



Addressing Barriers to COVID-19 Vaccination Among Older U.S. Veterans

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Accepted: 18 March 2022 / Published online: 12 April 2022

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Abstract

Efforts are being made to ensure that COVID-19 vaccination among older adults is as complete as possible. Dialogue-based interventions tailored to patients' specific concerns have shown potential for effectiveness in promoting vaccination. We implemented a quality improvement project intended to help patients in an outpatient geriatrics clinic overcome barriers to COVID-19 vaccination. We offered tailored conversations by telephone in which we discussed the barriers to vaccination that the patients were facing and offered to provide relevant information and/or logistical assistance. Of the 184 patients reached by phone, 125 (68%) endorsed having already been vaccinated and 59 (32%) did not. About one third of the unvaccinated patients were willing to participate in tailored conversations (20 patients = 34% of the unvaccinated). In follow-up calls 30 days after the intervention we found that four of these 20 patients had received COVID-19 vaccination, one patient was scheduled for vaccination, 10 continued to be deciding about vaccination, four had decided against it and one could not be reached. Dialogue-based interventions that are conducted by telephone and are tailored to the specific barriers to vaccination being faced by older adults may have some effectiveness in encouraging vaccination against COVID-19. The effectiveness of such interventions may be decreased in populations that already have high vaccination rates and in which many patients have already formed strong opinions regarding vaccination against COVID-19. Completion of Plan-Do-Study-Act cycles is a feasible way to design, implement and work to optimize quality improvement efforts related to COVID-19 vaccination.

Keywords COVID-19 · Vaccination · Older adults · Intervention

Introduction

Older adults have been dramatically affected by the COVID-19 pandemic, which has encouraged efforts to ensure that vaccination among older adults is as complete as possible. Barriers to vaccination include access issues and vaccine hesitancy [1]. Transportation limitations, cognitive concerns (such as mild cognitive impairment or dementia) and physical disabilities are among the factors that can contribute to older adult patients having difficulty accessing vaccination. Vaccine hesitancy is “patient-level reluctance to receive vaccines” [2]. Previous work has suggested that dialogue-based interventions can be effective in addressing vaccination

barriers, and that intervention strategies may benefit from being tailored to the target population and their reasons for hesitancy [3]. In the present project a tailored, dialogue-based intervention was offered to older adults enrolled in a Veterans Affairs outpatient geriatrics clinic.

Methods

The setting for the project was a Veterans Affairs Medical Center in a large urban area, in the summer and fall of 2021. In the “Plan” component of our first “Plan”-“Do”-“Study”-“Act” (PDSA) cycle, we discussed with the director of the outpatient geriatrics clinic and other staff at our institution the barriers to COVID-19 vaccination that they were finding patients to be facing, and how we might be able to help patients address these barriers [4]. We designed a plan for an intervention, and the IRB for our institution reviewed the plan and agreed that it described a quality improvement project. With the help of our informatics department we then

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identified patients enrolled in the medical center's outpatient geriatrics clinic who had possibly not yet had vaccination for COVID-19. Of the 1706 patients enrolled in the geriatrics primary care clinic 573 (34%) were identified as possibly not having yet been vaccinated, due to vaccination status in their electronic medical records being listed as “unvaccinated” or “unknown”. Starting from the beginning and end of this alphabetized list of 573 patients and proceeding toward the center of the list, our team reached 184 of the 573 patients (or their caregivers; 32%) for semi-structured conversations.

In the phone conversations with patients and caregivers we discussed the patients' actual vaccination statuses at that time. For patients who confirmed that they were unvaccinated, we attempted to identify the specific barriers to vaccination being experienced by each patient, and to tailor for each patient an intervention intended to address his/her specific barriers to vaccination. Predetermined options for questions regarding vaccination barriers were sometimes used or adapted, as assessed by the staff members to be appropriate in each conversation. Available components of the intervention included dialogue targeted to areas of concern expressed by the patient, provision of patient education targeted to the patient's interests and provision of assistance with access issues (such as scheduling vaccination appointments or arranging transportation to the VA). The staff members completing the phone calls had received relevant training, printed materials and internet-based materials in advance.

The project staff members who had conversations with patients by phone included two employees of our Geriatric Research Education and Clinical Center who have high levels of health literacy and have worked well with other quality improvement efforts at our medical center. One completed medical school in Cuba and is fluent in English and Spanish, and the other has worked and volunteered extensively in healthcare settings and is himself an older adult Veteran. The third project staff member, who provided support for the other project team members and reached out to patients for follow-up phone calls to help address logistical issues (such as scheduling transportation), is a geriatrician who has worked at our medical center for 3 years.

Information on the patients' self-reports of their vaccination statuses and the content of the conversations was recorded in the electronic medical record and in a secured Excel file. Approximately 1 month after the last of the 184 patient conversations, we recontacted the patients who had expressed interest in vaccination in our first conversations with them. We asked their updated vaccination status and explored whether there were new or continued barriers to vaccination with which we might assist. We then studied the overall results of the telephone-based intervention and used this information to inform the next PDSA cycle.

