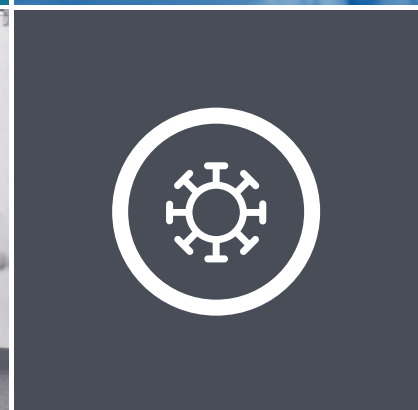
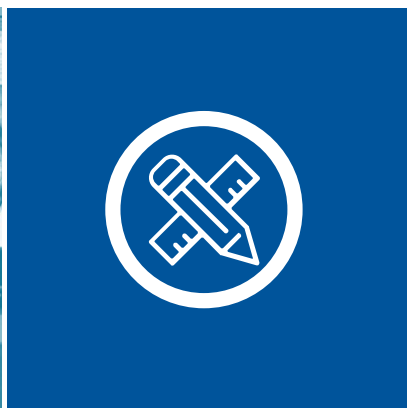


Appendices

Public Health Emergency Preparedness Playbook: Lessons from the RADx-UP COVID-19 Initiative

June 2025



PHOTOS COURTESY RADx-UP IMAGE BANK



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SECTION ONE

APPENDIX A

Establishing & Mobilizing an Effective Community-Engaged Program

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UNC EITs Community Engagement Tasks: Detailed Descriptions Guide

Description:

The purpose of this document is to detail the daily tasks of the EIT Project Specialists and Associate Project Specialists as they relate to their community engagement role. This document is a supplement to the Roles and Responsibilities documents and is meant to provide further clarity on roles.

Tasks:

- I. Meeting Attendance and Participation
 - a. Monthly 30 min – 1 hr meeting with Project Teams
 - i. *For projects that are onboarding:* monthly meetings will likely retain previous structure where functional teams will join to discuss data and testing
 1. In terms of community engagement, first few meetings should be focused on listening and relationship building
 - ii. *For projects in maintenance phase:* meetings will be community engagement focused and it will be at the discretion of the UNC team whether it is necessary to add a function team member to their agenda (ad hoc) or request that functional teams hold their own ad hoc meetings
 1. For description of suggested topics, please see addendum
 - iii. *For projects that are phasing out or in close out:* continue to meet with a monthly cadence until project is officially closed out. Connect with projects about how they have learned with successes and challenges and how we can share this with the rest of the consortium. Look at analyzing community engagement success and plans for sustainability of community connection
 - iv. *Non community engagement discussions* should be limited to questions about enrollment numbers/recruitment success and any ad hoc updates to REDCap dates per the Roles and Responsibilities documents
 - b. Ad-hoc project sponsored meetings (presentations, webinars, community advisory board meetings, etc)
 - i. Utilize bandwidth for community engagement focus to attend project sponsored meetings in an effort to become more 'boots on the ground' involved in community engagement strategies

Addendum

Suggested topics of conversation during monthly Project Team meetings:

- Project team members' perception of and experience with community engaged research
 - Do they believe that community engaged research adds value to their work?
- Understand whether relationship with defined community partners is long established/leveraged based on prior collaborative work with project team members or newly formed
 - This speaks to levels of engagement and potential sustainability
 - Some projects do not have easily identifiable community partners and may be using a different definition of community engagement
 - Identify methods of engagement (events, town halls, social media, etc)
 - Understand how project teams' institution has historically interacted with the community
 - What are some procedural barriers to community partnership from the institution?
 - What are some procedural drivers to community partnerships from the institution?
- Understand social determinants of health identified in study design
 - Identify both positive (protective) and negative (deleterious) social determinants of health
 - Is the project team understanding and seeing social determinants of health that they had not identified or thought about prior to initiation of research (this may be anecdotal if prior to data analysis)
 - If so, has this necessitated any change in study design?
- Understand what levels of community engagement support is needed for the project
- How has required collection of Tier 1 CDEs impacted the work?
- How is the project impacting the community?
 - What is the benefit being provided to the community partner/community?
 - What is the burden of the study being placed on community partner/community?
- Research translation: what are the projects' plans or strategies for dissemination of research findings?
 - Is it bi-directional with community partners?
- What are the current community needs and how can RADx-UP help to meet those needs?
- What are the project's plans for sustainability post RADx-UP funding?
 - Will there be continued collaboration between academic institution and non-academic partners?
 - If yes, what does that look like?
 - What are the plans for future research and/or collaboration with community partners using other funding sources?
 - Can RADx-UP research findings be translated to other disease burdens within the target population?
 - Is the project team already doing this with other awards (supplements, parent awards, etc)
- What community engagement strategies are being employed?
 - What is working? What is not?





WHAT SCIENCE SAYS ABOUT CHILDREN RETURNING TO SCHOOL DURING THE COVID-19 PANDEMIC



This publication supplement is a collaborative effort between *Pediatrics* and The ABC Science Collaborative. It is a collective effort of 67 authors, across a number of institutions, and shares what we have learned so far about children returning to school during the COVID-19 pandemic.

The body of work focuses on the return to in-person learning in underserved K-12 schools and includes an introduction + 11 additional papers on topics such as building partnerships between scientists and school districts, reopening schools to in-person learning during the COVID-19 pandemic, implementing diagnostic testing programs, supporting COVID-19 school safety for children with disabilities and medical complexity, masking adherence in K-12 schools, secondary transmission of COVID-19 in K-12 schools, school quarantine policies and more.

The information below details the titles of publications included in the supplement and the lessons learned.

	TITLE	TAKEAWAY
 1.	<i>"School-Academic Partnerships In Support Of Safe Return To Schools During The COVID-19 Pandemic"</i>	Community involvement and collaboration with school partners were key to eight RADx-UP Return-to-School projects in underserved areas.
 2.	<i>"Building A National Framework To Pair Scientists And Schools During A Global Pandemic"</i>	The groundwork laid by the community-academic partnerships currently addressing COVID-19 in schools can help improve the health of children long-term.
 3.	<i>"From Research To Policy: Reopening K-12 Schools In North Carolina During the COVID-19 Pandemic"</i>	Data shared with ABC from 12 school districts teaching in-person in 2020 gave us better understanding of COVID-19 transmission in schools and shaped legislation after ABC presented to the N.C. General Assembly.
 4.	<i>"Mobilizing Established School Partnerships To Reach Underserved Children During A Global Pandemic"</i>	Two Latino and Native communities (both vulnerable populations) got COVID-19 testing into schools by taking advantage of existing school-academic partnerships.

The ABC Science Collaborative (ABC): an NIH-funded collaboration between scientists, physicians, schools and community leaders that helps school administrators make informed decisions about returning to school.

RADx-UP (Rapid Acceleration of Diagnostics-Underserved Populations): an NIH -funded program aiming for access to COVID-19 testing for all Americans, with a focus on communities most affected by the pandemic.

***Pediatrics*:** the official journal of the American Academy of Pediatrics.

	TITLE	TAKEAWAY
 5.	<i>"Implementation of School-Based COVID-19 Testing Programs in Underserved Populations"</i>	Getting testing consent forms back and added strain on school resources were some of the common barriers to implementing testing in schools, as identified by five projects serving underserved schools.
 6.	<i>"Supporting COVID-19 School Safety for Children with Disabilities and Medical Complexity"</i>	Children with disabilities face unique challenges when it comes to preventing COVID-19; for example, masking, social distancing, and hand hygiene can be uniquely difficult.
 7.	<i>"Masking Adherence in K-12 Schools and SARS-CoV-2 Secondary Transmission"</i>	In a study of two North Carolina school districts, ABC found that schools with more masking had lower transmission rates and older students were more likely to adhere to mask mandates.
 8.	<i>"A School-Based SARS-CoV-2 Testing Program: Testing Uptake and Quarantine Length Following In-School Exposures"</i>	An in-school COVID-19 testing program conducted in a large North Carolina school district reduced the average number of missed school days by 1.5.
 9.	<i>"Secondary Transmission of COVID-19 in K-12 Schools: Findings From Two States"</i>	46% of within-school transmission of COVID-19 among middle- and high-schoolers was sports-related, while the extent of social distancing on buses didn't seem to play a role.
 10.	<i>"Quarantine Elimination for K-12 Students With Mask-on-Mask Exposure to SARS-CoV-2"</i>	Quarantining after a mask-on-mask exposure may not decrease rates of transmission in schools, this study suggests, but it will decrease in-person learning time.
 11.	<i>"Urban Classification, Not COVID-19 Community Rates, Was Associated With Modes of Learning in US K-12 Schools"</i>	In September 2020, rural and suburban elementary schools were 3.4 (rural) and 1.9 (suburban) times more likely to be in-person than schools in urban areas, with similar trends in middle and high schools.

