Original Work

Improving Health Equity through Building COVID-19 Vaccine Confidence with Minority Veterans: A Pharmacist-Led Motivational Interviewing Approach

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Abstract

Objectives:

- Take a proactive approach in addressing vaccine health disparities for minority Veterans.
- Leverage pharmacists who are well-trained in motivational interviewing (MI) to provide a safe environment to discuss COVID-19 vaccination and encourage vaccine acceptance.
- Update the electronic medical record (EMR) to accurately reflect Veteran vaccination rates.

Methods: Minority Veterans without prior documentation of COVID-19 vaccination were identified from a report generated by the EMR. Chart reviews were completed to determine eligibility for telephone outreach by pharmacists during a two-week period in March 2021. Pharmacists discussed COVID-19 vaccination with unvaccinated minority Veterans using MI and education to address their concerns and encourage vaccine acceptance, while also updating the EMR with previous vaccinations.

Results: Upon initial chart review, 297 (23%) of the 1,275 included patients had a previous COVID-19 vaccination or future vaccine appointment, leading to updates in the EMR. A total of 988 Veterans (77%) received unscheduled telephone outreach by pharmacists. Of those, 509 (52%) were successfully reached by telephone on the first attempt and 263 (52%) of them met the primary composite endpoint: 136 (27%) agreed to a vaccine appointment, 114 (22%) reported previous vaccination and had their EMRs updated, and 13 (3%) reported a future vaccine appointment elsewhere.

Conclusion: Pharmacist-driven outreach to minority patients effectively improved their vaccination rates through increasing vaccine acceptance and accurately updating the EMR. While this method is time- and resource-intensive, pharmacists may consider implementing similar programs in their practices to address health inequities more broadly.

COVID-19 disproportionately affects patients of minority racial and ethnic groups in the United States. Black or African American, American Indian or Alaska Native, Hispanic or Latino, and Native Hawaiian or other Pacific Islander patients have died at rates 140% of those of White Americans.[1] This multifactorial health inequity stems from a lack of access to medical services, decreased quality of care, lower rates of health insurance, and linguistic and cultural barriers.[2,3] Despite the staggering discrepancy in mortality, vaccinating America's minority populations proves challenging.

Vaccine hesitancy describes the spectrum, from reluctance to refusal, of a vaccine in the absence of barriers to access.[4] A survey from March 2021 by National Public Radio, Public Broadcasting Service NewsHour, and Marist reported that 25% of Black and 28% of White participants planned to not receive a COVID-19 vaccine.[5] While the two rates are comparable, differences in reasoning exist behind the hesitation.[6] America's traumatic and unethical history of medical malpractice with minority patients, such as in the Tuskegee Syphilis Study, provides some historical basis for the skepticism and distrust.[7]

Proper vaccine education is crucial to countering misinformation; however, education alone is often ineffective. As one of many potential strategies, providers and healthcare institutions may strive for an individualized approach, focused on rebuilding trust to increase vaccination rates and optimize impact among minority

populations.

The Department of Veterans Affairs (VA) recognizes integration and advancement of diversity, equity, and inclusion (DEI) and achievement of health equity for all Veterans as national strategic priorities. Pharmacy and institutional leadership at the William S. Middleton Memorial Veterans Hospital in Madison, WI (Madison VA) are personally and professionally invested in these efforts. Local leadership implements facility-wide goals and initiatives to advance DEI and improve health equity for minority Veterans.

Clinical Pharmacy Practitioners (CPPs) and pharmacy residents at the Madison VA, in partnership with the hospital's Anti-Racism Action Team, led a proactive telephone outreach effort in March 2021 to address COVID-19 vaccine inequities among minority Veterans. CPPs implemented a two-week team initiative to call minority Veterans without prior vaccine documentation and establish supportive conversations, based on motivational interviewing (MI), to build confidence and encourage vaccine acceptance.