Results

Of the 184 patients reached for initial conversations, 125 (68%) reported themselves as already having been vaccinated (or were reported as such by their caregivers) and 59 (32%) did not endorse having already been vaccinated. Most of the unvaccinated patients reached by phone were unwilling to further consider vaccination (39 patients = 66% of the unvaccinated), but about one third of the unvaccinated patients were willing to participate in conversations tailored to their specific concerns (20 patients = 34% of the unvaccinated). Of the 20 patients who were willing to engage in tailored conversations with us regarding COVID-19 vaccination, the barriers most were facing were concerns regarding the safety and/or efficacy of the vaccines (17 patients = 85%). Only three patients endorsed physical and/or cognitive concerns that were, in association with limited informal social support, limiting their access to vaccination. Though the number of patients is small, in our experience the members of this subgroup were most amenable to assistance with addressing barriers to vaccination. Logistical supports were offered and 30 days later one of the three patients had received vaccination (33%), one patient had missed an appointment for vaccination and rescheduled for an appointment in the following weeks (33%), and the third patient could not be reached for further discussion. Of the 17 patients who engaged in tailored conversations and expressed concerns regarding the safety and/or efficacy of the vaccinations, three had received vaccination 30 days later (18%), four had decided against vaccination and ten continued to be deciding.

Table 1 provides a summary of the demographics and responses to our conversations among patients who were reached by phone. In Chi-squared tests, race and ethnicity were not found to be significantly associated with vaccination statuses or responses to our phone conversations. It should be noted, however, that the project was designed as a quality improvement initiative and not as a research study, therefore was not powered to detect the potential associations of race/ethnicity with perspectives on COVID-19 vaccination, and that other authors have found such associations [5].

Discussion

During the project implementation we found that the pre-implementation vaccination rates in our geriatrics clinic did have room for improvement, but not as much room as had initially seemed possible. While initial data retrieved by our informatics department from a data warehouse suggested that as many as a third of the patients in our geriatrics primary care clinic might not have been vaccinated against

Table 1 Demographics and vaccination statuses/responses to phone conversations for patients reached by phone

	Patients totals	Average age	Male	Female	Black or African American	White	Native Hawaiian and other pacific islanders	Race unknown/ patient declined to answer/No information available	Hispanic or latino	Not hispanic or latino	Ethnicity unknown/patient declined to answer/no information available
Reached by phone/vaccinated	125(67.9%)	78.0(±7.4)	125 (67.9%)	0	25(59.5%)	82(71.3%)	2(66.7%)	16(66.7%)	38(70.4%)	82(65.6%)	5(100%)
Reached by phone/Not yet vaccinated but expressed interest in possible vaccination	20(10.9%)	77.7(±7.1)	20(10.9%)	0	4(9.5%)	14(12.2%)	1(33.3%)	1(4.2%)	6(11.1%)	14(11.2%)	0
Reached by phone/refused conversation or vaccination	39(21.2%)	77.2(±6.6)	39(21.2%)	0	13(31.0%)	19(16.5%)	0	7(29.2%)	10(18.5%)	29(23.2%)	0
Reached (totals)	184	77.8(±6.6)	184	0	42	115	3	24	54	125	5

COVID-19 (due to vaccination status in the patients' electronic medical records being "unvaccinated" or "unknown"), after speaking with patients and manually checking individual charts we estimated that the pre-intervention vaccination rate in the geriatrics clinic was in the 80 or 90 s (as of September 2021). This would be in keeping with estimates from the Center of Disease Control for current vaccination rates among older adults in our county and in the United States [6].

In our project only about one-third of unvaccinated patients were willing to engage in tailored conversations by telephone about the barriers they were facing to vaccination, and of these the majority were facing barriers related to vaccination hesitancy. These findings may relate to the telephone intervention being offered at a point in the pandemic when most unvaccinated patients had already formed strong opinions related to vaccination, and when patients facing logistical barriers to vaccination in our healthcare system had already had opportunities to receive relevant assistance with scheduling, visit reminders, transportation, etc. This points to the possibility that the relatively small group of unvaccinated patients in our geriatrics clinic might benefit at this point from further discussions of vaccination within the context of established relationships with people they trust [5,7,8]. With studying the results of telephone-based intervention with older adult patients at our institution (the "S" of the PDSA cycle), we therefore hypothesized that supporting tailored conversations on vaccination between primary care providers in the geriatrics clinic and unvaccinated patients would be a reasonable next step. Multiple providers in our geriatrics outpatient clinic participated in training and discussion on addressing barriers to vaccination among their patients, including through use of motivational interviewing techniques and tailoring the content of conversations to the specific barriers being faced [7,8]. It was also discussed that broader public health efforts and encouraging vaccination among younger patients may be particularly important components of vaccination efforts at this point in the COVID-19 pandemic [7].

Conclusions

Our quality improvement project supported that dialogue-based interventions that are conducted by telephone and are tailored to the specific barriers to vaccination being faced by older adults may have some effectiveness in encouraging vaccination against COVID-19. Our experience also suggested that the effectiveness of such interventions might be decreased in populations that already have high vaccination rates and in which high percentages of the relatively few patients who remain unvaccinated have already formed strong opinions regarding vaccination. We found

the completion of Plan-Do-Study-Act cycles to be a feasible method to for designing, implementing and working to optimize quality improvement efforts related to COVID-19 vaccination.

Author Contributions MD and AC contributed to design and implementation of the described project. FT provided and reviewed statistical work for the project.

Funding The authors are employees of the Veterans Affairs Healthcare System and dedicated work hours to the project. No other funding was received.

Data Availability De-identified data that support the findings of this study are available from the corresponding author (Marianne Desir) upon request.

Code Availability Not applicable.

Declarations

Conflict of interest The authors have no relevant financial or non-financial interests to disclose.

Ethical Approval The Miami VA IRB reviewed the project and designated it as quality improvement and not research.

Consent to Participate Not applicable as this was quality improvement, not research.

Consent for Publication Not applicable.

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