

Unvaccinated healthcare workers were more likely to test positive for SARS-CoV-2 compared to partially and fully vaccinated healthcare workers.

**Conclusion.** COVID-19 vaccination protected HCWs by reducing risk for developing COVID-19. Vaccinating healthcare workers is a crucial infection prevention measure to reduce disease burden, avoid staffing shortages and create a safe environment in the healthcare facility to prevent transmission to other staff and at-risk patients.

**Disclosures.** All Authors: No reported disclosures

### 566. Impact of a Culturally Sensitive Multilingual Community Outreach Model on COVID-19 Vaccinations at an Urban Safety-net Community Hospital

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Session: P-25. COVID-19 Vaccines

**Background.** The United States (US) is one of the most affected countries by the COVID-19 pandemic. A disproportionate burden of COVID-19 deaths is seen in Black, Asian, and Latinx groups. COVID-19 vaccines are the primary mitigation strategy to reduce morbidity and mortality. However, vaccine hesitancy is high in these communities due to factors such as low health literacy, language barriers, and other health inequities. Our objective was to implement a culturally sensitive, multi-lingual, community outreach model to promote vaccine education and facilitate vaccine administration.

**Methods.** Community healthcare workers or “promotoras” were deployed to high traffic areas such as supermarkets, laundromats, churches, and commercial hubs from February-May 2021. The promotoras provided culturally sensitive vaccine counseling to individuals in their preferred language and facilitated vaccine appointments at our hospital. Our data was compared with publicly available data from other facilities organized by ZIP codes defined by the Department of Public Health as low, medium, or high-vulnerability to COVID-19.

**Results.** A total of 109 outreach workers were hired, of which 67% (73) were Latinx, 27% (29) Black and 6% (7) Asian. Overall, 8,806 individual encounters led to 6,149 scheduled appointments and 3,192 completed first doses (Figure 1). A total of 14,636 individuals were vaccinated. Average age was 45.5 (range 12-98). Preferred language was 54% Spanish, 38% English, and 8% Chinese. Ethnicity was mostly Hispanic (66%) with race mostly white (54%) (Figure 2). High and medium-risk ZIP codes represented 69.4% of vaccinations at our facility (Figure 3).



Figure 1. Education encounters and appointments made by community outreach workers and associated vaccinations.

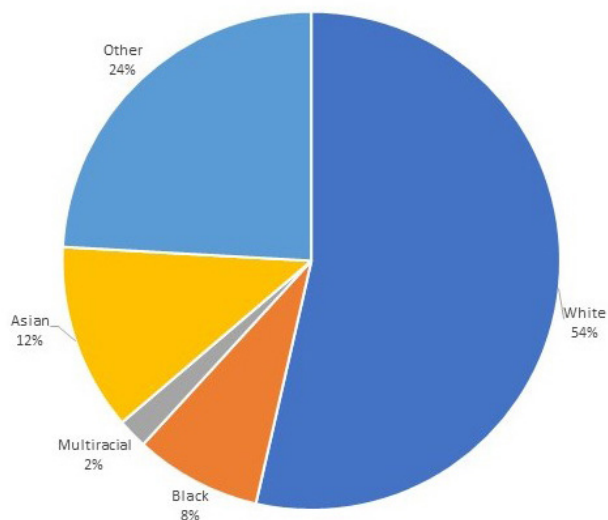


Figure 2. Racial distribution of vaccinated individuals at our facility

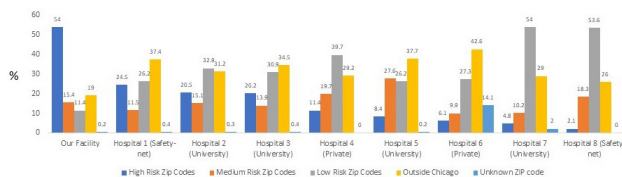


Figure 3. Comparative vaccinations by zip codes from hospitals in our area.