About the ABC Science Collaborative

The ABC Science Collaborative is an initiative that extends across 18 states, connecting scientists and physicians with school and community leaders to help understand the most current and relevant information about COVID-19. The program helps school leaders and state policymakers arrive at informed decisions about returning to school using data from their own communities. Our shared goal is to keep students, teachers, and their local communities healthy and safe.

This research was funded in part by the Rapid Acceleration of Diagnostics (RADx) Underserved Populations (RADx-UP); National Institutes of Health; the Trial Innovation Network, which is an innovative collaboration addressing critical roadblocks in clinical research and accelerating the translation of novel interventions into life-saving therapies; and the National Institute of Child Health and Human Development (NICHD) contract for the Pediatric Trials Network.



RESEARCH SUMMARY

KEEPING CHILDREN SAFE IN SCHOOL

Lessons learned from
the COVID-19 Pandemic

This publication supplement is a collaborative effort between Pediatrics, The ABC Science Collaborative and the RADx-UP Coordination and Data Collection Center. It is a collective effort of 109 authors, including eight community members, across 16 RADx-UP Return to School institutions, and shares what we have learned about reach, access, and effectiveness of COVID-19 testing in school settings.

The body of work focuses on COVID-19 testing programs in underserved K-12 schools and preschools. It includes an introduction and 13 additional papers on topics such as COVID-19 testing of underserved populations, COVID-19 testing for young children, delivering health messages to parents and guardians of K-12 students, at-home and school-based screening testing, school attendance and test recommendations for children with medical complexity, testing enrollment in schools, testing preferences of students and school staff, and more.

The information below details the titles and publications included in the 2023 supplement and lessons learned.



1 Evidence for the Safe Return to School with COVID-19 Testing

Community involvement and collaboration with school partners were key to improving and sustaining the health of school-aged children during the COVID-19 pandemic, according to findings by RADx®-UP school projects.

2 Building School-Academic Partnerships to Implement COVID-19 Testing in Underserved Populations

Collaborations between academic centers and schools helped increase COVID-19 testing in vulnerable children and children with medical complexities using approaches that met the unique needs of these populations.

3 Acceptability and Feasibility of Saliva-Delivered Polymerase Chain Reaction Coronavirus 2019 Tests for Young Children

Saliva sampling for COVID-19 at preschools is a well-received strategy for safely returning and keeping 4- and 5-year-olds in school. Alternate testing strategies may be needed to keep younger children in school.

4 Preliminary Reach of an Information Technology Approach to Support COVID-19 Testing in K-12 Schools

Text messaging and health navigation by telephone are feasible ways to reach a diverse population of parents and guardians of K-12 students to provide health screening messages and offer access to at-home COVID-19 testing.

5 At-Home vs. Onsite COVID-19 School-Based Testing: A Randomized Non-Inferiority Trial

Researchers studied at-home and on-site COVID-19 testing participation and adherence among students and staff at three middle schools that primarily serve Latinx students; the study found that school-based at-home testing is an acceptable strategy for consistent participation in screening testing and may reduce in-school and community COVID-19 transmission.

6 School Attendance Decisions for Children with Medical Complexity During COVID-19

1 in 5 children with medical complexity did not attend school at the end of the 2020-2021 academic year. Family perceptions of school safety policies and messages that encourage attendance may help to address this disparity.

7 Recommendations for SARS-CoV-2 Testing in Children With Disabilities and Medical Complexity

In three studies of COVID-19 testing of children with disabilities and medical complexity, researchers found that special consideration of this vulnerable population is essential to keep them safe and minimize disruption of school services; integration of health care activities in schools, access to in-home and in-school testing, flexible sample collection, and building school and academic partnerships are helpful for preparing schools for future surges or pandemics.

8 A Multi-Study Synthesis of Facilitators and Barriers to SARS-CoV-2 Testing Enrollment in School Settings

School-based infectious disease testing programs can improve enrollment and participation by optimizing the convenience of testing in school settings, supporting students and staff who test positive for infection, appealing to participants' desire to contribute to safer school environments, and making testing enrollment clear and accessible.

9 A COVID-19 Testing Preference Study in Schools

Self-collected COVID-19 testing at school is feasible for K-12 students and staff, though different age groups may prefer different testing methods; acceptance of both anterior nasal and saliva specimen collection was high.

10 Reflections from School Communities in Underserved Populations on Childhood COVID-19 Vaccination

Schools provide a unique context for understanding family and culture-based concerns about vaccines, particularly in underserved communities; developing careful, culturally sensitive strategies that address parent and child concerns is critical to reducing health inequities related to COVID-19 vaccination.

11 Collection of National Institutes of Health Common Data Elements in Pre-Kindergarten through 12th Grade Populations Who Are Underserved: Challenges and Recommendations

Early collaboration with underrepresented populations during the study design process may improve interest and participation in Common Data Element collection efforts and may help address ongoing mistrust issues related to health research data collection in marginalized communities.

12 Utilization and Impact of Symptomatic and Exposure SARS-CoV-2 Testing in K-12 Schools

School-based COVID-19 testing can decrease missed days of school and increase in-person learning time, particularly for groups who have limited access to testing; access to testing could help schools boost infection prevention strategies when outbreaks occur and assist with timely access to treatment strategies.

13 Lessons Learned from the COVID-19 Pandemic in K-12 Education

In a future pandemic, public health experts and school districts can apply the lessons learned from COVID-19 and prioritize in-person education without increasing viral spread.

14 In-Person Instruction and Educational Outcomes of K-8 Students during the COVID-19 Pandemic

During the 2020-2021 school year, increased time spent in-person by a school district was associated with an increased proportion of students achieving grade-level end-of-grade proficiency in both mathematics and reading among K-8 grade students in North Carolina.



About The ABC Science Collaborative

The ABC Science Collaborative is a program that pairs scientists and physicians with school and community leaders, as well as community organizations, to help understand the most current information about COVID-19 and the implications of the pandemic on the well-being of children, their families, and the communities they are a part of. The program helps school leaders make informed decisions using data from their own communities. The ultimate goal of the program is to keep teachers, children, and their local communities healthy, both now and in the future. Learn more at abcsiencecollaborative.org.

About RADx®

RADx® Underserved Populations (RADx-UP) represents a significant investment by the National Institutes of Health to address the COVID-19 pandemic and health equity in underserved populations. The RADx-UP consortium is a network of more than 137 community-engaged research project teams and mini-grant recipients across all 50 states, and U.S. territories and Tribal Nations. Each project is based at an academic institution and relies on the active partnership of community organizations and leaders. Learn more at RADx-UP.org.

Research reported in this publication was supported by the Office of the Director of the National Institutes of Health under award number U24MD016258; National Institutes of Health [NIH] Agreement No.'s OT2HD107543, OT2HD107544, OT2HD107553, OT2HD107555, OT2HD107556, OT2HD107557, OT2HD107558, OT2HD107559, OT2HD108103, OT2HD108101, OT2HD108105, OT2HD108111, OT2HD108106, OT2HD108112, OT2HD108097, OT2HD108110, 3P0HD103525-03S1; the National Center for Advancing Translational Sciences of the National Institutes of Health under award number U24TR001608; and the National Institute of Child Health and Human Development of the National Institutes of Health under contract HHSN275201000003I. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

RADx-UP Establishing a New Working Group Process

I. Purpose

The purpose of this process document is to outline the required steps to establish a new Working Group (WG) as part of the RADx-UP Program. Working groups develop solutions and provide a collaborative virtual space to address specific RADx-UP populations or high-priority issues. These may include guidance on deploying emerging strategies in underserved communities, engagement best practices in specific populations and data stewardship considerations, among others.

II. Scope

This process applies to all RADx-UP members requesting official establishment of a new RADx-UP Working Group. These groups provide an opportunity for RADx-UP awardees and their community partners (CP) to share ideas, develop cross-awardee collaboration, and provide feedback to the Coordination and Data Collection Center (CDCC) and the National Institutes of Health (NIH).