Methods

A report was generated from the electronic medical record (EMR) to identify minority Veterans without previous COVID-19 vaccination documentation. CPPs and pharmacy residents performed a chart review and excluded patients if they were deceased, transferred care, or moved out of the service range; if they were already undergoing current discussion with their care team on COVID-19 vaccination; or if the entry was a duplicate. Veterans found to have had previous non-VA COVID-19 vaccination or an upcoming COVID-19 vaccination appointment scheduled at the Madison VA mentioned in their notes but not documented in the EMR had it updated to make the records translatable into broader sharable data systems. The remainder of minority Veterans were eligible for unscheduled telephone contact.

Pharmacy leadership distributed minority-Veteran call lists to CPPs and pharmacy residents based on allotted time for these outreach efforts. CPPs and pharmacy residents performed outreach calls to minority Veterans over a two-week period (March 22 through April 2).

All participating pharmacists received a call guide that included a general call template with guidance for documentation and workload capture. They also received a second document containing motivational interviewing strategies, racial/ethnic historic contextual information, and common COVID-19 vaccine myths/facts facts.

Pharmacists attempted to reach each Veteran with two consecutive calls. A voicemail was left after two attempts, including information about COVID-19 vaccine availability along with callback numbers for vaccine appointments and questions.

For Veterans who answered, calls opened with a greeting, a statement that the COVID-19 vaccine was available to them, acknowledgement of collaboration with the Veteran's primary care provider, and a request for permission to talk about the COVID-19 vaccine. Veterans who accepted the request to discuss were asked if they were interested in receiving a COVID-19 vaccine. Veterans who desired a vaccine were given a warm hand-off transfer to the vaccination appointment scheduling line. For Veterans who declined discussion or expressed ambivalence, patient autonomy was respected, and MI was leveraged as appropriate. Conversations were tailored to each Veteran based on their responses and concerns.

Veterans who reported previously receiving COVID-19 vaccination from a non-VA source had their EMRs updated appropriately. Veterans with a future non-VA vaccine appointment were offered to have it transferred to a VA appointment. Veterans who declined or remained undecided were asked if they would be interested in follow-up with their PCP for further discussion.

The primary composite endpoint was composed of the following based on the telephone outreach: (1) a Veteran newly accepted vaccination and received a scheduled appointment for COVID-19 vaccination at the Madison VA; (2) a Veteran's EMR was updated with a previous historical COVID-19 vaccination; or (3) a Veteran's EMR was updated with a future non-VA COVID-19 vaccination appointment. The success rate was defined as the number of minority Veterans who met the primary composite endpoint divided by the number of eligible minority Veterans reached by telephone.

Reasons for COVID-19 vaccine declination or deferral were compiled, quantified, and summarized into the following categories: clinical concerns, logistical issues, distrust or philosophical reasons, ambivalence, and refusal to elaborate.

