

# Qualitative Evaluation of RADx-UP Projects Addressing COVID-19 Testing Disparities Among Underserved Populations

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In this article, we present findings from a May 2022 to March 2023 qualitative evaluation of Rapid Acceleration of Diagnostics–Underserved Populations (RADx-UP) projects addressing COVID-19 testing disparities among underserved populations. Interviews with academic and community partners from 13 RADx-UP projects revealed that despite the pandemic, projects were able to build trust and relationships with underserved populations. By prioritizing community voices during a public health emergency, RADx-UP projects improved health equity and pandemic preparedness in these communities, successfully conducted community-engaged research, and built long-lasting community partnerships. (*Am J Public Health*. Published online ahead of print March 28, 2024:e1–e6. <https://doi.org/10.2105/AJPH.2024.307632>)

**T**his article highlights key lessons learned from conducting a qualitative evaluation for a national initiative—Rapid Acceleration of Diagnostics–Underserved Populations (RADx-UP)—whereby RADx-UP projects engaged in academic–community partnerships and community-engaged research. We highlight how trust and relationships were foundational to RADx-UP projects’ community engagement activities and how implementation and adaptation of research strategies helped to meet community needs during the COVID-19 pandemic.

## BACKGROUND AND STUDY OBJECTIVE

The COVID-19 pandemic exacerbated disparities and revealed the

disproportionately increased risks of viral infection and adverse health outcomes among marginalized groups in the United States.<sup>1</sup> Inequities were evident early on as the number of COVID-19 cases and mortality rates were highest among Black, Hispanic, and American Indian and Alaska Native populations.<sup>2</sup> Workers in essential, public-facing jobs faced higher exposure risks because of inability to socially distance or work from home.<sup>3</sup> Other vulnerabilities such as limited housing and transportation and membership in certain vulnerable groups (individuals experiencing homelessness, elderly individuals in nursing homes) also heightened infection risks.<sup>4</sup> In addition, low-income and minority communities encountered challenges in accessing COVID-19 testing and treatment.<sup>5</sup>

To address these disparities, the National Institutes of Health (NIH) funded the RADx-UP initiative in 2020. This initiative comprises more than 137 projects grounded in community-engaged principles.<sup>6,7</sup> The uniqueness of RADx-UP projects is that they emphasize collaboration between academic and community partners, aiming to identify community needs, culturally tailor interventions, and effectively disseminate research to communities.<sup>8</sup> The RADx-UP Coordination and Data Collection Center provides central leadership and support for testing, community engagement, and data science to projects within the consortium.<sup>6</sup> It ensures that projects align with the Public Health 3.0 framework, encouraging cross-sector collaboration to promote health equity.

Many scholars have shared lessons from community-engaged research during the pandemic,<sup>9,10</sup> and this study adds to that body of literature by highlighting key lessons from a diverse sample of RADx-UP projects as perceived by academic and community partners.

## RESEARCH QUESTIONS

We developed two research questions to explore the impact of RADx-UP projects: (1) How did community engagement activities and partnerships affect project outcomes and sustainability? and (2) What lessons from RADx-UP projects can benefit others implementing community-engaged research?

## PARTICIPANTS, SAMPLE, GEOGRAPHIC LOCATION, SETTING, AND YEAR OF STUDY

From May 2022 to March 2023, we purposively sampled and interviewed academic and community partners from 13 RADx-UP projects over two funding phases representing a diverse set of project characteristics across priority underserved populations, geographic regions, study designs, and temporal designs. Community partner interviewees represented a variety of organizations; however, most were from community-based organizations or other organizations with direct links to target populations such as nonprofits. Community partners also held a wide range of roles in their communities and organizations, including serving as administrators, program coordinators, and directors. Sample characteristics are listed in [Table 1](#).

## METHODS

We conducted a series of 24 in-depth, semistructured interviews with both academic ( $n = 13$ ) and community ( $n = 11$ ) partners from all 13 projects in our sample to gather a diverse set of perspectives. Interviews investigated partners' experiences conducting community-engaged research and the meanings that RADx-UP partners attached to these experiences.<sup>11</sup> Interviews were conducted via Zoom and were 45 minutes in duration on average.