III. Responsibilities

It is the responsibility of the CDCC to ensure RADx-UP members requesting to establish new groups are aware of and follow the process described below. It is also the responsibility of the CDCC to ensure that all groups are established according to this process.

IV. Definitions

TERM	DEFINITION
Working Group (WG)	A group formed under the direction of the WG Steering Committee that has clear goals and objectives and that provides scientific expertise and guidance to advance the overall project goals. The Coordinating Center supports working groups (e.g., meeting facilitation, Zoom meetings, agendas/minutes, space on collaboration platform, etc.). There is no prescribed timeline for a working group, as long as the charge and associated deliverables continue to further the overall project goals.
WG Steering Committee (SC)	The RADx-UP Working Group Steering Committee is a group of individuals responsible for overseeing and guiding the activities of the active working groups within the RADx-UP consortium. The committee establishes goals, sets priorities, and ensures that tasks are completed in a timely and efficient manner. Members of the steering committee should have a strong understanding of the program's objectives and be capable of making strategic decisions to help achieve those goals. They must also possess the ability to work collaboratively with other members of the committee to drive the working groups towards success.

V. Process

To Establish a New Working Group:

Establishing a new RADx-UP working group involves several key steps to ensure the group is structured effectively and able to achieve its goals. Below is the suggested process for establishing a new RADx-UP working group:

New Workgroup Charter Development

Process Step	Details
1) Draft a Workgroup Charter: The RADx-UP applicant should draft a charter or terms of reference for the potential working group (using the RADx-UP Working Group Charter Slides Template), outlining the mission, goals, and responsibilities of the group. This document will serve as a guiding framework for the group's activities.	Identify the need: The first step in establishing a new RADx-UP working group is to clearly define the need for the group. This could include identifying specific research areas or populations that need to be addressed, as well as the goals and objectives of the working group.
	Relevant partner engagement: Identify key partners who should be involved in the working group, such as researchers, healthcare providers, community organizations, and other relevant partners. Engage these partners early in the process to ensure buy-in and support for the working group.
	Define the scope: Clearly define the scope of the working group, including the specific research questions or topics to be addressed, as well as the expected outcomes and deliverables. This will help guide the work of the group and ensure that all members are aligned on the goals.
	Establish a leadership team: Identify individuals who will serve as the leadership team for the working group, including a chair or co-chairs who will oversee the group's activities. The leadership team should be responsible for setting the agenda, facilitating meetings, and ensuring that the group stays on track to achieve its goals.

New Workgroup Charter Approval Process

Process Step	Details
2) After the charter document has been drafted (using the WG Charter Slide Template), the applicant should be send the document to the RADx-UP WG domain lead for review and feedback.	Nothing to add.
3) Once approved by the WG domain lead, he/she will provide the new group proposal (completed charter template) to the RADx-UP WG Steering Committee for review in advance of the next upcoming monthly meeting where the proposal will be discussed internally by the SC.	The SC will assign one of the following statues to the new group proposal: 1) New Group approved without revisions: Group moves forward to the Steering Committee for discussion and vote. 2) New Group approved with revisions: Group moves forward to the Steering Committee with recommended modifications to proposal for discussion and vote. 3) New Group denied: Proposal is denied and group does not move forward.

4) For new group applicants that receive approval (proposal statuses 1 or 2), the domain lead will arrange a date and time for the applicant to present their proposal to the members of the WG Steering Committee.	WG domain lead should re-share the revised charter template with the steering committee in advance of the applicant's presentation.
5) Following the applicant's presentation, the WG Steering Committee votes to approve or reject the proposal via a post-meeting survey.	<p><i>If the SC approves the establishment of the new group, then proceed with the following:</i></p> <ol style="list-style-type: none"> 1) If co-chairs for the group are not already established in the application process, then co-chairs are appointed to the WG. Working Groups select co-chairs based on community, scientific and technical expertise, experience, interest, and willingness to commit to the time required. 2) The CDCC proceeds with setting up supports for the new working group (e.g., designating a assigned CDCC facilitator, establishing regular meetings, etc.) 3) The CDCC Group Facilitator works with the RADx-UP cross-functional teams (i.e. communications, etc.) to proceed with WG start-up.

Exceptions to this process:

- **Subgroups** within an *existing group* do not follow this process. The Co-Chairs of the existing group must be in agreement with the establishment of the subgroup and the goals and objectives of the subgroup. Subgroup chairs are appointed from the existing group members by the subgroup.
- **Interest Groups** do not follow this process. They are self-managed and do not receive program resourcing.
- **Task Forces (initiated by CDCC)** do not follow this process.

New Workgroup Start-up

Recruit members: Recruit additional members to join the working group, including individuals with expertise in the relevant subject areas and representatives from key stakeholder groups. Consider diversity in terms of expertise, background, and perspectives to ensure a well-rounded and inclusive group. Please reference the infographic in the Attachments section (section IX) for the suggested start-up timeline and recommendations for new member solicitation and recruitment.

By following these steps, you can establish a new RADx-UP working group that is well-equipped to address key research questions and make meaningful contributions to advancing health equity in underserved communities.

Facilitating a New Working Group

Process Step	Details
1) Hold an inaugural meeting	Convene an inaugural meeting of the working group to officially launch the group and establish expectations for members. This meeting should include introductions, a review of the group's goals and objectives, and a discussion of the proposed work plan.
2) Revise workgroup charter (if needed)	Within the first couple of WG meetings revise the original workgroup charter (or terms of reference for the working group), to ensure the

	previous mission and goals are still aligned with the group members. This document should be approved by all members and serve as a guiding framework for the group's activities.
3) Develop a action plan (see the Activation template)	Collaboratively develop a action plan that outlines the specific tasks, timelines, and milestones for the working group. Assign responsibilities to individual members and establish a regular meeting schedule to keep the group on track.
4) Monitor progress	Regularly monitor progress towards achieving the goals of the working group, including tracking key performance indicators and measuring the impact of the group's activities. Make adjustments to the action plan as needed to ensure the group remains focused and productive.
5) Evaluate and report	Evaluate the effectiveness of the working group on an ongoing basis, soliciting feedback from members and stakeholders to identify areas for improvement. Please reference the <i>RADx-UP Working Groups – Facilitation and Support</i> process document for more information on the regular progress reports to share with key stakeholders and ensure transparency in the group's activities.

VI. Attachments



RADx-UP Working Groups Governance - Roles & Responsibilities

I. Purpose

The purpose of this process document is to outline the roles and responsibilities of Working Group (WG) members responsible for governance. The document provides a clear understanding of what each member's responsibilities are, how they are expected to perform them and what outcomes are expected.

II. Scope

This document applies to all currently active RADx-UP Working Groups (including Community-Engaged WGs, Collective Impact Networks, and Scientific Taskforces). Successful implementation of these activities aim to facilitate collaboration that leads to the sharing of knowledge and development of resources (e.g., stories, experiences, tools/toolkits, techniques, etc.), strategies, and innovations that further advance the reach of community and project goals. This document outlines the following roles and responsibilities for WG chairs, governance committee members, group organizers, members, and expert advisors/guests.

Key Personnel	Description
Chair and Co-chairs (1-3 individuals)	These individual(s) are responsible for the overall management of the working group. They create a supportive and safe environment which fosters each participant's ability to contribute fully and equally, enabling a shared, collaborative outcome. The WG chair/co-chairs are not simply symbolic leaders; the success of the initiative hinges on the commitment of the co-chairs to pitch in during and between meetings.
Governance Committee (1-5 individuals)	Comprised of workgroup members (1-5 individuals). As a community of practice (CoP), these groups should aim to be one of self-governance. A CoP is best served by a governance model that encourages power sharing and joint decision-making.
Workgroup Members	Members are responsible for actively participating in the meetings. They should contribute their expertise and knowledge to the group's discussions and decision making. Members are also responsible for carrying out any actions agreed upon during the meeting.
Group Organizer	This individual "owns" the charter of the group. They may have ideas about what the goals of the group should be, and how to reach them. This person helps the group stay focused on its particular group and helps provide solutions as issues arise.
Experts Advisors/Guests	Expert advisors are people who are called upon for their specific knowledge on a relevant topic. They are usually not members of the working group but are asked to provide advice and guidance to the group. For example, an invited expert might conduct a requested presentation. If this individual meets the CP compensation criteria then they can be eligible for the standard CP payment rate of \$100 per hour.