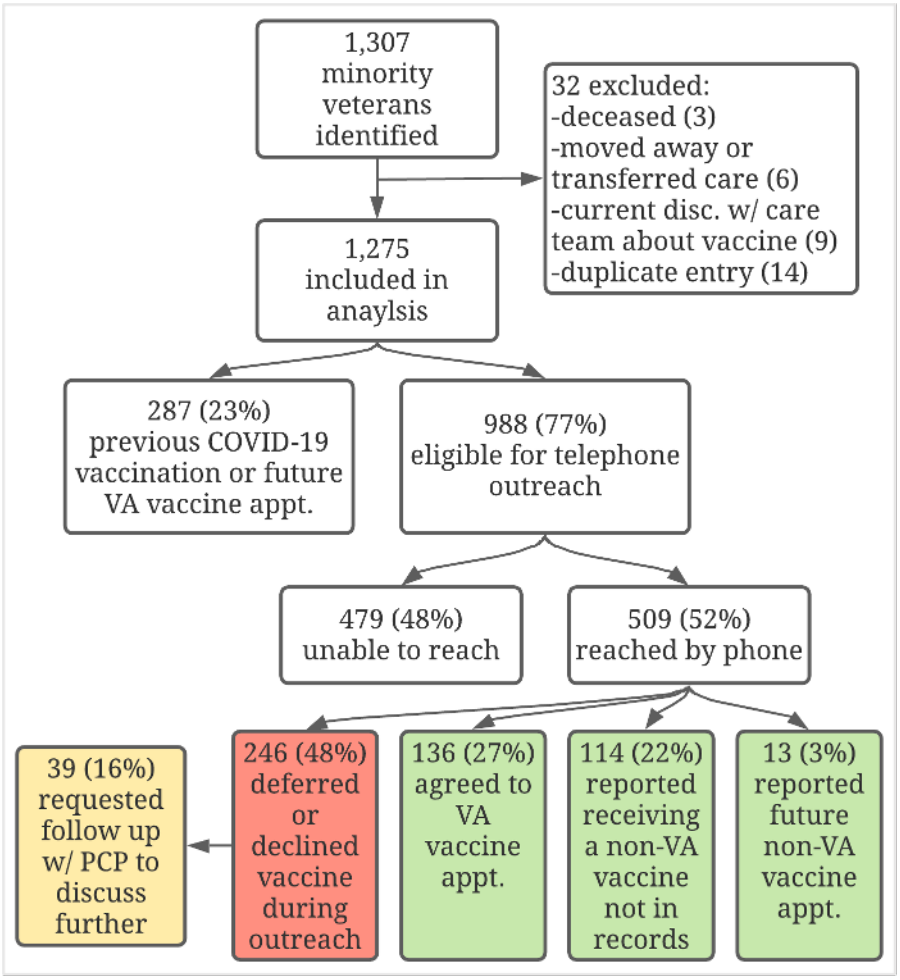
Data were analyzed using descriptive statistics. In a secondary analysis, pre- and post-initiative COVID-19 vaccination levels for all minority Veterans served by the Madison VA were assessed by race. A one-sample test of proportions was used to compare vaccination level changes for each minority racial group between March 18, 2021 and May 4, 2021. Sample size was determined by the March 18, 2021 data set, as it was more conservative with fewer Veterans.

The University of Wisconsin-Madison Sciences Institutional Review Board (IRB) determined this project did not meet the federal definition of research; therefore, IRB

TABLE 1. Veteran Patients without Previous COVID-19 Vaccination

Veterans Identified by Race and/or Ethnicity	*Number Identified*	*Average Age (years)*	*% Male*
American Indian or Alaskan Indian	65	59.5	84.6%
Asian	76	40.6	83.0%
Black or African American	743	56.4	85.3%
Hispanic or Latino	236	46.5	84.3%
Native Hawaiian or Pacific Islander	85	59.5	87.1%
Multiple	102	51.3	82.4%

FIGURE 1. Results of Minority Veteran Outreach.
Identified minority Veterans underwent a chart review to determine eligibility for telephone outreach. Of those reached, 52% of calls successfully met the primary composite endpoint (green). Within the 48% that did not meet the endpoint (red), 16% of them requested follow up to discuss COVID-19 vaccination further with their primary care provider (PCP, yellow).



review was not required.[8]

Results

An initial 1,307 minority Veteran patients without previous COVID-19 vaccination documentation were identified by the EMR. Baseline characteristics are provided in Table 1, with Black or African American Veterans representing the largest group. The majority were males (84.5%) with an average age of 52. A total of 32 veterans were excluded based on the following: deceased (3), moved away or transferred care elsewhere (6), undergoing current discussion with their care team about COVID-19 vaccination (9), and duplicated entry (14). A resulting 1,275 minority Veterans were included in the analysis (Figure 1).

Of those included, 287 (23%) were found to have had either a previous COVID-19 vaccination or a future COVID-19 vaccination appointment scheduled at the Madison VA upon chart review. Of the remaining 988 (77%) eligible for contact by pharmacists, 509 (52%) were successfully reached by telephone for the MI during the two-week initiative. A total of 47 pharmacists (30 ambulatory care CPPs and 17 pharmacy residents) were involved with making calls.

