



Short communication

## Vaccine hesitancy among Veterans Affairs Health Care System employees

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## ABSTRACT

Vaccine hesitancy undermines the control of the COVID-19 pandemic and has been observed in health care workers. As part of a quality improvement effort, we aimed to describe reasons for vaccine acceptance and hesitancy among employees in the Veteran Affairs Portland Health Care System (VAPORHCS). We administered an open-ended and web-based survey to all VAPORHCS employees in July 2021. Data were analyzed using a rapid usability framework, whereby qualitative data were synthesized into thematic categories to inform decision making. Among the 1157 employees who completed the survey, 88% reported that they had received the vaccine and 12% reported that they did not receive the vaccine. Over half (54%) of vaccinated respondents reported having initial hesitancy to the COVID-19 vaccine but overcame their hesitancy by deciding that the vaccine's benefits outweighed its risks. Reasons for COVID-19 vaccine acceptance were: 1) individual and community health; 2) protect vulnerable and unvaccinated family members; 3) promote patient and workplace safety; 4) scientific evidence. Reasons for COVID-19 vaccine hesitancy among unvaccinated employees were: 1) concerns with safety and risk profile of vaccine; 2) mistrust in vaccine development; 3) personal choice; 4) openness to future vaccination. These results provide information for tailored vaccine messaging efforts as well as emphasizes the need for trust-building between employees and health care organizations.

### 1. Background

Vaccine hesitancy is “delay in acceptance or refusal of vaccines despite availability of vaccine services” (MacDonald, 2015) and poses a serious threat to control of the coronavirus disease (COVID-19). COVID-19 vaccine hesitancy has been estimated to occur in over 20% of healthcare workers (Biswas et al., 2021). This project, which gathered data just before COVID-19 vaccination became mandatory for Federal employees, examined reasons for vaccine acceptance and hesitancy among VAPORHCS personnel. While COVID-19 vaccination has since become mandatory for all Veterans Affairs (VA) employees, we report information on employee motivations and concerns about vaccination to inform potential vaccine uptake efforts among healthcare systems with and without vaccine mandates.

### 2. Methods

#### 2.1. Data collection

After receiving VAPORHCS approval for this quality improvement project, we administered an open-ended web-based survey via a single email to all VAPORHCS employees between July 6 and July 21. Respondents were asked to indicate whether they had received the COVID-19 vaccine. If yes, they were asked to list two main reasons why they were vaccinated, if they had any hesitancy about getting the vaccine, and how the experiences of others may have influenced their decision to be vaccinated. If no, respondents were asked to list two main reasons for not getting vaccinated, what, if anything, would make them more or less likely to get the vaccine, and how the experiences of others may have influenced their decision to not be vaccinated.

#### 2.2. Analysis

Data Analysis occurred in two phases. In the first phase, yes or no

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responses to whether they had received the COVID vaccine were counted, and open-ended responses to reasons for and against COVID vaccination were organized into relevant categories (i.e., vaccine benefits outweigh risks, concern over side effects, needing more information, etc.) and proportions were calculated. In the second phase, the textual data from open-ended responses were analyzed using a rapid usability analysis framework (Lopez et al., 2017) whereby qualitative data were synthesized into thematic categories and relevant quotations were chosen to illustrate themes. Data were then integrated and interpreted in the context of a wider effort to inform decision-making about how to best support vaccine update efforts at VAPORHCS.

### 3. Results

Among 1157 employees who completed the survey (24.9%), 1061 (88%) indicated they had received the COVID-19 vaccine, and 141 (12%) indicated they had not received the vaccine. Results for vaccination are illustrated in Table 1 and results for declining vaccination are illustrated in Table 2. Over half (54%) of vaccinated respondents reported experiencing vaccine hesitancy.

Vaccinated Respondents: Reasons for vaccine hesitancy in the vaccinated group centered on perceived risks of side effects including possible allergic reactions, rapid vaccine development, being among the first to get vaccinated, and lack of long-term research on vaccine effects. Many of these respondents indicated that while they were concerned about these perceived risks, they overcame their hesitancy by deciding that the benefits of the vaccine outweighed potential risks. Many respondents indicated that they were encouraged by vaccine safety data and reports of minimal side effects among trial participants, and 50% of

**Table 1**  
Reasons for COVID-19 vaccine acceptance among vaccinated employees.

Theme	Quotes from Survey
1) Individual and community health	Avoid illness and hospitalization due to COVID 19 To protect myself, my family, and those in my community. Getting the vaccine was the best decision to make to be safe. I wanted to feel protected" To do my part to in stopping the spread of COVID-19 Community health - avoiding accidentally spreading it Safety of my household and others within my community
2) Protect vulnerable and unvaccinated family members	To protect my spouse who has a health condition making her potentially more vulnerable to COVID-19 I wanted to protect the vulnerable family members I live with. To protect my elderly and immunocompromised family members Family members that are high risk and I have kids in grade school I have 2 kids under 12. They cannot be vaccinated.
3) Promote patient and workplace safety	Felt a duty to protect myself and patients Protect my patients and coworkers from COVID I think for the safety of staff and patients I should be vaccinated. Face to face patient care/unable to social distance in my work Protect the Veterans I care for
4) Scientific evidence	I reviewed the science and felt comfortable getting the vaccine I have confidence in science and reassurance from clinicians I trust I know the science overwhelmingly supports the vaccines' safety and efficacy There was good evidence of the vaccine's effectiveness and few side effects Clear consensus around the evidence supporting safety and efficacy of the vaccine