III. Responsibilities¹

It is the responsibility of all individuals involved with the RADx-UP Working Groups to ensure they are familiar with these processes outlined in this document. This section outlines who is **Responsible**, **Accountable**, and **Consulted** about Working Group related tasks, communications, and deliverables.

Working Group Leadership & Governance				
Task	WG Type	R	A	C
<ul style="list-style-type: none"> Contributing to the development of the agenda and content for each WG meeting –including serving as thought partners to Backbone staff and helping contribute content expertise Facilitating discussions and decision making in meetings Provide overall guidance to CDCC support staff to facilitate progress toward WG goals Nurturing relationships among Working Group members Attend monthly WG Steering Committee Meeting – 4th Tuesday of each month at 1:30pm EST <ul style="list-style-type: none"> Escalate any challenges to the domain lead for guidance. The domain lead will escalate issues to CEC leadership for further discussion with NIH and CDCC leadership as needed. 	Community-engaged WGs	WG chair/co-chairs	WG chair/co-chairs	Domain Lead and/or CDCC staff
	Collective Impact Networks	Governance Committee	Governance Committee	
	Scientific Taskforces	Group Organizer	Group Organizer	
<ul style="list-style-type: none"> Actively participate in the meetings Contribute their expertise and knowledge to the group's discussions and decision making Carry out any actions agreed upon during the meeting Represent the interests of their organization or group 	All Types	Workgroup Members		WG Lead
<ul style="list-style-type: none"> Provide advice and guidance on a relevant topic Attend meetings when requested to do so Share their expertise and knowledge with the group Assist the group in making informed decisions. 	All Types	Expert Advisors/Guests		WG Lead

¹ **Responsible** (this team member does the work to complete the task), **Accountable** (this team member is ultimately responsible for the task. If work is delegated, the last one to review the task or deliverable), **Consulted** (the team members to be consulted prior to a final decision or action), and **Informed** (the team members who need to be informed on progress and decisions)

IV. Time Commitment

As a Working Group leader/member, you play a vital role in guiding your workgroup towards achieving its goals and objectives. However, this position can potentially require a significant time commitment to effectively facilitate meetings, communicate with members, and oversee the progress of your group's work.

Generally, you should expect to devote at least 2-3 hours per month to your duties as a Working Group leader (i.e. co-chair, governance committee member, or group organizer). This includes preparing and coordinating meeting agendas, facilitating discussions, and following up on action items. Additionally, you may need to spend time communicating with other members, stakeholders, or outside organizations to coordinate efforts and gather input.

Depending on the size and scope of your workgroup's work, you may also need to dedicate more time during certain periods or for specific tasks. For example, if your group is responsible for organizing a conference or event, you may need to commit additional hours for planning and logistics.

Ultimately, the success of your group's work will depend on your ability to effectively manage your time and balance your responsibilities as a WG leader with other professional and personal commitments. Clear communication, delegation of tasks, and a strong team dynamic can also help ensure that your group's goals are achieved while minimizing the time burden on individual members.

V. Review and Revision

This process will be reviewed as needed (more frequent review may be warranted as processes change or major edits are identified). Additional steps include checking link in the process document and reviewing all attachments.

All RADx-UP Program Manual documents are to be reviewed at least once a year.




VI. Attachments

List the numbers and titles of optional flowcharts or any other documents attached to this process. Attachments are to be added after the approval page.

- I. Types of Working Groups (see below)

Attachments

I. Types of RADx-UP Working Groups

WG TYPE	DESCRIPTION
<p>Community-engaged Working Groups (CE WG)</p>  <p><i>Involve</i></p>	<ul style="list-style-type: none"> Purpose: A supportive space for professional exchange and support between RADx-UP projects that share an understanding of COVID-19 related problems. Membership: RADx-UP academic and community partners Roles: Chair/co-chair (1-3) and CDCC staff support (2) Communication Channels: Email, Asana, and/or Slack channels Compensation: Community partners earn \$150 per session. Evaluation: WG identifies 1-3 goals to complete over a 12-month cycle. CDCC staff and co-chairs are responsible for the completion of the following: 1) 3-month activation template, 2) 6-month progress report, 3) 12-month progress report, 4) Bi-monthly feedback form, 5) 12-month WG member survey
<p>Collective Impact Networks (CIN)</p>  <p><i>Shared Leadership</i></p>	<ul style="list-style-type: none"> Purpose: An informal space for ongoing professional exchange and support around a specific objective/focus. Cultivating shared ownership is essential for the sustainability of these networks. Once the WGs begin to take shape, transition from relying solely on the CDCC staff to relying on members to lead and manage group activities is encouraged. Membership: RADx-UP (academic and community partners) + external partners + CDCC Roles: These CoPs will identify and communicate the roles and responsibilities that will support their vision, mission, and growth. Roles may include Leader/Sponsor, Core Team Members, support teams (administration, operations), facilitators, moderators, content area experts, and others¹. Communication Channel: LinkedIn Groups (social media platform) will enable WG members to communicate, organize and share leadership long-term and apart from RADx-UP staff support and structure to develop a sustainable community. Compensation: No compensation Evaluation: CDCC staff and the WG governance committee are responsible for the completion of the following: Group Charter slide deck
<p>Scientific Taskforces (ST)</p>  <p><i>Collaborate</i></p>	<p>Short-term (1-3 months) task force established and organized around a singular SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound) goal. These nimble groups of project representatives can offer their expertise and experience to short-term processes (such as the development of CDEs, derived variables, analytic strategies and analysis proposals) that affect the projects.</p> <ul style="list-style-type: none"> Membership: RAD-UP (academic and community partners) + NIH + CDCC Roles: Group Organizer, Core Team Members, Experts/Guests and CDCC staff support (+1) Communication Channel: Email Compensation: Depends (verify with domain lead) Evaluation: CDCC staff and group organizer are responsible for the completion of the following: Group Charter slide deck

ARTICLE 1. EVIDENCE ACADEMY (EA) INSTRUCTIONAL GUIDE

THE PURPOSE OF THE EQUITY EVIDENCE ACADEMY INSTRUCTIONAL GUIDE IS TO DOCUMENT THE PROCESSES OF PLANNING A VIRTUAL EVIDENCE ACADEMY (EA) EVENT. THE GUIDE MAY BE USED AS A RESOURCE FOR EA STAFF MEMBERS TO REFERENCE THROUGHOUT THE PLANNING PROCESS OF EA EVENTS. IT MAY ALSO ASSIST OTHER PROGRAM TEAMS TO PLAN VIRTUAL ENGAGED CONFERENCES AROUND OTHER HEALTH AND HEALTH EQUITY RELATED TOPICS.

(A) BACKGROUND

The Evidence Academy (EA) is an engaged conference model developed by North Carolina Translational and Clinical Sciences (NC TraCS) Institute at UNC-Chapel Hill. It is a widely used and innovative approach that has been applied to a variety of health topics to facilitate the translation of knowledge and evidence into practice and policy (Rohweder, 2016). EA conferences typically center around a theme and leverage community engagement methods and health equity principles to convene diverse stakeholders (e.g., researchers, health professionals, and policy makers) **to co-learn through keynote and breakout presentations and to collaboratively action plan through discussions and consensus building**. The EA model is composed of the following key elements: 1) a Data Profile, or document which thematically summarizes current data and evidence related to the event's primary topic and is distributed to attendees prior to the event, grounding them in a common knowledge of the topic to be discussed; 2) a 1-2 day in-person or virtual convening that generates knowledge sharing and action planning; and 3) the dissemination of key takeaways and lessons learned via an EA Summary Report and community-tailored dissemination strategy. This model has been implemented regionally in in-person settings, as well as nationally via a virtual platform, and allows planners the flexibility to adapt event settings, agendas, and objectives to their program's need.

The Rapid Acceleration of Diagnostic Testing – Underserved Populations (RADx-UP) Initiative, funded by the NIH, partnered with NC TraCS to adapt the EA model to an annual, national, virtual event that convened RADx-UP research teams and community partners. The annual RADx-UP event series is titled the “RADx-UP COVID-19 Equity Evidence Academy”, and the events' themes center around COVID-19 testing equity and its associated factors. This instructional guide documents the processes adapted and created by the EA internal operating team beginning in Fall of 2020.

(B) PARTIES RESPONSIBLE FOR EA PROGRAM ACTIVITIES

Planning of EA events involves three core groups of stakeholders. Each has a specific scope of responsibility. See table below.