**Conclusion.** We successfully implemented a culturally sensitive community outreach model which resulted in higher vaccination rates from at risk ZIP codes when compared to other hospitals. Promotoras encouraged vaccination in native languages, thereby increasing vaccine awareness and appointment facilitation. Barriers to vaccine access remain in these vulnerable communities. This model educated the community via its own members and may help reduce barriers, increase vaccine awareness and vaccination rates.

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### 567. Reasons for Deferral of COVID-19 Vaccines Among Arab American Healthcare Professionals Living in the United States

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**Background.** The WHO identified the three most common reasons for worldwide vaccine hesitancy to be safety concerns, lack of knowledge and awareness, and religion and cultural issues. There is limited information on this topic among Arab Americans, a rapidly growing demographic in the US. We sought to determine the reasons for deferral of the coronavirus disease 2019 (COVID-19) vaccine amongst Arab American health professionals living in the US.

**Methods.** This was a cross-sectional study utilizing an anonymous online survey. The survey was distributed via e-mail to National Arab American Medical Association members and Arab-American Center for Economic and Social Services healthcare employees. Respondents were considered vaccine hesitant if they selected responses other than a willingness to receive the COVID-19 vaccine.

**Results.** A total of 4,000 surveys were sent via e-mail from December 28 2020 to January 31 2021. The highest group of respondents were between the ages of 18-29 years and physicians constituted 48% of the respondents. Among 515 respondents, 41.9% (n=216) would receive the vaccine within one month of it becoming available to them, and 30.2% (n=156) had already received a vaccine. Among those who would defer the vaccine, 9.3% (n=48) would receive it within 1-3 months, 5.6% (n=29) within 3-6 months and 6.6% (n=34) after over 6 months or longer. 6.2% (n=32) would not receive the vaccine. The three most commonly reported reasons for deferral of vaccine among 75 vaccine hesitant respondents were: “I am worried about the side effects” (65.3%), “I am worried the vaccine moved through clinical trials too fast (54.7%), and “There is no information about long term side effects of the vaccine” (52%). Data indicate that about a quarter of respondents also expressed distrust of the government and the pharmaceutical industry. The results are summarized in table 1.

Table 1. Reasons for Deferral of COVID-19 Vaccine

Reason for Deferral	All (N = 75) N (%)
I am worried about the side effects.	49 (65.3%)
I am worried the vaccine moved through clinical trials too fast.	41 (54.7%)
There is no information on long-term effects of the vaccine.	39 (52%)
I do not trust the pharmaceutical companies that produce the vaccines.	21 (28%)
I do not trust the government agencies that approve the vaccines.	17 (22.7%)
I don't think the vaccine will prevent COVID-19.	12 (16%)
I am pregnant or breastfeeding or planning to become pregnant.	11 (14.67%)
I do not trust the health system that provides the vaccines.	10 (13.3%)
I am at low risk of getting COVID-19.	8 (10.7%)
I have had allergic reactions to vaccines in the past.	6 (8%)
I have already tested positive for COVID-19.	6 (8%)
I am going to let others get it and wait for herd immunity.	4 (5.3%)
I have heard bad things about the vaccines in the media/on social media.	2 (2.67%)
I am too busy to go to a vaccination site.	1 (1.33%)
I do not have health insurance or other coverage for health costs.	1 (1.33%)
I do not have transportation to go to a vaccine site.	1 (1.33%)
I am participating in one of the vaccine trials.	1 (1.33%)
COVID-19 is not a serious disease.	1 (1.33%)

**Conclusion.** Reasons cited by this sample of Arab Americans for deferring the COVID-19 vaccine mirror more general concerns about vaccine side effects and need for information. Concerns about clinical trial procedures and distrust have become more prevalent with COVID-19. This data can help inform COVID-19 vaccine advocacy efforts among health care providers, and thus could have substantial impact on vaccine attitudes of the general population.

