

# A Health System's Approach to Using CBPR Principles with Multi-sector Collaboration to Design and Implement a COVID-19 Vaccine Outreach Program

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*Summary:* The COVID-19 pandemic required collaboration to address vaccine hesitancy in populations of color. A large not-for-profit health system collaborated with a philanthropic organization and a technology company, using principles of community-based participatory research, to develop an outreach program aimed at increasing access to COVID-19 vaccines in two geographically distinct locations.

*Key words:* Community-based participatory research, social determinants of health, multi-sector collaboration, virtual patient navigation, health equity.

## Background

National studies and contemporary reports continue to indicate racially and ethnically diverse communities were disproportionately affected by COVID-19, as they have been from the beginning of the pandemic.<sup>1-4</sup> There is no quick fix to reaching these communities, but strategic multi-sector collaborations and intentional educational outreach to mitigate vaccination barriers are underway.<sup>5</sup> CommonSpirit Health, one of the nation's

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largest nonprofit health systems, implemented multiple efforts to support communities during the pandemic, including coordinating locally-led testing and vaccine efforts. System-level workgroups such as the Vulnerable Populations Council<sup>6</sup> engaged early to ensure messaging around vaccine hesitancy was culturally appropriate.

CommonSpirit Health used existing efforts, such as virtual health care navigation (currently live at eight facilities), and identified a strong philanthropic collaborator to support the development of a new use case to address vaccine hesitancy.

Get Well's platform uses artificial intelligence to quickly personalize care by navigating patients into CommonSpirit Health workflows. Together, the technology and care navigators individualize support, guiding patients to local resources, educational programs, and care. The multi-language cloud-based navigation platform interprets patient attributes as needed to streamline patient interactions.

Deloitte Health Equity Institute (DHEI) is committed to advancing health equity through cultivating cross-sector collaborations, creating accessible data and analytical tools, and sharing insights to foster health equity. Deloitte Health Equity Institute recognizes three distinct but interconnected areas to achieve health equity as an outcome—activating key decision-makers to accelerate change, advancing equitable communities through place-based change, and driving health equity innovation and learning.

In this report from the field, we share a program to navigate vaccine-hesitant patient populations in two distinct geographies: Central Coast, California and Little Rock, Arkansas. Using principles of community-based participatory research (CBPR) diverse stakeholders were engaged to develop the program's service design. This collaboration facilitated an intervention centered on equity and fueled by community engagement.

## **Multisector Collaboration and Community-Based Participatory Principles**

Key principles of CBPR include developing trusting and equitable relationships; building on existing strengths and resources; promoting bidirectional learning opportunities; engaging stakeholders throughout the process; and disseminating results to all partners.<sup>7-11</sup> Although CBPR has been extensively used in public health, there are limited examples in health care systems.<sup>12</sup> Recognizing the importance of local community engagement, the project team decided to use principles of CBPR to design and implement the program to navigate vaccine-hesitant patient populations.

The health equity-centered actions driven by CommonSpirit Health aligned with Deloitte Health Equity Institute (DHEI)'s mission, leading to formal collaboration in May 2021 to deploy a program designed to remove barriers that prevent historically marginalized groups from receiving COVID-19 vaccines. CommonSpirit Health and Deloitte Health Equity Institute (DHEI)'s relationship exemplifies cross-sector collaborative efforts using shared networks and resources to advance health equity.

A CBPR-informed framework was developed to comprehensively guide this collaborative effort. The national CommonSpirit Health team facilitated and operationalized CBPR processes. At the local level, two physician champions were identified to engage their care teams and community partners to participate in the process. The physicians also provided clinical oversight during program implementation and connection to

system leadership with the broader physician group. The operations team and Get Well worked together with local teams to understand community needs. For the service provision, Get Well led efforts to integrate stakeholder feedback to ensure the service design was responsive to local needs.

**Governance structure.** Setting up a governance structure, meant to provide timely feedback to inform equitable design and implementation, was pivotal to these efforts. Figure 1 illustrates the structure developed to guide the program. CommonSpirit Health’s national team led logistics and operational oversight, working with local physician champions to facilitate ongoing design adaptations addressing unique community needs. Both worked directly with Get Well’s team to design and implement virtual patient navigation. Lastly, Deloitte Health Equity Institute was consistently engaged to review community engagement findings, on-going service design, and lessons from the implementation. Their national insight informed preliminary interpretation of findings around patient engagement. DHEI had already been conducting national industry surveys to better understand both the rationale for and impact of COVID-19 vaccine hesitancy for higher-risk and marginalized communities.

