PROGRAM PROFILE

More Than a Health Fair: Preventive Health Care During COVID-19 Vaccine Events

Kathryn M. Ryder, MD, MS[a]; Mary L. Ricardo-Dukelow, MD[a]; Ashni Patel, PharmD[a]; Chaz Barit, PharmD[a]; Gloriann Watson, PharmD[a]

Background: During the initial phase of the COVID-19 pandemic, facilities transformed some medical care to virtual appointments. There was a subsequent decline in chronic disease screening and management, as well as cancer screening rates.
Observations: COVID-19 vaccine events offered an opportunity to provide face-to-face preventive care to veterans, and mobile vaccine events enabled us to reach rural veterans. In this quality improvement project, we partnered with state and community organizations to reach veterans at large vaccine events, as well as in rural sites and homeless housing. The program resulted in the successful provision of preventive care to 115 veterans at these events, with high follow-up for recommended medical care. In all, 404 clinical reminders were completed and 10 new veterans were enrolled for health care. Important clinical findings included an invasive colorectal cancer, positive HIV point-of-care test, diabetic retinal disease, uncontrolled hypertension, and depression.
Conclusions: Vaccine events offer a venue for chronic disease screening, referral, and cancer screening.

Author affiliations can be found at the end of this article.
Correspondence: Kathryn Ryder (kathryn.ryder@va.gov)

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Shortly into the COVID-19 pandemic, Dr. Robert Califf, the commissioner of the US Food and Drug Administration, warned of a coming tsunami of chronic diseases, exacerbated by missed care during the pandemic.[1] According to a Centers for Disease Control and Prevention (CDC) survey, more than 30% of adults reported delaying or avoiding routine medical care in the first 6 months of 2020. This rate was highest in people with comorbidities.[2] Multiple studies demonstrated declines in hypertension care, hemoglobin A_{1c} testing, mammography, and colon cancer screening.[3-5] There has been a resultant increase in colon cancer complications, wounds, and amputations.[6,7] The United Kingdom is expected to have a 7.9% to 16.6% increase in future deaths due to breast and colorectal cancer (CRC).[8] The World Health Organization estimates an excess 14.9 million people died in 2020 and 2021, either directly from or indirectly related to COVID-19.[9]

Due to the large-scale conversion from face-to-face care to telehealth modalities, COVID-19 vaccination events offered a unique opportunity to perform preventive health care that requires in-person visits, since most US adults have sought vaccination. However, vaccine events may not reach people most at risk for COVID-19 or chronic disease. Groups of Americans with lower vaccination rates were concerned about driving times and missing work to get the vaccine.[10]

Distance and travel time may be a particular challenge in Hawaii. Oahu is considered rural by the US Department of Veterans Affairs (VA); some communities are 80 minutes away from the VA Pacific Islands Health Care System (VAPIHCS) main facility. Oahu has approximately 150 veterans experiencing homelessness who may not have transportation to vaccine events. Additionally, VAPIHCS serves veterans that may be at higher risk of not receiving COVID-19 vaccination. Racial and ethnic minority residents have lower vaccination rates, yet are at a higher risk of COVID-19 infection and complications, and through the pandemic, this vaccination gap worsened.[11,12] More than 10% of the population of Hawaii is Native Hawaiian or Pacific Islander, and this population is at elevated risk for diabetes mellitus, hypertension, and COVID-19 mortality.[13-16]

Health Fair Program

The VA provides clinical reminders in its electronic health record (EHR) that are specified by age, gender assigned at birth, and comorbidities. The clinical reminder program is intended to provide clinically relevant reminders for preventive care at the point of care. Veterans with overdue clinical reminders can be identified by name and address, allowing for the creation of health fair events that were directed towards communities with veterans with clinical reminders, including COVID-19 vaccination need. A team of health care professionals from VAPIHCS conceived of a health fair program to increase the reach of vaccine events and include preventive care in partnership with the VAPIHCS Vet Center Program, local communities, U.S.VETS, and the Hawaii Institute of Health Services (HIHS). We sought

to determine which services could be offered in community settings; large vaccine events; and at homeless emergency, transitional, or permanent housing. We tracked veterans who received care in the different locations of the directed health fair.

This project was determined to be a quality improvement initiative by the VAPIHCS Office of Research and Development. It was jointly planned by the VAPIHCS pharmacy, infectious diseases, Vet Center Program, and homeless team to make the COVID-19 vaccines available to more rural and to veterans experiencing homelessness, and in response to a decline in facility face-to-face visits. Monthly meetings were held to select sites within zip codes with higher numbers of open clinical reminders and lower vaccination uptake. Informatics developed a list of clinical reminders by zip code for care performed at face-to-face visits.