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### 568. Comparison of Humoral Immune Response to the SARS-CoV-2 BNT162b2 Vaccine Between Solid Organ Transplant Recipients and Healthy Controls

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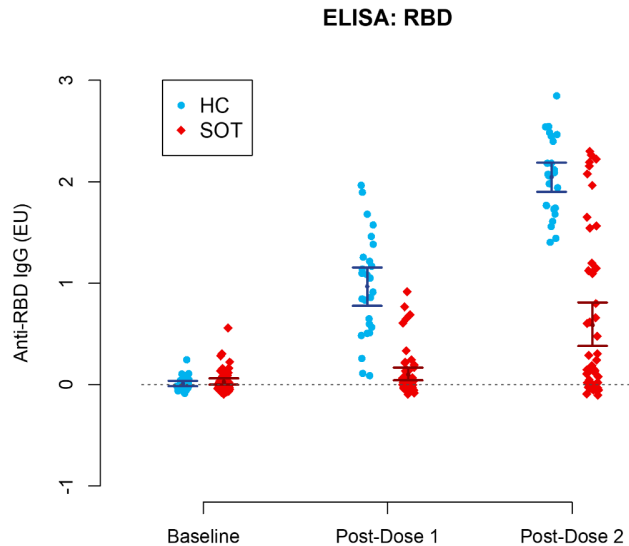
**Session:** P-25. COVID-19 Vaccines

**Background.** Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is associated with increased morbidity and mortality in immunocompromised individuals, including solid organ transplant recipients (SOTR). Despite being excluded from phase 1-3 SARS-CoV-2 vaccine clinical trials, SOTR were identified as high-risk populations and prioritized for vaccination in public health guidelines. We aimed to evaluate the antibody response to two doses of the BNT162b2 (Pfizer-BioNTech) vaccine in SOTR as compared to healthy controls (HC).

**Methods.** SOTR and HC scheduled to receive two doses of BNT162b2 vaccine and able to complete required follow-up visits were enrolled. Blood specimens were collected from participants before receiving the first and second doses and 21-42 days after the second dose. Enzyme-linked immunosorbent assay (ELISA) was used to detect immunoglobulin G (IgG) to the SARS-CoV-2 spike receptor-binding domain (RBD). Generalized estimating equations with a working independence correlation structure were used to compare anti-RBD IgG levels between SOTR and HC at each study visit and within each group over time. All models were adjusted for age, sex, and pre-vaccination seroreactivity in the ELISA.

**Results.** A total of 54 SOTR and 26 HC were enrolled, with mean (SD) ages of 72 (3.6) and 62 (6.7) years, 61% and 35% were male, and 91% and 88% were white, respectively. The most common organ transplant types were kidney (41%) and liver (37%). All SOTR were receiving calcineurin inhibitors. The median time post-transplantation was 7 years. SOTR had markedly lower mean anti-RBD IgG levels when compared to HC with adjusted mean differences of -0.76 (95%CI: [-1.04, -0.47];  $p < 0.001$ ) ELISA units (EU) and -1.35 (95%CI [-1.68, -1.01];  $p < 0.001$ ) EU after the first and second doses, respectively (Figure 1). Both groups had a significant increase in anti-SARS-CoV-2 IgG levels after the second dose. However, the magnitude was lower in SOTR, 0.49 (95%CI [0.31, 0.69];  $p < 0.001$ ) EU than in HCs, 1.08 (95%CI [0.91, 1.24];  $p < 0.001$ ) EU.

Figure 1.



Anti-SARS-CoV-2 RBD IgG levels in solid organ transplant recipients and healthy controls before receiving the BNT162b2 vaccine (baseline), post-vaccine dose 1, and post-vaccine dose 2.

**Conclusion.** Our study showed SOTR mounted weaker humoral immune responses than HC to SARS-CoV-2 vaccines. Given a lower response, SOTR should continue to practice social distancing and masking until data on vaccine efficacy are available in this vulnerable population.