Additionally, because of the iterative nature of this effort, in Central Coast insight into patients’ concerns about the COVID-19 vaccination’s effect on women’s health was used by women’s health clinicians to strategically bolster messaging and education. Prior to this finding, the workflow was for medical assistants to offer vaccines prior to patients’ meetings with clinicians. If patients responded “no,” nothing further was done to understand their concern.

**Engagement in service design development.** At the time of program development, Central Coast, California and Little Rock, Arkansas were experiencing surges in COVID-19, particularly within minority groups, spurring intense community-based efforts to increase vaccination rates, including support for vaccine mandates. Program implementation in these two communities provided an opportunity to learn more about the complexity of vaccine hesitancy. For example, Central Coast, California

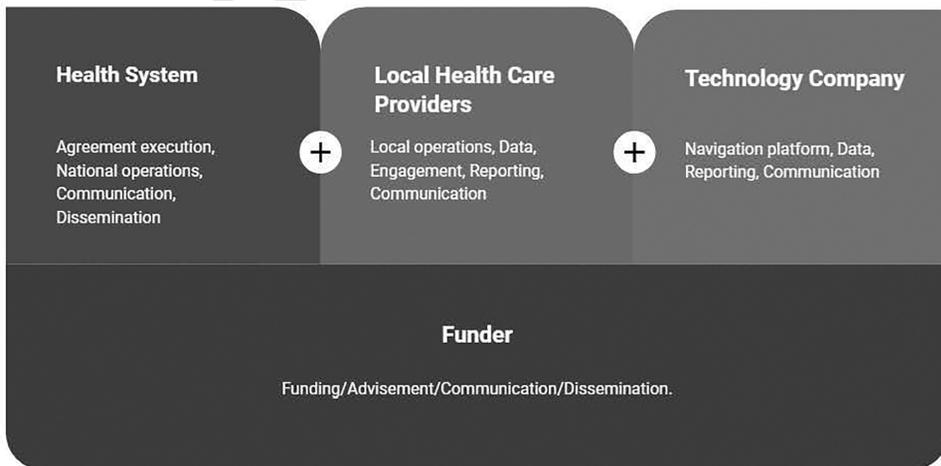


Figure 1. Collaboration structure.

is primarily agricultural with a large number of Indigenous Mexican populations.<sup>13</sup> Patients' decision-making is influenced by a multitude of community factors, making understanding diverse experience critical. Efforts to engage populations such as Mixtecos required a collaborative approach, using local community-based organizations already positioned to support community-tailored COVID-19 testing and vaccination efforts. A collaborative approach is necessary to understand stakeholder limitations and to humbly engage local experts who built trusted relationships with local communities.

Key stakeholders were engaged throughout, from designing the service to informing implementation and interpreting preliminary data as it became available. Conversations across CommonSpirit Health and urgency in certain communities were drivers to engage partners at different levels. Transparency about the experience on the ground as well as reporting of data to the CommonSpirit Health COVID-19 dashboard was critical in prioritizing the communities to be engaged. From there, conversations with stakeholders took place at different levels reviewing the planned approach including integration of EHR data in developing the outreach to specific patient populations. The first group of stakeholders (the "core team") included physician co-leads, clinical informatics and operations of the project. These two physician leaders Drs. Alisahah Jackson and Marijka Grey have supported multiple national efforts concerning vaccine hesitancy and health equity across the health system. Additionally, a designated leader in clinical informatics, Dr. Erine Erickson supported and facilitated efforts to finalize the patient pursuit lists. Lastly, operations of the project were led by Dr. Brisa Urquieta de Hernandez, a health geographer from the population health division.