Partners

The Vet Center Program, suicide prevention coordinator, and the homeless outreach team have a mandate to perform outreach events.[17,18] These services collaborate with community partners to locate sites for events. The team was able to leverage these contacts to set up sites for events. The Vet Center Program readjustment counselor and the suicide prevention coordinator provide mental health counseling. The Vet Center counsels on veteran benefits. They supplied a mobile van with WiFi, counseling and examination spaces, and refrigeration, which became the mobile clinic for the preventive care offered at events. The homeless program works with multiple community partners. They contract with HIHS and U.S.VETS to provide emergency and permanent housing for veterans. Each event is reviewed with HIHS and U.S.VETS staff for permission to be on site. The suicide prevention coordinator or the Vet Center readjustment counselor and the homeless team became regular attendees of events. The homeless team provided resources for housing or food insecurity.

Preventive Health Measures

The VA clinical reminder system supports caregivers for both preventive health care and chronic condition management.[19] Clinical reminders appear as due in the EHR, and reminder reports can be run by clinical informatics to determine groups of patients who have not had a reminder completed. The following reminders were completed: vaccinations (including COVID-19), CRC screening, diabetic foot check and teaching of foot care, diabetic retinal consultations, laboratory studies (lipids, hemoglobin A_{1c}, microalbumin), mammogram and pap smear referrals, mental health reminders, homeless and food insecurity screening, HIV and hepatitis C testing, and blood pressure (BP) measurement. Health records were reviewed 3 months after each event to determine whether they were completed by the veteran. Additionally, we determined whether BP was controlled (< 130/80 mm Hg).

TABLE 1 Demographics of Veterans Attending Health Fairs

Demographics	Large urban (n = 43)	Community (n = 34)	Homeless outreach (n = 38)	Total (N = 115)
Age, mean (IQR), y	62 (51-75)	68 (60-76)	60 (55-67)	62 (55-72)
Sex, No. (%)				
Male	38 (88)	28 (82)	35 (92)	101 (88)
Female	5 (12)	6 (18)	3 (8)	14 (12)
Race, No. (%)				
Asian	18 (42)	4 (12)	5 (13)	27 (24)
Black	2 (5)	2 (6)	7 (18)	11 (10)
Native Hawaiian/ Pacific Islander	6 (14)	16 (47)	12 (32)	34 (30)
White	15 (35)	10 (29)	9 (24)	34 (30)

Settings

Large urban event. The first setting for the health fair was a large vaccination event near the VAPIHCS center in April 2021. Attendance was solicited by VEText, phone calls, and social media advertisements. At check-in, veterans with relevant open clinical reminders were invited to receive preventive health care during the 15-minute monitoring period after the COVID-19 vaccine. The Vet Center Program stationed the mobile van outside the vaccination event, where a physician and a clinical pharmacy specialist (CPS) did assessments, completed reminders, and entered follow-up requests for about 4 hours. A medical support assistant registered veterans who had never signed up for VA health care.

Community Settings. Nine events occurred at least monthly between March and September 2021 at 4 different sites in Oahu. Texts and phone calls were used to solicit

TABLE 2 Clinical Reminders Completed on Site (N = 115)

Clinical reminders completed	Results, No. (%)
Clinical orders	
Blood pressure	52 (45)
Mental health	21 (18)
Diabetic foot examination	8 (7)
AUDIT	27 (24)
Smoking assessment	27 (24)
HMLSS	22 (19)
HIV test	13 (11)
Hepatitis C test	34 (30)
Total	204 (100)
Vaccinations	
COVID-19	73 (64)
Influenza	29 (25)
Tetanus	14 (12)
Recombinant varicella zoster	21 (18)
Hepatitis A	9 (8)
Hepatitis B	5 (4)
Pneumococcal	15 (13)
Total	166 (100)

Abbreviations: AUDIT, alcohol use disorders identification test; HMLSS, homelessness risk screen and food insecurity risk screen.

attendance; there was no prior publicity on social media. Community events required scheduling resources; this required about 30 hours of medical staff assistant time. Seven sites were visited for about 3 hours each. A physician, pharmacy technician, and CPS conducted assessments, completed reminders, and entered follow-up requests. A medical support assistant registered veterans who had never signed up for VA health care.

Homeless veteran outreach. Five events occurred at 2 homeless veteran housing sites between August 2021 and January 2022. These sites were emergency housing sites (2 events) and transitional and permanent housing (2 events). U.S.VETS and HIHS contacted veterans living in those settings to promote the event. A physician, registered nurse, licensed practical nurse, and CPS conducted assessments, completed reminders, and entered follow-up requests. A medical support assistant registered veterans that had never signed up for VA health care. Each event lasted approximate 3 hours.