Of those reached, 263 (52%) minority Veterans met the primary composite endpoint. The majority of those meeting the primary endpoint accepted and scheduled a vaccine appointment at the Madison VA (136, 27%). Another 114 (22%) reported receiving a COVID-19 vaccine outside of the VA that was not previously documented in their records, and 13 (3%) preferred to keep a future non-VA COVID-19 vaccination appointment instead of switching to one at the Madison VA. While 246 (48%) affirmed their vaccine declination or deferment during the outreach, 39 (16%) of them requested follow-up to discuss it further with their PCPs. Results of those interactions were not recorded.

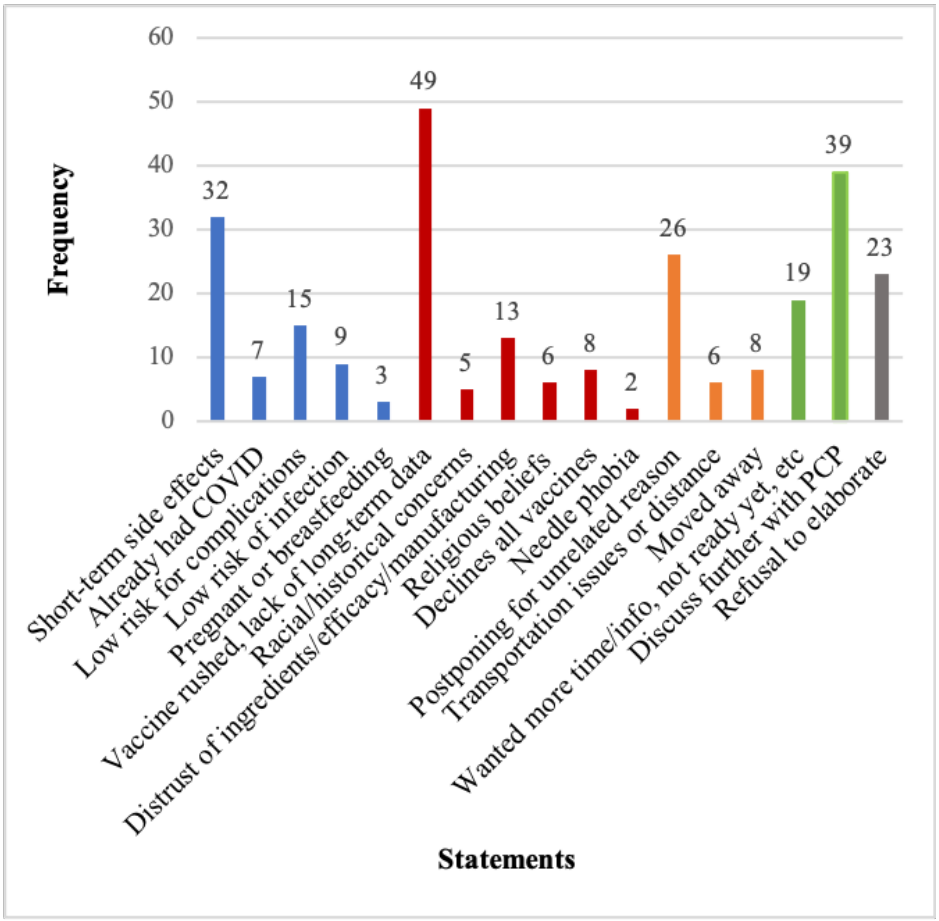
Minority Veterans who declined or deferred the COVID-19 vaccination showed a variety of reasons. Of the five general categories identified, distrust or philosophical reasons was the largest for declining the COVID-19 vaccine (31%). The most common specific concern cited was a feeling that the vaccine was rushed and lacked enough long-term data (49 responses), followed by a request to discuss further with their PCP (39), and concern for short-term side effects (32). Racial/historical concerns were cited 5 times. A detailed analysis of declinations, deferrals, and associated themes is displayed in Table 2.