As previously mentioned, the physician champions for each location, Drs. Monique Díaz and David Foster, not only provided clinical oversight for their local area, but also facilitated connections to all other stakeholders needed to inform processes. Engaging local teams already involved in broader community vaccine and testing efforts was critical in providing the core team with regularly updated information about local surges and priority populations. Local teams consisted of community health and outreach representation, marketing and communication leaders, and clinic staff. Local implementation teams supported core teams by engaging community partners. The partners (i.e., a community-based organization serving the Mixteco community in Central Coast, California and a community clinic serving predominantly African American and immigrant populations in Little Rock, Arkansas) were longstanding and trusted organizations in their communities. Partners recruited community members to participate in listening sessions to communicate their experiences throughout the pandemic. Box 1 shows themes from those conversations that informed the service design.

**Implementing the Equitable COVID Vaccine Outreach-Patient Stratification Tool.** The disproportionate morbidity and mortality effect of COVID-19 on racial/ethnic minority communities,<sup>14</sup> and recognition that these same communities had vaccine hesitancy, created an urgency in developing a new approach to engagement. Therefore, the CommonSpirit Health team developed an evidence-informed patient stratification tool based on CDC guidelines and CommonSpirit Health employee vaccination processes. Table 1 outlines elements to implement a population health management approach to generate pursuit lists shaped by health equity considerations, prioritizing high-risk patients by race/ethnicity, age, and specific chronic diseases. Multiple clinical

**Box 1.****FOCUS GROUP THEMES BY LOCATION****Central Coast, California**

- Personal connection
- Education
- Decision making
- Concerns/Fears
- Illness and missing work
- Long term side effects (reproductive)
- Vaccinated do it for family
- Early pandemic, during COVID testing, bad experience for community members, still remember that
- Addressing other social needs issues
- Distrust of technology

**Little Rock, Arkansas**

- Personal Connection
- Clinic has built strong trust with patients and the community
- It is important that people communicating look like the community they are reaching out to
- Concerns/Fears
- Mistrust of government
- Illness
- Documentation status- newly arrived immigrants everyday
- Distrust of technology

and community committees provided feedback in the development of this approach, ensuring that it was addressing current needs across communities.

*Central Coast, California patient pursuit list approach.* Using their EHR data registry for comprehensive screening as a framework, the Central Coast team produced a pursuit list of patients eligible for COVID-19 vaccination tailored by demographics considering health equity and population health goals. The EHR data source is reconciled with the California Immunization Registry and informed by the state's MyTurn database, the centralized COVID-19 vaccination appointment-scheduling tool, for up-to-date vaccination status. This level of centralization was particularly advantageous when developing registries to understand where patients are in their vaccination journey.

*Little Rock, Arkansas patient pursuit list approach.* Primary care clinics in Little Rock, Arkansas developed a list of patients not yet vaccinated against COVID-19 using the Arkansas Department of Health Immunization Branch's Web Immunization Registration Information System (WebIZ), a system for vaccine management and operations. The local EHR team reports on COVID-19 vaccines from eClinicalWorks and uploads the information to WebIZ. Data are reconciled with local clinic records, integrating both EHR data (including demographics and vaccine status) and population health management data (health risk stratification).

**Virtual patient navigation service design.** While the CommonSpirit Health team prepared the patient pursuit list, Get Well collaboratively developed the service design, drawing from experience engaging similar patient populations. In keeping with CBPR principles, input from the local communities, clinical staff, and the care team was obtained in a number of ways including detailed scripting reviews. The service design ultimately aimed to optimize establishing trust with the community by using local CommonSpirit Health brands, driving patient engagement through scripting and flows

**Table 1.**

**EQUITABLE COVID VACCINE OUTREACH: PATIENT STRATIFICATION TOOL—PATIENT RISK STRATIFICATION AND BINARY POINT ALLOTMENT PROCESS, USING RISK FACTORS THAT HAVE TWO TIMES OR MORE RISK FOR COVID-19 HOSPITALIZATION AND/OR DEATH**

Category	1 Point	2 Points
Age	18–64	≥65
Race/Ethnicity	White	BIPOC
Number of High-Risk Medical Condition Diagnosis*	1	≥2
Social Vulnerability Index Score**	<0.75	≥0.75