**Table 2**  
Reasons for COVID-19 vaccine hesitancy among unvaccinated employees.

Theme	Quotes from Survey
1) Concerns with safety and risk profile of vaccine	Side effects from shot are worse in many cases then the vaccination. Potential risks do not outweigh temporary benefits Long term side effects unknown Adverse reactions do not justify risk Do not feel like there is enough evidence and with the recent reactions I do not feel safe
2) Mistrust in vaccine development	Don't trust mRNA and spike protein It is not approved by the FDA and is still a "test" Vaccine Vaccine has not gone through extensive long-term trials like other vaccines have If it worked and was safe you wouldn't need ads campaigns, mandate it, or offer incentives. The government and media seem to be pushing the vaccine while hiding the serious adverse events
3) Personal choice	Believe it should be a personal choice It is a personal choice for everybody and a private matter I am young and healthy, it should be a personal choice It's my own personal choice. I'm safe at work not putting anyone at risk I wear my mask and am safe around others
4) Openness to future vaccination	I would like to wait to see what type of effects it has on the public More studies and being out on the market longer More time to be assured of no long-term side effects Nothing will make me want to get it until it's been around for 40 years like the flu/chicken pox/MMR

vaccinated respondents reported being impacted by the experiences of others with COVID-19 (e.g., severe symptoms, lasting illness, death) in their vaccination decision.

Unvaccinated Respondents: Unvaccinated participants reported vaccine safety concerns involving side effects, adverse events, and mistrust in the vaccine development process. Most (60%) unvaccinated respondents did not cite others' experiences as impacting their decisions and pointed to personal choice as justification. Among those who did indicate that their decision to not get vaccinated were impacted by the experiences of others, they pointed to adverse reactions or side effects as well in vaccinated people as well as not personally knowing anyone who has died from COVID-19 infection. Very few unvaccinated respondents cited religious or medical reasons as important factors in their decisions. Less than half (43%) of respondents reported needing information from more long-term studies on vaccine safety and efficacy before deciding. Twenty percent said they would never be vaccinated under any circumstance and 6% said they would accept the vaccine if their job was threatened but believed it was a form of coercion. Few indicated that no additional information would be helpful to them in making their vaccination decision.

### 4. Discussion

In our project, vaccinated and unvaccinated groups expressed similar rates of hesitancy about the vaccine, and reasons given for vaccine hesitancy were similar to those previously described among healthcare workers (Castañeda-Vasquez et al., 2021; Gadoth et al., 2021) and the general population (MacDonald, 2015; Hammel et al., 2020). Our findings highlight that both groups hold similar concerns regarding the COVID-19 vaccine as it relates to side effects and safety, but differ on their perception of the vaccine development process. Vaccinated respondents reported that they were concerned that the vaccine was developed too rapidly, while unvaccinated respondents indicated they

did not trust the vaccine developers. Additionally, we found important differences in how vaccinated versus unvaccinated health care workers make decisions about whether or not to receive a vaccine. Vaccinated respondents, despite having some concerns, overcame their hesitancy because they trust the vaccine development process and hold more collectivist attitudes, as indicated by being more impacted by others' experiences with COVID-19. On the other hand, the unvaccinated group did not overcome their hesitancy, because they possess a fundamental mistrust in the vaccine process and place more value on personal choice and individualism. Although vaccination is now mandatory for these employees, our results suggest that messaging to unvaccinated health-care workers should focus on providing information on vaccine development and recent safety data, and on building trust. This type of messaging may help to address concerns of employees who mistrust the development process or are taking a wait-and-see approach.

There are limitations to this work. To encourage participation and honest responses, we did not collect participant identifiers; this precluded further analysis into staff-level predictors of vaccination status. Participant identifiers might have allowed us to identify correlates of vaccine uptake or develop targeted messaging strategies for particular population segments. The response rate was low, which introduces the possibility of selection bias. This survey was administered prior to the Federal vaccine mandate, which may have impacted current employee attitudes, and may limit current generalizability. Interestingly, respondents did not cite an impending vaccine mandate as reason for vaccination, and only a small proportion (6%) of unvaccinated respondents indicated that they would get vaccinated if their job was at risk. On the other hand, our findings regarding staff attitudes and concerns likely have applicability for other VHA and government healthcare facilities, as well as non-governmental healthcare organizations. Finally, although our results emphasize the need for trust-building between employees and health care organizations, it remains unclear how to engender this necessary trust.

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declare that there is no conflict of interest.

### Credit Author Statement

Study and design – Hulen, E, Rynerson BS, Dobscha SK. Analysis and interpretation of results – Hulen E, Rynerson BS, Dobscha SK. Draft manuscript and preparation – Hulen E, Rynerson BS, Dobscha SK. All authors reviewed the results and approved the final version of the manuscript.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pmedr.2022.101702>.

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