A comparison of pre- and post-initiative COVID-19 vaccination levels by race is presented in Table 3. Of note, Hispanic or Latino Veterans were not specifically displayed in the table due to their frequent association with other racial groups. COVID-19 vaccination levels between March 18, 2021 and May 4, 2021 increased significantly within all minority Veteran racial groups contacted by the outreach (p-values <0.001). Asian Veterans experienced the largest increase in vaccination of 25%, while Black or African American Veterans' increase of 22% was supported by the largest minority sample size.

Discussion

CPPs and pharmacy residents implemented a proactive telephone outreach initiative that addressed vaccine inequities and significantly increased documented COVID-19 vaccination rates among minority Veterans. Motivational interviewing was fundamental in conducting supportive conversations regarding COVID-19 vaccine decisions, with 52% of Veterans reached meeting the primary composite outcome. Additionally, analysis of responses from participants that deferred or declined vaccination provided greater insight into the reasons behind the

TABLE 2. Reasons for Declining or Deferring the COVID-19 Vaccine in Minority Veterans. Statements were collected from minority Veterans who declined or deferred vaccination during phone contact, then generalized to form the distribution above. Statements are grouped by their corresponding theme.



vaccine hesitancy and highlighted future opportunities to build vaccine confidence. Personalized outreach builds rapport, creates a safe space to share beliefs, and strengthens trust. Leveraging knowledgeable and trusted providers to engage in MI with patients may turn today's ambivalence into tomorrow's vaccine acceptance.

Several limitations were identified during the initiative. Participating CPPs and pharmacy residents had varying degrees of experience and comfort in effectively responding to vaccine misinformation. To address this, a standardized call template and guidance from national VA sources were provided to ensure all Veterans received consistent messaging during COVID-19 vaccine discussions. The use of unscheduled phone calls to conduct outreach also limited results due to the inability to reach many eligible Veterans.

Further, the pre- and post-initiative vaccination-level data included all Veterans at the Madison VA, not just those included or successfully reached in this outreach. Given the wider patient inclusion in that data as well as the extended timeframe between the vaccines' initial approvals from Emergency Use Authorization (EUA) and the pre-initiative data (March 2021) to the post-initiative data (May 2021), some Veterans may have felt more comfortable receiving the vaccine in May regardless of MI efforts. The data is only observational and not solely reflective of the outreach intervention.

Lastly, the leveraging of 47 pharmacists for a two-week initiative, each dedicating two to four hours per week, may be challenging for reproducibility. Rapid addressment of COVID-19 vaccine inequities was a major goal of this outreach. However, future programs may opt for a longer-term focus with fewer providers. Using pharmacy residents, interns, and students, as well as other disciplines trained in MI, such as nurses, may be strategies to expand.

Several opportunities for continued growth were identified and implemented. Based on the success of this initiative, the program was expanded to include nursing staff and primary care teams to provide outreach to all Veterans served by the Madison VA system. Similar methods, including a focus on MI, was replicated. Education on MI was provided to nursing staff prior to implementation of the expanded outreach for use in their patient interactions. Assessing COVID-19 vaccination status and encouraging vaccine acceptance is now standard practice during patient visits. Discussions were also held with two other VA facilities (San Diego and Reno medical centers) for application of this initiative at their sites.

Motivational interviewing techniques and personalized outreach may extend beyond COVID-19 vaccine hesitancy and