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### 569. Characterization of COVID-19 Vaccine Breakthrough Infections in Metropolitan Detroit

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**Session:** P-25. COVID-19 Vaccines

**Background.** Although COVID-19 vaccines are very effective, vaccine breakthrough infections have been reported, albeit rarely. When they do occur, people generally have milder COVID-19 illness compared to unvaccinated people. A total of 10,262 (0.01%) SARS-CoV-2 vaccine breakthrough infections had been reported as of April 30, 2021. The objective of this study was to evaluate the effectiveness of COVID-19 vaccines and characterize breakthrough infections in our patient population.

**Methods.** This was a retrospective review of all consecutive COVID-19 vaccine breakthrough infections at Henry Ford Health System (HFHS) in metropolitan Detroit, Michigan, from December 17, 2020 to June 7, 2021. Centers for Disease Control (CDC)'s breakthrough infection definition (detection of SARS-CoV-2 RNA or antigen in a respiratory sample  $\geq 14$  days after completion all recommended doses of COVID-19 vaccine) was used to identify cases. Vaccination status was extracted from the electronic medical records using Epic<sup>SM</sup> SlicerDicer.

**Results.** A total of 228,674 patients, including healthcare workers (HCW), were fully vaccinated in our healthcare system. We evaluate 299 patients for breakthrough infection but only 179 (0.08%) patients met the definition; 108 (60%) were female with median age of 59, 60 (33%) were HCW, and 11 (6%) were immunocompromised. The majority (92%) were asymptomatic (62 or 35%) or had mild/moderate illness (102 or 57%); 14 (8%) had severe or critical illness. The status of one patient was unknown. Of those who were symptomatic, 24 (13%) required hospitalization, and 3 (2%) required intensive unit care. One patient admitted for heart failure exacerbation died unexpectedly prior to being discharged. Nine had previous COVID-19 within 4 months but only one was symptomatic; this likely represented residual shedding in the asymptomatic patients.

**Conclusion.** COVID-19 vaccine was very effective among our patients and breakthrough infections were rare. Moreover, the vaccine reduced disease severity and mortality. Efforts should aim to increase vaccine uptake.

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### 570. Prioritized Access to COVID-19 Vaccines Among Vulnerable Communities Increases Vaccination Rates

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**Session:** P-25. COVID-19 Vaccines

**Background.** Based on national recommendations,<sup>1</sup> Beth Israel Lahey Health (BILH) in Eastern Massachusetts (MA) prioritized vulnerable communities in our distribution of COVID-19 vaccines. We hypothesized that creating prioritized access to appointments for patients in these communities would increase the likelihood vaccination.

**Methods.** The BILH health system sent vaccine invitations first to patients of two clinics in vulnerable neighborhoods in Boston (Wave 1), followed by other patients from vulnerable communities (Wave 2) up to 1 day later, and then by all other patients (Wave 3) after up to 1 more day later. To identify whether early access/prioritization increased the likelihood of receipt of vaccine at any site or a vaccine at a BILH clinic, we compared patients in Wave 1 in a single community with high cumulative incidence of COVID-19 (Dorchester) to patients in Wave 2 during a period of limited vaccine access, 1/27/21-2/24/21. Each wave was modeled using logistic regression, adjusted for language and race. By taking the difference between these two differences, we are left with the impact of early vaccination invitation in Wave 1 for a subset of our most vulnerable patients (termed difference-in-differences; Stata SE 16.0).

**Results.** In our study of Waves 1 and 2, we offered vaccinations to 24,410 patients. Of those, 6,712 (27.5%) scheduled the vaccine at BILH (Table 1). Patients in Wave 1 were much more likely to be vaccinated at BILH than patients in Wave 2. Patients offered the vaccine in Wave 1 and living in Dorchester were 1.7 percentage points more likely to be vaccinated at all ( $p=0.445$ ) and 9.4 percentage points more likely to be vaccinated at BILH than another site in MA ( $p$ -value = 0.001), relative to patients living outside of Dorchester and offered the vaccine in Wave 2 (Table 2).