Table 1: Evidence Academy Program Planning Teams

Team	Scope of Responsibility	Members
EA Internal Operations Team (IOT)	To plan, coordinate, and implement the projects and deliverables associated with the EA Program. Meet on a weekly or biweekly basis.	EA Program Coordinator, 2 EA Assistant Program Coordinators, Operational Lead, RADx-UP Project Liaison
EA Planning Team	To provide insight and feedback on the major deliverables associated with the EA program. Meet on a quarterly basis.	Staff and faculty associated with RADx-UP, with a focus on sharing expertise from various workstreams and outside work that would inform themes and speakers for EA. The number of members varies based on many factors (i.e. conference size, organization size, etc.)
EA Steering Committee (SC)	To share expertise and guidance on the selection of event themes, content, and speakers. Meet three times per event cycle.	Diverse group of community partner and academic representatives from across the USA and territories with proven expertise in areas related to event themes. 12 – 15 members.

(C) EA PROGRAM CYCLE

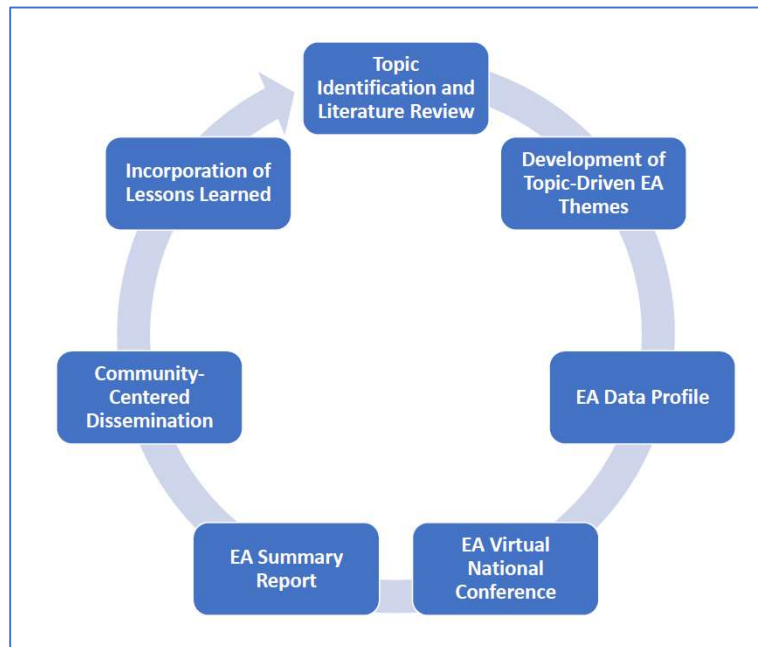
The EA model includes deliverables that precede and proceed the EA event itself and are conducted on an annual basis. The key deliverables of each event cycle are the EA Data Profile, the EA event and agenda (see Appendix Item D for template of agenda), the EA Summary Report, and a Community Dissemination Resource.

Figure 1 and Table 2 demonstrate the sequential order of the program cycle and descriptions of the deliverables and their activities.

Figure 1: Descriptions of Key Activities and Deliverables

EA Program Activity	Description
Identify Topic and Perform Literature Review	Identify the core event topic then review SARS-CoV literature through an equity lens to identify prominent themes.
Development of EA Themes	Thematically summarize literature to inform Data Profile and EA event agenda.
Create and Distribute Data Profile	Publish and disseminate a Data Profile prior to EA event. Profile centers participants around the state of the science and themes to be discussed at EA, relying on community input for translation of content.
Convene Evidence Academy	Convene the conference (“day of show”) for 3-4 hours each day over a 2-day period, to share and collectively understand the state-of-the science, or the current evidence of COVID-19 testing and related factors in the populations most impacted.
Create and Distribute Summary Report	Develop and disseminate an event Summary Report which synthesizes content, key takeaways, lessons learned.
Create and Distribute Community Member Resources	Develop accessible resources for disseminating EA learnings and outcomes to RADx-UP community partners.
Incorporate Lessons Learned	Use participants’ feedback to plan the next EA Program cycle.

Table 2: Evidence Academy Program Annual Event Cycle



ARTICLE 2. EA EVENT PLANNING PROCESS

SECTION 2.01 DEVELOPING AND DISSEMINATING EVENT REGISTRATION AND INVITATIONS

(A) DEFINING THE TARGET AUDIENCE

Define the target audience of the event by consulting with the project's Principal Investigator(s) to understand expectations for the event. The final evaluation goals and outcomes should reflect the intended audience also. Secondary audience members should be invited to the EA event at the request of other project members (e.g., RADx-UP MPIs, NIH leadership, operational leadership, and any other external stakeholders).

(B) BUILDING EVENT INVITATION LISTS

Because EA events are invitation only and there are limited seats based on budget restrictions, a nomination process is suggested so that teams may determine which members should attend. Additionally, the process allows EA staff to emphasize to project teams that community organization partners must be included in the nomination. The nomination process is optional and can be bypassed if leadership and the IOT are not concerned with certain metrics like number of attendees. Nominations will be collected by:

- Creating a nomination form that captures all the data you will need to send nominees the official registration invitation (first name, last name, institution/community-based organization, etc.)
- Drafting a clear message for project leadership inviting them to nominate members of their team. Include a set of instructions that includes the number of participants they may nominate and how to use the form
- Sharing the nomination process and form via program wide mailing lists, during project wide meetings, or through program staff tasked with managing the projects

(C) DISSEMINATING REGISTRATION INVITATIONS

After the nomination process has closed or after a date has been set to open registration, all nominated individuals should receive an email invitation to register for the event. It should include clear instructions for how to complete an included registration form and a message about what registered attendees can expect to receive in the weeks leading up to the event.

- **Registration form:** Develop questions based on the event’s evaluation goals and objectives and logistical needs for the program. Registration should include collection of demographics, attendee type (CDCC staff, academic partner, community partner, NIH, other, etc.) and selection of preferred breakout sessions.
- **Confirmation email:** Create an email message to be sent automatically to attendees once registration is complete to confirm their form has been received and to provide additional instructions on logging into the event. Consider including any additional details that attendees should know about such as other communications they can anticipate receiving and provide a calendar invitation to hold the time on attendees’ calendar.
- **Monitoring Registration:** Monitor the registration list closely leading up to the event and be prepared to send additional invitations upon request by leadership or if nominations are submitted after the deadline. Create reminder email messages to be sent to those who were nominated but have not completed registration and send them out periodically leading up to the day of the event. Assign a team member to field ad hoc requests and send out individual email invitations to approved individuals.

SECTION 2.02 COORDINATION OF THE EA STEERING COMMITTEE

THE PURPOSE OF THE EVIDENCE ACADEMY STEERING COMMITTEE (SC) IS TO ENGAGE TOPIC EXPERTS IN THE ENVISIONING AND DEVELOPMENT OF EVENT CONTENT.

(A) DEVELOPING EA SC DOCUMENTATION

Before initiating the process of SC member selection, the internal operations team should develop the following documents:

- **EA Program SC Charter:** Defines the overall purpose of the SC, which should be broad enough to use throughout multiple event cycles. The charter should establish the SC’s purpose, goals, structure, and membership terms and processes. This document may be revised at the beginning of each event cycle to reflect programmatic changes and any identified areas for process improvement.
- **SC Scope of Work:** Defines the specific scope of work that SC members will be asked to perform during the given event cycle. It should include the event’s goals, overall theme, tentative SC work timeline, and purpose of each of the three SC meetings that will be held leading up to the event.

(B) SC MEMBERSHIP RECRUITMENT AND ONBOARDING

The IOT should consult with program leadership and colleagues to identify potential new SC members as needed depending on the defined terms. New SC candidates should be topic experts related to the overall theme of the current event cycle, and they should be able to provide recommendations for speakers related to the theme and provide feedback on event content which will ultimately shape the EA agenda and Data Profile. The internal team will engage current and new members following the processes outlined below.