We conducted a hybrid of deductive and inductive thematic analyses. Codes were developed deductively according to our evaluation objectives; the reach, effectiveness, adoption implementation, and maintenance framework; and the translational science benefit model and were developed inductively based on emerging themes in the data. We conducted initial coding and focused coding of the data. Codebook development and coding were iterative processes that occurred concurrently, and analyses involved a combination of inductive and deductive reasoning.

We also employed member checking, a technique used to assess the credibility of qualitative findings, by sending results to participants to ensure that the results resonate with participants' experiences.<sup>12</sup> Member checking increases rigor in qualitative research.<sup>13</sup> Thus, to corroborate our analysis, we partnered with RADx-UP interviewees to validate our findings.

## KEY FINDINGS

Our analysis revealed two key results: (1) trust and relationships were foundational to projects' community engagement activities, and (2) implementation and adaptation of community-informed

research strategies to meet community needs were important for the success of partnerships.

First, we found that projects built or maintained trust and relationships with community partners in underserved communities. For example:

I would highly recommend building and strengthening community partnerships and trust within communities. . . . If you don't have that trust, and you don't already have those relationships within the community partnerships, it makes it a lot more difficult. (project 5 academic partner)

By building trust, academics were able to partner with community members and organizations to implement RADx-UP projects. Moreover, trusted community members and organizations within communities assisted with interventions, particularly through community outreach and engagement, which was well received by other community members.

Project representatives reported that establishing trust helped increase health equity and pandemic preparedness. This was achieved by being aware of and responsive to communities' needs and being flexible and adaptive in addressing other social determinants of health beyond COVID-19, such as food, transportation, and connecting people to other community resources. Through successful partnerships with communities, RADx-UP projects responded to immediate COVID-19 needs and addressed other social determinants of health.

Second, we found that projects worked with community partners to implement community-informed research strategies, which was a key lesson learned. Project partners highlighted the importance of engaging community

**TABLE 1— Sample Characteristics of the 13 Participating RADx-UP Projects: United States, 2022–2023**

Characteristic	Frequency, No. (%) <sup>a</sup>
Priority underserved population (n = 13)	
Hispanic/Latinx individuals	7 (53.8)
African American/Black individuals	6 (46.0)
Asian individuals	4 (30.8)
American Indian/Native American individuals	3 (23.1)
Children and youths	3 (23.1)
Older adults	3 (23.1)
Rural residents	3 (23.1)
Immigrants and refugees	2 (15.4)
Individuals of lower socioeconomic status	2 (15.4)
LGBTQ+ individuals	1 (7.7)
Pacific Islander individuals	1 (7.7)
People who are incarcerated	1 (7.7)
People who use drugs	1 (7.7)
People with disabilities	1 (7.7)
Pregnant people	1 (7.7)
Geographic location (n = 9)	
South	3 (33.0)
West	3 (33.0)
Northeast	1 (11.0)
Midwest	1 (11.0)
Multistate	1 (11.0)
Study methodology (n = 8)	
Observational	4 (50.0)
Experimental	2 (25.0)
Hybrid	1 (12.5)
Repository	1 (12.5)
Study temporal design (n = 10)	
Longitudinal	4 (40.0)
Cross-sectional	3 (30.0)
Other temporal	3 (30.0)
Community organization type (n = 11)	
Community-based	6 (55.0)
Health care	2 (18.0)
School	1 (9.0)
Faith-based	1 (9.0)
Government	1 (9.0)
Community organizational role (n = 11)	
Director	6 (55.0)
Program coordinator	2 (18.0)
Administrative	1 (9.0)
Other	2 (18.0)

Note. LGBTQ+ = lesbian, gay, bisexual, transgender, and queer; RADx-UP = Rapid Acceleration of Diagnostics–Underserved Populations.

<sup>a</sup>RADx-UP projects may have more than one priority population or study design. Also, as a result of missing data, total project characteristic frequencies may be less than total project sample numbers.