TABLE 3. A Comparison of Pre- and Post-Initiative COVID-19 Vaccination Levels

All Veterans by Race	*Total 3/18/21*	*Total 5/4/21*	*% Vaccinated 3/18/21*	*% Vaccinated 5/4/21*	*% Increase in Vaccination*
Native Hawaiian or Pacific Islander	190	195	55.2%	69.2%	14.0%
Black or African American	1,206	1,232	38.4%	60.0%	21.6%
Multiple	162	168	37.0%	57.7%	20.7%
Asian	121	129	37.2%	62.0%	24.8%
American Indian or Alaskan Indian	118	129	44.9%	60.5%	15.6%

provide a framework to address preventative care measures and health inequities more broadly. In their outreach, pharmacists corrected misinformation, provided tailored interventions, and fostered stronger relationships built on trust with minority patients. Barriers of misinformation and distrust are not unique to the COVID-19 vaccine but are prevalent throughout health care in general. Racial and ethnic disparities in contraception access and knowledge[9], chronic disease state management[10], and mental health outcomes[11] have been specifically cited in Veterans; each an opportunity for pharmacists to apply the lessons learned from this initiative and work towards health equity for all.

Minority-specific outreach and personalized education with MI can be an effective approach to encourage engagement with the health care system and reduce health inequities. Pharmacists involved found this initiative rewarding, and calls were well-received by minority Veterans. This outreach exhibits the personal investment and genuine passion for DEI advancement and achievement of health equity at the Madison VA.

Conclusion

Pharmacist-driven motivational interviewing with personalized education effectively reduces vaccine hesitancy and fosters stronger relationships with minority patients. This initiative may serve as a model for future minority-specific outreach efforts aimed at addressing health inequities more broadly. Pharmacists are well-trained in motivational interviewing and well-positioned as the most accessible healthcare providers to lead such efforts. The outreach presented here demonstrates the pharmacy profession's commitment to serving all patients and advancing diversity, equity, and inclusion.

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References

1. Ledur J. The COVID racial data tracker. CovidTracking. Updated March 7, 2021. Accessed July 17, 2021. https://covidtracking.com/race
2. Thornton RL, Glover CM, Cené CW, Glik DC, Henderson JA, Williams DR. Evaluating strategies for reducing health disparities by addressing the social determinants of health. *Health Aff.* 2016;35(8):1416-1423. doi:10.1377/hlthaff.2015.1357
3. Zhang X, Pérez-Stable EJ, Bourne PE, et al. Big data science: opportunities and challenges to address minority health and health disparities in the 21st century. *Ethn Dis.* 2017;27(2):95-106. doi:10.18865/ed.27.2.95
4. World Health Organization. Ten threats to global health in 2019. World Health Organization; 2019. Accessed July 17, 2021. https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019
5. Summers J. Little difference in vaccine hesitancy among White and Black Americans, poll finds. Updated March 12, 2021. Accessed July 17, 2021. https://www.npr.org/sections/coronavirus-live-updates/2021/03/12/976172586/little-difference-in-vaccine-hesitancy-among-white-and-black-americans-poll-find
6. Bonner L. COVID-19 provides opportunity to rethink vaccine hesitancy. *Pharmacy Today*. 2021;27(5):26-31. https://doi.org/10.1016/j.ptdy.2021.04.011
7. Gamble VN. Under the shadow of Tuskegee: African Americans and health care. *Am J Public Health*. 1997;87(11):1773-1778. doi:10.2105/ajph.87.11.1773
8. University of Wisconsin-Madison Education and Social/Behavioral Science Institutional Review Board. IRB guidance: research vs. quality improvement/program evaluation. Accessed July 19, 2021. https://kb.wisc.edu/sbsedirbs/page.php?id=69855
9. Rosenfeld E, Callegari LS, Sileanu FE, et al. Racial and ethnic disparities in contraceptive knowledge among women veterans in the ECUUN study. *Contraception*. 2017;96(1):54-61. doi:10.1016/j.contraception.2017.03.008
10. Washington DL, Steers WN, Huynh AK, et al. Racial and ethnic disparities persist at Veterans Health Administration patient-centered medical homes. *Health Aff (Millwood)*. 2017;36(6):1086-1094. doi:10.1377/hlthaff.2017.0029
11. Spoont M, Nelson D, Kehle-Forbes S, et al. Racial and ethnic disparities in clinical outcomes six months after receiving a PTSD diagnosis in Veterans Health Administration. *Psychol Serv.* Published online July 13, 2020. doi:10.1037/ser0000463