents were then asked to answer who influenced their decision to get the COVID-19 vaccine - *Government Health Officials, Friends and Family, Politicians, Doctors and other health professionals you go to for medical care, Local faith-based organization,* or *other*. Respondents who selected *'other'* would be able to enter their own answer.

Respondents who selected the fifth response - '*I will not be taking the vaccine*' - were not prompted by any message. They were taken directly to the next question of what group most influenced their decision not to get the COVID-19 vaccine. Respondents were given the same answer options as the other group of respondents.

Through a likert scale, all respondents were asked to rate their level of worry regarding the vaccine: 1 being *Not worried at all* and 7 being *Extremely Worried*.

Lastly, to address the accessibility of the vaccine, we asked participants what they would do if they were pre-registered for an appointment to get the vaccine. The options included: *I would get the vaccine on my appointed date, I would cancel and book my own, I would cancel and not get the vaccine,* and *Not applicable - I have already scheduled my appointment or received the vaccine.*

(N=77) Demographic Information