## BOX 1— Overview of Qualitative Themes, Subthemes, and Interview Quotations

Main Theme	Subtheme	Interview Quotations
Improving health equity and pandemic preparedness via trust and relationships	Building or maintaining trust and relationships in communities	<ul style="list-style-type: none"> <li>• “I would highly recommend building and strengthening community partnerships and trust within communities. . . . If you don’t have that trust, and you don’t already have those relationships within the community partnerships, it makes it a lot more difficult.” (project 5 academic partner)</li> <li>• “I’m happy with a lot of things that we’ve done—but the thing that I’m probably proudest of is that we’ve consistently gained the people’s trust over the course of the pandemic and did so in a profound way.” (project 4 academic partner)</li> <li>• “One of the things I think that contributed to our overall success—and I may have skirted over this—is having people from the community, who are already trusted, involved.” (project 8 community partner)</li> <li>• “We do have what we call promotoras. They’re like community outreach health workers who go out into the community. They door knock. They get flyers to businesses.” (project 2 community partner)</li> <li>• “What we did is to give out information—accurate, but more culture-appropriate. . . . The language in how we say it and posted it and talked about it was a big thing in our community. Trust is a big thing, not just because of the medicines and whatever is in it, but also, with the history that we have with the U.S. and doctors.” (project 10 community partner)</li> </ul>
	Increasing health equity and pandemic preparedness	<ul style="list-style-type: none"> <li>• “[Our protocol included] asking them if they’ve had any social determinants of health issues, so whether it’s been loss of income, not familiar with a resource, they’re in need of a food pantry, or just any other resource in the community, and if they need help with them, it prompts them to select yes or no on if they want to be connected with a family navigator who then would help them meet their need.” (project 13 academic partner)</li> <li>• “I think we’re prepared for any kind of emergency. . . . I think there’s a level of understanding, a level of education, that we haven’t had. Having now just gone through it is going to benefit us moving forward. I think we’re prepared.” (project 8 community partner)</li> </ul>
Sharing lessons learned implementing community-engaged research	Implementing community-informed research approaches	<ul style="list-style-type: none"> <li>• “We actually got to give a lot of input into how the implementation was going to work with the project, which is good because we got to provide feedback on best practices on how to engage our own community. . . . It was really cool because we got to really tailor it specifically to our community.” (project 6 community partner)</li> <li>• “You gotta come in and listen first and be willing to communicate and get the ideas of that population—their cultural beliefs, their health equity issues. Include them in the process and try and bring as many of the local people on board the project so that it’s not seen as an outside project coming in and taking over. You wanna have local buy-in.” (project 9 community partner)</li> <li>• “[Academics] need grants, and, so, they have their objectives. Objectives written by NIH and CDC partners which have never probably stepped foot on aboriginal, indigenous, or American Indian land. . . . Like, ‘We got money to achieve this objective, and we have to spend the money, so we’re gonna go do this study, even though the population doesn’t need the study right now.’ That is an overall tension between, I think, academia and research that is done in resource-limited settings like ours.” (project 5 community partner)</li> </ul>
	Implementing culturally tailored strategies	<ul style="list-style-type: none"> <li>• “A lot of people use HD off-air TV and Facebook as their primary communication methods, so our primary tools for communicating back are Spanish radio, English radio, and Facebook and some of the social media platforms—Twitter—to let people know where we’re at—located.” (project 9 community partner)</li> <li>• “It’s crucial to get there on the front lines to talk to the folks. . . . [the academic partner] had events, street parties and things like that. . . . There’s even a team in one community that was going door to door in communities where the COVID vaccination rates were really low.” (project 1 community partner)</li> <li>• “And we’ve made the testing sites to where it’s after hours for most businesses, so it’ll be from like 2 to 6 [pm], 3 to 7 [pm], which makes it easier for people to come after work and bring their whole family.” (project 2 community partner)</li> </ul>
	Adapting research strategies to meet community and public health needs	<ul style="list-style-type: none"> <li>• “I think our lesson learned, or what we would like to share with others, is just to have that flexibility of being able to change with the needs that are coming and evolving from the topic—whether it’s the topic that you’re looking at, or with your community’s needs.” (project 9 academic partner)</li> <li>• “The flexibility and adapting to the different situations, recognizing that COVID was not the only thing. Part of our success early on was that we knew the community we were trying to serve was a food desert, so making available chickens and hams and food in general certainly helped to increase people coming. . . . We also coupled that with getting flu vaccines and other things that were needed in the community.” (project 8 community partner)</li> </ul>