- **Engaging Current SC Members:** Draft an email message to be sent to the previous event cycle's SC members who are still eligible to participate based on the defined SC member terms. They should be sent updated versions of the EA SC Charter and EA SC Scope of Work, key dates, honorarium offered, and a deadline to decline if they cannot participate. SC members who are no longer eligible to participate should receive a thank you message, be provided general updates about the next event, and should be invited to attend.
- **Inviting New SC Members:** IOT should draft an email invitation to be sent to all new SC candidates and prepare the EA Program SC Charter and SC Scope of Work documents to be attached to the invitation. The invitation should provide key details of the ask for potential SC members including key dates, time commitment, honorarium offered, and deadline for commitment.
 - **New SC Member Onboarding:** Each new SC member will need to fill out an onboarding form and all (new and current) members will need to provide necessary paperwork to receive their honorarium. The digital onboarding form will collect relevant information. Current members should be asked to review the form and provide any updates to information that was previously collected for the last event cycle. Items to be collected include:
 1. Member's first and last name
 2. Member's professional title
 3. Contact information
 4. Support staff name and contact information
 5. A brief bio, no more than 250 words
 6. A headshot

(C) SC MANAGEMENT

Disseminating a SC ‘Welcome Packet’: SC members should be provided a digital ‘welcome packet’ of resources and documents related to the work, which should be provided in an email at least two weeks prior to the first SC meeting to allow time for review and preparation. The packet may include:

- SC Meeting 1 Agenda
- EA Skeletal Agenda and tentative event themes
- EA SC Scope of Work
- EA SC Program Charter
- SC Member Profiles (using the digital onboarding form data, this document provides background information on each member and will be used to provide SC profiles on the event platform)

SC Meetings Agenda Overview and Preparation

- **SC Meeting 1:** Members will receive an overview of the EA program, review the proposed themes, be presented with instructions for nominating event speakers, and review the Advancing Community-Academic Partnerships Presentation Series call for presentations. The IOT should send an email immediately following the meeting with:
 - A poll to determine combined availability for meetings 2 and 3;
 - A review of the speaker nomination instructions and links to a digital nomination form.
- **SC Meeting 2:** A member of the IOT will facilitate discussions around the nominated speakers, refining the event themes and addressing any concerns regarding content. The IOT may ask individual SC members for assistance with:
 - Outreach to speakers nominated who have not been responsive to invitations to speak;
 - Reviewing ACAP applications;
 - Finalizing their honorarium paperwork.
- **SC Meeting 3:** The IOT and SC will review the final EA agenda, finalize ACAP presentation teams, and discuss any outstanding content consultation needs. The meeting facilitator should also ensure all SC members have received invites to register for the event and answer any outstanding questions.

SECTION 2.03 EA DATA PROFILE DEVELOPMENT AND DISSEMINATION

THE PURPOSE OF THE EA DATA PROFILE IS TO GROUND ATTENDEES IN THE CURRENT EVIDENCE AROUND COVID-19 TESTING EQUITY AND ITS RELATED FACTORS PRIOR TO THE

EVENT SO THAT A COMMON UNDERSTANDING OF THE EVENTS' THEMES IS ESTABLISHED. THIS SUPPORTS ATTENDEES' ABILITY TO MEANINGFULLY ENGAGE WITH THE SESSIONS' CONTENT AND IN GROUP DISCUSSIONS.

(A) DATA PROFILE AND EVENT THEME DEVELOPMENT

- **Selecting the EA Event's Themes:** EA leadership members generate a broad event theme based on the current cultural climate and relevant challenges or advancements in COVID-19 testing and vaccination equity that have been expressed by project participants, through discussions with RADx-UP's principal investigators, and relevant current events. Once a broad theme has been determined, the IOT will conduct a literature review of the current evidence. Themes that emerge from the literature review are refined through discussion with leadership and further exploration until several event themes have been established.
- **Thematic Summaries Developments:** Findings from the literature review are compiled and drafted into a lay friendly summary. Readers should be able to read the thematic summaries and get a general understanding of the current evidence in the literature around the theme and how it impacts COVID-19 testing and vaccination equity.

(B) IN-CONTEXT INTERVIEWS

Project team members, community partners and academic institution representatives are interviewed by EA leadership using an interview guide that prompts responses from the interviewees about the theme's relationship to their project work. The interviews are woven throughout the data profile to provide further context to how the theme is related to the RADx-UP enterprise and to provide examples of promising practices in conducting community-engaged research from both the community partners' and the academic institutes' perspectives.

- **Selecting Interview Candidates:** The IOT will review the list of current RADx-UP projects and their project descriptions to identify teams that are likely able to speak to the connection of their work to the themes. Diversity of geography, roles, communities served, and project settings will also be considered when determining the best fits for the interviews.
- **Outreach and Scheduling of Interviews:** The RADx-UP Project Liaison will work closely with the EA coordinators to conduct outreach and schedule interviews with project team members. The project liaison works directly with projects and other staff who also serve as lead contacts between projects and RADx-UP CDCC. The individual in this role can use these relationships to make introductions and

determine the best way to reach out to individual project team members. Once an individual agrees to be interviewed, the coordinators will work with EA leadership to schedule a 45-minute Zoom interview.

- **Preparing Interview Content for Publication:** Interviews are conducted and recorded using Zoom, and once interviews are complete the IOT should collect the interviewees' bio and headshot to be included in the data profile. Interviews will be roughly transcribed to find impactful quotes and messages shared in the interview, which will be highlighted throughout the data profile. Links to the recorded interviews are embedded in the Data Profile alongside the key quotes.

(C) DESIGN AND PRODUCTION

The EA team, along with the support of a graphic design team, works to organize and present the Data Profile. The Data Profile is made available in both English and Spanish. 508 Compliant PDF formats are made available for ease of access. The typical formatting of the Data Profile includes the following sections:

- **What This Data Profile Includes:** Outlines the layout of the Data Profile as well as how to use the interactive website.
- **Executive Summary:** Details the purpose of the Data Profile from the perspective of EA leadership.
- **Evidence Academy Contributors:** Covers basic information about the EA speakers and contributors.
- **RADx-UP COVID-19 Equity Evidence Academy Themes 1-6:** Thematic summaries give general information about the themes developed for the Equity Evidence Academy as well as how those themes relate to the work being done by RADx-UP.
- **About RADx-UP:** Gives relevant context to better understand the RADx-UP initiative.
- **Glossary of Terms:** Defines and provides context for any words or phrases that may be unfamiliar to a layperson.
- **Acknowledgements:** Recognizes all those who have made contributions in the development of the Data Profile.

(D) DISSEMINATION AND EVALUATION

The EA team partners with a team of evaluation experts on the development and implementation of basic survey questions to determine if the Data Profile meets the needs of readers. The survey is programmed using Typeform or a similar service and is embedded directly in the Data Profile interactive webpage. Evaluation questions may include:

1. What is your role in RADx-UP?

- A. Project Team Member-academic institution
 - B. Project Team Member-community partner
 - C. CDCC Staff Member
 - D. Other
2. How likely are you to use the information from this report?
- A. Not at all likely
 - B. Somewhat likely
 - C. Quite likely
 - D. Very likely
3. Please rate the overall quality of the Data Profile:
- A. Very poor
 - B. Poor
 - C. Good
 - D. Very good

**Those who answer “Good” or “Very good” for Q3 are directed to short-answer Q4:*

4. What did you like most about the Data Profile?

**Those who answer “Poor” or “Very poor” for Q3 are directed to short-answer Q5:*

5. What could be improved about the Data Profile?

(For example, the content, the layout, the video interviews, etc.)

SECTION 2.04 VIRTUAL EVENT PLATFORM DEVELOPMENT AND MANAGEMENT

(A) FIRST TIME VENDOR SELECTION AND ONBOARDING PROCESS

If a virtual event platform vendor is needed, the IOT team will interview potential vendors and select one that offers required capabilities to support the agenda structure of EA events. Once the vendors’ status with the university has been established, EA staff members will

need to submit the following documents to get a signature from the institution's contract department and establish payment processes.

- **Vendor Onboarding Documents:**
 - Vendor's W-9
 - HB Brand Vendor Specific Waiver of Competition
 - Sole Source Justification
 - Vendor Contract Agreement

(B) VENDOR CAPABILITIES NEEDED TO SUPPORT EA'S AGENDA STRUCTURE

- **Registration support:** The platform should support mass communications with registered attendees so that the IOT can easily send out updates and relevant post-event messages efficiently. The registration should also have a mechanism available to group attendees into breakout and roundtable rooms based on their preference selected at registration.
- **Agenda Support:**
 - Ability to have up to 500 virtual participants in the same conference space at once for keynotes and main conference sessions
 - Ability to host up to six concurrent breakout sessions
 - Ability to provide small roundtable discussions of no more than 20 participants simultaneously
 - Ability to provide informal networking spaces for no more than 10 participants simultaneously
- **Networking Capabilities:** Ideally, the platform should include networking features that allow participants to connect meaningfully outside of the formal EA event sessions. These features may include one-on-one meetings and chat abilities and the ability to pair conference participants in informal networking sessions by 'type'.
- **Accessibility and Inclusion:** The platform should provide options for closed captioning and translation during the EA event. During the registration process registrants can indicate any accommodation needs, which the staff will review and communicate with the individual(s) how to access translation or other accommodations as needed.
- **Speaker Onboarding and Training Support:** Vendor should make themselves available in advance of the event to train event speakers to log into the platform, advance slides, use the microphone and camera, and engage with audience as needed/desired.