Process Quality Improvement

After the CDC changed recommendations to allow concurrent vaccination with the COVID-19 vaccine, we added other vaccinations to the events. This occurred during the course of community events. In June of 2021, there was a health advisory concerning hepatitis A among people experiencing homelessness in Oahu, so hepatitis vaccinations were added for events for veterans.[20]

Veterans Served

The EHR was used to determine demographics, open clinical reminders, and attendance at follow-up. Simple descriptive statistics were performed in Microsoft Excel. A total of 115 veterans were seen for preventive health visits, and 404 clinical reminders were completed. Seven hundred veterans attended the large centrally located vaccine event and 43 agreed to have a preventive health visit. Thirty-eight veterans had a preventive health visit at homeless outreach events and 34 veterans had a preventive health visit at the community events. Veterans at community and homeless events were more likely to be Native Hawaiian/Pacific Islander (47% and 32%, respectively) than at the urban vaccine event (14%) (Table 1).

Of the 166 vaccines given, 73 were for COVID-19. Besides vaccination, 204 clinical reminders total were completed at the event (Table 2). Hypertension was the most common reminder with 52 completed; 29 veterans had BP in the hypertensive range. BP cuffs were provided to 19 veterans and CPS follow-up appointments were scheduled for 24 veterans. Of 22 homeless and food insecurity screens, 4 were positive and services and resources were provided. One veteran obtained emergency housing the same day.

Veteran follow-up or completion of recommended services allowed 34 more reminders to be closed (Table 3), with high follow-up for referrals (76%). Within 3 months of an initial BP screen, 22 veterans had at least 1 follow-up with a pharmacist, 17 had BP controlled, and the BP of 5 veterans remained elevated. Screenings revealed abnormal health findings: CRC screening revealed CRC, 6 of the 11 completed laboratory results had an actionable finding, and all diabetic retinal referrals showed retinal disease. Poor follow-up was seen for diabetic high-risk foot referrals and HIV care.

DISCUSSION

This program provided evidence that adding preventive screenings to vaccine events may help reach veterans who may have missed important preventive care due to the

TABLE 3 Clinical Reminders or Appointment Follow-up

Clinical reminders or appointment	Referred, No.	Completed, No. (%)	Abnormal, No.
Blood pressure pharmacist appointment	24	22 (92)	5
Primary care new initial appointment	12	10 (83)	—
HIV care	2	0 (0)	—
Laboratory	15	11 (73)	6
Colorectal cancer	24	17 (71)	1
Podiatry for diabetes mellitus high-risk foot	3	0 (0)	—
Diabetes mellitus retinal referral	3	3 (100)	3
Cervical cancer screen	1	0 (0)	—
Mammogram	2	2 (100)	0
Abdominal aortic aneurysm screen	1	1 (100)	0
Total	**87**	**66 (76)**	**15**

COVID-19 pandemic. The involvement of clinical informatics service allowed the outreach to be targeted to communities with incomplete clinical reminders. Interventions that could not be completed at the event had high levels of follow-up by veterans with important findings. The presence of a physician or nurse and a CPS allowed for point-of-care testing, as well as entering orders for medication, laboratory tests, and consultations. The attendance by representatives from the Vet Center, suicide prevention, and homeless services allowed counseling regarding benefits, and mental health follow-up. We believe that we were able to reach communities of veterans with unmet preventive needs and had higher risk of severe COVID-19, given the high numbers with open clinical reminders, the number of vaccines provided, and the high percentage of racial and ethnic minority veterans at events in the community. Our program experience provides some evidence that mobile and pop-up vaccination clinics may be beneficial for screening and managing chronic diseases, as proposed elsewhere.[21-24]

Strengths of this intervention include that we were able to show a high level of follow-up for recommended medical care as well as the results of our interventions. We have found no similar articles that provide data on completion of follow-up appointments after a health fair. A prior study showed only 23% to 63% of participants at a health fair reported having a recommended follow-up discussion with doctors, but the study reported no outcome of completed cancer screenings.[25]

Limitations

Weaknesses include the fact that health fair events may reach only healthy people, since attendees generally report better health and better health behaviors than nonattendees.[26,27] We felt this was more problematic for the large-scale urban event and that offering rural events and events in homeless housing improved the reach. Future efforts will involve the use of social media and mailings to solicit attendance. To improve follow-up, future work will include adding to the events: phlebotomy or expanded point-of-care testing; specialty care telehealth capability; cervical cancer screen self-collection; and tele-retinal services.

CONCLUSIONS

This program provided evidence that directed, preventive screening can be performed in outreach settings paired with vaccine events. These vaccination events in rural and homeless settings reached communities with demonstrable COVID-19 vaccination and other preventive care needs. This approach could be used to help veterans catch up on needed preventive care.

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Author affiliations
[a]Veterans Affairs Pacific Islands Health Care System, Honolulu, Hawaii

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Ethics and consent
The Veterans Affairs Pacific Islands Health Care System Research and Development approved this as a quality Improvement project and exempt from institutional review board approval.

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