*Continued*

## BOX 1— Continued

Main Theme	Subtheme	Interview Quotations
Sustaining relationships and health equity efforts	Maintaining academic-community partnerships beyond RADx-UP	<ul style="list-style-type: none"> <li>• “One of the reasons I got on the Health Equity Task Force was it seemed to me that they had made a commitment to begin addressing the disparities that exist in our communities. Generally, once we’ve solved the crisis, once the pandemic is gone, we just go back to our own corners and go back to business as usual.” (project 8 community partner)</li> </ul>

Note. CDC = Centers for Disease Control and Prevention; HD = high-definition; NIH = National Institutes of Health; RADx-UP = Rapid Acceleration of Diagnostics–Underserved Populations.

partners to inform research implementation strategies and make decisions, especially early in the research process:

We actually got to give a lot of input into how the implementation was going to work with the project, which is good because we got to provide feedback on best practices on how to engage our own community. . . . It was really cool because we got to really tailor it specifically to our community. (project 6 community partner)

Projects worked with communities to tailor research strategies to meet community needs. For instance, some projects tailored testing sites’ availability so that families could access testing after working hours. Other projects worked with community members to find the best outlet for reaching people, whether at community events, face to face, or through social media.

Project representatives shared that being flexible and adaptable to the evolving nature of the pandemic and to general needs in the community was key:

I think our lesson learned, or what we would like to share with others, is just to have that flexibility of being able to change with the needs that are coming and evolving from the topic—whether it’s the topic that you’re looking at, or with your community’s needs. (project 9 academic partner)

Additional details on data from our analysis are provided in [Box 1](#).

### EVALUATION, TRANSFERABILITY, AND ADVERSE EFFECTS

Our findings are applicable to other public health research projects and initiatives working with underserved communities. It is imperative for researchers working with these communities to build trust and relationships with community organizations and members before, during, and after their research engagement. Our findings show that it is critical to maintain community relationships beyond a single research engagement as a necessary condition for building and maintaining trust and sustained health equity in underserved communities. Researchers should consider these lessons when formulating community-informed research strategies and adapting strategies to meet community needs.

### SCALABILITY

Our findings from the RADx-UP experience have broader implications for other public health interventions. They highlight the continued need for investment in, technical support for, and scale-up of community–academic partnerships nationally, not only as a

strategy for pandemic preparedness but also to address complex public health issues that too often disproportionately affect underserved communities.

In underserved communities, people may distrust research, medicine, and scientific recommendations as a result of historical trauma, which was the case with COVID-19.<sup>14</sup> Yet, RADx-UP projects were able to establish trusted and meaningful relationships with underserved communities by engaging with and listening to feedback from residents about the needs of these communities, often above and beyond immediate COVID-19 testing needs. Partner relationship building and community empowerment occur over time, rather than in just a research funding cycle, and so academic and public health infrastructure needs to be adapted to allow for scalability of partnerships poised for rapid, effective intervention implementation.

### PUBLIC HEALTH SIGNIFICANCE

Our analysis highlights the benefits of community-engaged principles to increase health equity in underserved communities within the context of a public health emergency. However, our findings have implications for projects seeking to implement community-engaged research and for organizations

overseeing research initiatives. Lessons learned from RADx-UP partners may help future studies reach and collaborate with underserved populations. Our findings can inform the policies and practices of organizations such as the RADx-UP Coordination and Data Collection Center that deliver support services to large grant initiatives. Funding agencies and their supporting partners may consider key lessons learned when strategizing ways to best support funded projects.

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## CONTRIBUTORS

S. A. Maras, A. Osinuga, T. Carr, and G. Dave conceived the study and designed the evaluation protocol and tools in consultation with K. Milligan and A. Kelley. S. A. Maras, K. Milligan, A. Kelley, and T. Carr contributed to participant recruitment and data collection. S. A. Maras led and performed the data analysis with K. Milligan and A. Kelley. S. A. Maras, I. Verduzco Gallo, A. Rodriguez, E. Corriveau, K. Milligan, and A. Kelley contributed to the interpretation of the analysis. S. A. Maras, K. Milligan, A.

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## CONFLICTS OF INTEREST

There are no conflicts of interest.

## HUMAN PARTICIPANT PROTECTION

Written informed consent was obtained electronically from participants. The institutional review board of the University of North Carolina at Chapel Hill reviewed the evaluation protocol and determined that this research was exempt.

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