- **Volunteer Onboarding and Training:** Vendor should make themselves available for group trainings for event staff volunteers in advance of the meeting. Training should include any features that will be utilized by staff members per their role. For more information on Volunteers see section 'Volunteers'.
- **Internal Staff Communication:** The platform should provide a 'room' where internal staff members can meet throughout the conference to troubleshoot and resolve any issues as needed.
- **Day of Event Technical Support:** Vendor should make themselves available during the event to offer Speakers and Volunteers support with accessing sessions, sharing and advancing slides, accessing microphone and camera settings, and other platform related issues.

(C) MEETING WITH PLATFORM VENDORS

- **Ongoing Communications:** IOT staff should meet with vendor representatives periodically to build the platform, plan registration and communications timelines, and receive training on the platform for any features that staff may need to use leading up to, during, and after the event.
- **Run of Show Rehearsal:** Prior to the event all relevant stakeholders should attend a rehearsal where the platform vendor walks through each step of the run of show/production schedule to ensure that all slide decks are correctly timed, flow from one session to the next is seamless, etc.

SECTION 2.05 PLANNING AND EXECUTING THE EA RUN OF SHOW

THE PURPOSE OF A RUN OF SHOW (ROS) DOCUMENT IS TO RECORD THE DETAILED ACTIONS OR INSTRUCTIONS TO BE TAKEN BY THE IOT MEMBERS, EVENT VOLUNTEERS, AND THE PLATFORM VENDOR'S TEAM MEMBERS DURING THE EVENT.

- **ROS Development Process:** The ROS is a living, iterative document that IOT members can begin populating early in the planning process, and it provides a visual for team members to refer to when planning event details and logistics. The final ROS document should be shared across all members of the IOT, platform teams, and possibly the event volunteers. Any last-minute changes to the ROS must be shared across all parties to ensure that production of the event runs smoothly.
- **ROS Format:** Using the EA event's agenda, a ROS document should be drafted early in event planning and updated and refined throughout the planning process. Each event session should be included in the ROS and minute by minute timing should detail when and who

will perform actions including inputting chat scripts, providing prompts to complete session evaluations, and sharing session slide decks.

- **ROS 'Roles':** Prior to the EA event, the IOT should determine what roles are needed to support the event agenda and assign roles to team members. Roles that are needed on the day of the event have included:
 - **Volunteer Manager:** Closely monitor the volunteers' group chat to answer questions and assist as needed.
 - **Registration Manager:** This individual should be listed as the contact person for those who attempt to register on the day of the event, and they should be prepared to quickly provide event access on a case-by-case basis.
 - **Chat Script Manager:** This individual is responsible for placing messages into the chat at appropriate times as outlined by the ROS and to monitor the attendees' comments and questions during main conference sessions that are made in the chat.

SECTION 2.06 EVIDENCE ACADEMY EVALUATION PROCESSES

Evaluation of the EA event and the program's deliverables is designed and analyzed by the IOT in partnership with an evaluation team that conducts evaluation for the RADx-UP initiative. The two teams work together to determine the events' evaluation goals and methods of data collection, which may vary between program cycles. By design, there are multiple opportunities during the event to collect data from participants regarding individual event sessions, and at the close of an EA an overall survey that comprehensively evaluates the event is disseminated to all attendees. Gift card raffles for participation have yielded higher response rates and should be offered when possible.

Once all evaluation activities are complete the evaluation team compiles results into a slide deck and provides slides that summarize key findings and recommendations. The slides are shared with the IOT and leadership, and they may be used to develop presentations for other RADx-UP meetings as requested. The findings and recommendations are used to inform future planning efforts.

(A) DEMOGRAPHIC DATA COLLECTION

A key component of the EA model is to have a diverse attendee profile so that multiple perspectives are brought to the table for co-learning and generation of recommendations or lessons learned in the roundtable discussions. Demographic data is collected at registration to determine the diversity of attendees and presented to the audience during the opening EA session on Day 1.

- Demographic Data points collected at registration may include:

- Race
- Ethnicity
- Gender Identity
- State of Residency
- Urban/Rurality
- Affiliation with RADx-UP (community partner, academic researcher, staff, NIH leadership, etc.)

(B) PROCESS AND OUTCOME DATA COLLECTION

EA events have included evaluations at the end of breakout presentations, roundtable discussions, and at the conclusion of the event. Process and outcome data have been collected for process improvement purposes and to measure the impact of the EA event on attendees' project work.

- **EA Event Survey Descriptions**

- **Breakout Session Surveys** include questions to determine if the presentations' objectives are met, which are provided by presenters before the event. Attendees are also asked to rate the quality of the session and to share what they liked or what could be improved in the future. Time should be provided during the last 3 – 5 minutes of the session for attendees to fill out the survey, which is provided in the session chat. Session facilitators are responsible for prompting attendees to participate in the evaluation.
- **Roundtable Discussion Surveys** ask attendees to rate the quality of the session and to share what they liked about the session and what could be improved in the session. In past events the survey has included questions designed to determine if attendees engaged in networking during the roundtable. The survey is disseminated and prompted to attendees via the session chat by the facilitator during the last 3 – 5 minutes of the session.
- **Overall Event Evaluation Surveys** are announced by EA Leadership and disseminated at the closing event session on Day 2 in the session chat. They are also immediately sent via email to all attendees once the event has ended. This survey has included questions that evaluate attendees' perceived quality of the event, whether participants learned applicable information, the likelihood that attendees will use the information in their work, and whether they engaged in meaningful networking.
- **Post Event Evaluation Surveys** are distributed two-months following the event, and survey questions have included whether participants have applied information learned at the event to their work, if they intend to apply information, and what barriers may exist for doing so.

- **Qualitative Data Collection:** To learn more about attendees' experiences with the EA event, EA Data Profile, and post-event dissemination qualitative interviews have been conducted using an interview guide co-developed by the evaluation and IOT teams.

(A) VOLUNTEER RECRUITMENT AND TRAINING

The number of volunteers and the needed volunteer roles is determined by the upcoming event's agenda and the number of participants expected at the event. EA volunteer roles are listed below with the processes for recruitment and training. Typically, each breakout presentation and each roundtable room will need one facilitator and one notetaker. Each theme should be assigned an individual reporter who will attend their assigned theme's breakout presentation session(s) and will float between its roundtable discussions. Descriptions of volunteer roles can be found in Appendix E.

- **Virtual Chat Monitors and Session Notetakers: Recruitment and Training**

Steps to recruit, train and manage the chat monitor and notetaker roles are detailed below. These roles do not require public speaking or facilitation skills but should be performed by individuals who are digital natives or comfortable with learning new virtual skills. Each breakout presentation should have one chat monitor and one notetaker, and each roundtable room should have at least one notetaker. The chat monitor can also hold another role during the session such as facilitator or notetaker.

- Identify how many volunteers are needed based on the number of themes and the number of simultaneous sessions planned for each day.
- Draft descriptions for each volunteer role so you can provide enough information to help the volunteer determine if they can perform the role. See Appendix E for volunteer roles.
- Recruiting Volunteers (Chat Monitor and Notetakers only): Draft a call for volunteers to be sent to staff. Communicate roles, expectations, and training requirements to perform the role. Include a digital volunteer sign-up form that captures data needed for coordination of training, assigning roles, and contacting volunteers.
- Send the recruitment email to individuals who volunteered in previous EAs first and provide a deadline to commit. Once the deadline has passed, assess how many volunteers are still needed and further disseminate the recruitment message across to other staff members.
- Once most volunteer needs for the chat monitor and notetaker roles are filled send out calendar holds and session assignments to each volunteer and announce times and dates for training.
- Disseminate a volunteer guide and access to any needed resources such as notetaking templates or links to sessions specific to the role prior to the event and include instructions for how to access the volunteer 'hub' (see section B below) and a communications plan for the day of the event.