*Notes:*

\*High-risk medical conditions: Adults with these medical conditions are at increased risk (High) for severe COVID illness: Cancer, Chronic Kidney Disease, Solid Organ Transplant COPD, Type 2 Diabetes, Heart conditions (Heart Failure, Coronary Artery Disease, Cardiomyopathies), Sickle Cell, Obesity, Down Syndrome, Pregnancy, Tobacco Use Disorder. Adults with these medical conditions may be at increased risk for severe COVID illness: Asthma (moderate-to-severe), Cerebrovascular disease, Cystic fibrosis, Hypertension, Immunocompromised state (blood or bone marrow transplant, immune deficiencies, HIV, use of corticosteroids, or use of other immune weakening medicines), Neurologic conditions (such as dementia), Liver disease, Overweight, Pulmonary fibrosis, Thalassemia, Type 1 diabetes mellitus

\*\*Social vulnerability score optional

(see Figure 2), and improving access to vaccine information by personalizing outreach to patients. Additionally, acknowledging language barriers, the service design supported text messaging in patients' preferred languages (English or Spanish, documented in the EHR) and provided additional live support for Central Coast patients who required Indigenous Mexican language translation.

**Collaboratively defined metrics.** Key to any collaborative effort is identifying shared metrics of success. Aligning success metrics informed by conversations with local community partners was particularly important. For purposes of initial implementation, prioritized metrics included: number of patients (1) receiving outreach, (2) being navigated, and (3) vaccinated; (4) barriers addressed; and (5) engagement rates by race and ethnicity. Lastly, collaborators acknowledged that other metrics may arise during program implementation.

### **Preliminary Engagement Results**

Although the program remains underway, over 20,000 patients have been reached to date. Preliminary qualitative feedback shows a variety of reasons for not obtaining vaccines. Many patients expressed appreciation for having COVID-19 questions answered. Data are also being reviewed by local stakeholders for interpretation of results.

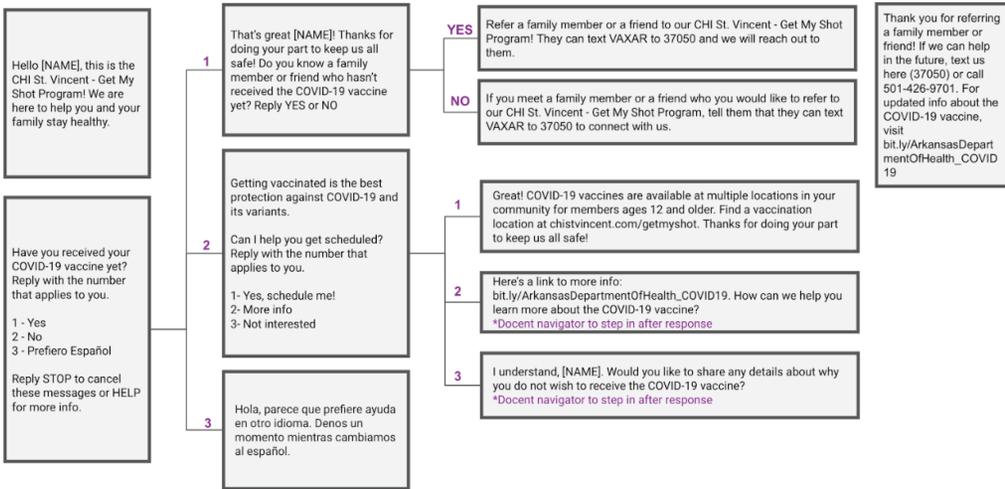


Figure 2. CBPR virtual navigation.

### Key Takeaways

Community-based participatory research is an approach that advocates for equitable representation of all stakeholders in the process of designing, implementing, and evaluating interventions. The pandemic highlighted the lack of equitable engagement of marginalized, high-risk populations in both health care and public health. Their lived experience and voices did not represent decisions made in rapid response to the pandemic, which had deadly consequences. The collaboration between CommonSpirit Health (operator), DHEI (funder, subject matter expertise) and Get Well (service provider) has been critical to design and implementation of the programs described here. The complexity of vaccine decision-making for community members requires an integrated approach that acknowledges health equity using continually updated data. Three key takeaways of this effort are (1) using community-based outreach and engagement approaches within a health system is feasible; (2) using existing population health management tools such as pursuit lists and engaging key stakeholders (health system and public health) sets up the collaboration to acknowledge community experiences, thereby more holistically understanding vaccination barriers; and (3) multi-sector collaborations can increase equitable community engagement.

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