- **Facilitator Recruitment, Training and Management**
 - Identify previous EA volunteers or other staff members with experience in public speaking and facilitating discussions and invite these targeted individuals. Provide role descriptions, role expectations, and other needed details.
 - Send out individual invites to volunteers with a deadline for commitment. Once the deadline has passed, assess if any additional volunteers are needed.
 - Disseminate a facilitation guide that includes a script that informs the volunteer when to provide instructions such as when attendees should fill out session surveys.
 - Breakout Presentation facilitators should be provided with a short script to introduce their assigned session's speaker(s) and a few questions to ask during the Q&A if attendees have not submitted questions.
 - Coordinate a training session(s) that includes time for both virtual platform navigation training and time for facilitation guidance review.
 - Provide access to any needed resources such as notetaking templates or links to sessions specific to the role prior to the event and include instructions for how to access the volunteer 'hub' (see section B below) and a communications plan for the day of the event.

(B) VOLUNTEER RESOURCE DEVELOPMENT AND DISSEMINATION

- **Volunteer Guide:** Volunteers will receive a guide prior to the event which will also be presented during volunteer training. Each of the volunteer roles should have a separate guide with instructions and links to needed resources to perform the role. Include timing for when certain roles should transition between sessions, close sessions, share surveys, etc. Supplemental training materials may include videos demonstrating how to navigate the virtual platform or screenshots provided in a document.
- **Volunteer 'Hub':** Volunteer guides, supplemental training materials, relevant session links, and relevant document links should be stored in an online shared folder/space for volunteers to easily access the materials as needed before and during the event. The IOT team should be ready to provide a link to this central 'hub' during the event in case a volunteer needs quick access. A link and/or instructions to find the 'hub' should be simple and clearly defined in communications with volunteers preceding the event.
- **Communications Plan:** A centralized group chat using WhatsApp, Slack, or another communications tool that all volunteers have access to, should be set up for day of communications, and a team member should be assigned to monitor it before and during the event so they can easily assist volunteers as needed. It is also helpful for all volunteers assigned to the same theme to establish a direct line of communication with one another so they can keep one another informed as needed.

ARTICLE 3. POST EVENT ACTIVITIES

THE PURPOSE OF THE EA SUMMARY REPORT IS TO FURTHER DISSEMINATE THE KEY TAKEAWAYS AND LESSONS LEARNED THAT ARE IDENTIFIED AT AN EA EVENT BY SUMMARIZING THE EVENT'S PRESENTATIONS, ROUNDTABLE DISCUSSIONS, AND KEYNOTE ADDRESSES AND BY PROVIDING AN EXECUTIVE SUMMARY AND CONCLUSION OF COMPREHENSIVE LESSONS LEARNED.

(A) EA SUMMARY REPORT

The EA Summary Report is published within 2 months of the EA event and disseminated to attendees and other RADx-UP stakeholders. It should include the following sections: an executive summary, demographic infographics, purpose of the EA, thematic summaries that include takeaways from themes' breakout and roundtable sessions, and a conclusion of lessons learned.

- **Compiling and Documenting EA Event's Key Takeaways and Lessons Learned**
 - Following the EA event's close, IOT members should thematically compile and save all sessions' notes taken by notetakers, presenters' slide decks, recordings of the presentations, and sessions' chat transcripts.
 - Recorded presentations and slide decks should be published on the RADx-UP EA webpage.
 - Each theme's compiled resources should be reviewed and a thematic bulleted summary of the key takeaways from breakout presentations and the lessons learned from the roundtable sessions should be drafted and cross checked by other team members. Summaries should include links to session recordings and slide decks for readers to learn more.
 - Keynote addresses should be summarized in a short narrative form.
 - Leadership members are to draft an executive summary that introduces the event's themes, goals, objectives, an attendee demographic profile (infographics recommended), and a conclusion that summarizes the comprehensive lessons learned throughout the event.
 - Leadership should provide the executive summary and lessons learned section to bookend the keynote and theme summaries.
 - The Summary Report will be translated to Spanish and go through a graphic design process.
- **EA Summary Report Dissemination:**
 - The Summary Report will be posted on the EA website in both English and Spanish and featured as a 'news' article on the RADx-UP website.

- The report should also be disseminated via email to the entire RADx-UP enterprise, attendees, and other stakeholders. The email message should include a high-level description of the content provided in the Summary Report and details for how to access event content online.

(B) COMMUNITY DISSEMINATION

Purpose: To support dissemination and adoption of the key takeaways and lessons learned at the EA event to community partners and lay audience stakeholders.

After the EA event the IOT should determine the best format to disseminate the key takeaways and lessons learned based on current resources, trends in engagement, and successes and challenges of past efforts. Past examples include turnkey slide decks, webpages, webinars, and speaker spotlight articles published online. Once a format has been determined and resources are developed, the content should be reviewed by community partners in English and Spanish and then revised to reflect their feedback. The final versions of resources should be published on the RADx-UP website and disseminated via the listserv, social media, the attendee list, and to other stakeholders via email.

- **Documenting Lessons Learned:** Shortly after the EA event the IOT should document or hold a debriefing meeting to determine what aspects of the event planning and execution worked well and opportunities for improvement for future events. Lessons learned and processes should be documented and saved in an easily accessible folder so that the team can reference past processes and documents that can be duplicated or adapted for the next event cycle.

Once all evaluation activities of the EA are complete, the evaluation team will provide a slide deck of the evaluation results including an analysis of surveys, qualitative interviews, and recommendations.



SECTION ONE

APPENDIX B

Strengthening Partnerships to Reach Communities

B1: CDCC Community Engagement Framework

B2: Best Practices for Community Engagement Training

B3: CCPH Office Hours Flowchart

B4: Hispanic Services Council Social Needs Screening Tool (English/Spanish)

B5: CATCH-UP: Practice Assessment



CDCC Community Engagement Framework

February 2023

A collaboration between CCPH, DCRI, and UNC-CHER






The RADx-UP CDCC is funded through an NIH emergency cooperative agreement U24-MD016258-02.





CDCC COMMUNITY ENGAGEMENT FRAMEWORK

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RADx-UP, as NIH's single largest investment in health disparities research, brings together institutions and communities in partnership to connect underserved communities to needed resources and COVID-19 testing. As a centralized source of support for the more than 125 RADx-UP projects conducting [community-engaged research](#), it is important for the CDCC to ensure internal leadership and staff are well informed and equipped with the knowledge and skills necessary to support community-engaged research. As CDCC supports these projects, it is important that it models community-engaged approaches.

In early 2021, the Community Engagement Core initiated meetings with CDCC leadership and staff, as well as RADx-UP academic and [community](#) partners, to better understand their needs and observations around community engagement. These meetings and listening sessions provided insight that spoke to the need for guidelines to support CDCC's efforts to build a culture of engagement. Across these meetings, similar needs emerged:



A standard definition of community engagement



Best practices to support cores as they apply community-engaged approaches to their work



Guiding principles to inform the work of the CDCC

In response, the Community Engagement Core developed this framework to help guide CDCC leadership and staff in their work. While this guide serves as an internal working document, view this as a guide to support interactions, processes, initiatives, etc. both internally and externally, recognizing that the audience will vary depending on the situation or need. Also, acknowledging that some work will require more layered approaches as your audience may involve both internal and external [partners](#) or [stakeholders](#) at different steps of the process.

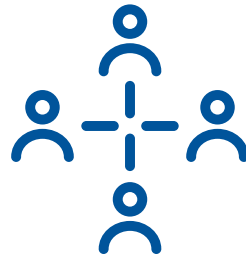
Keep in Mind

This document is fluid. As you work to implement best practices identified in this guide, make sure to take note of challenges, successes, and/or additional best practices identified during your work. There will be evaluative check-ins 4, 8, and 12 months post-implementation. Nevertheless, if you need support in the interim, feel free to reach out to CCPH for support. As you work to incorporate more community-engaged approaches in your work, remember that change takes time. The more you do it, the more natural it will become. Give yourself grace and keep engaging!



To work within a culture that is informed by community-engaged practices across each core of the CDCC. While the implementation of **community engagement** may vary based on the content area of the core, the principles of **equity**, honesty, trust, assurance, and mutual understanding will be core **principles** that guide our community engagement work.





Community engagement:

An ongoing process of building and nurturing relationships of mutual understanding and trust between communities and those seeking to connect with them, including liaising between [community partners](#) and larger systems.





To foster an environment in which all are welcomed at all stages and co-lead decision-making. This means partners, including academic and community partners, can not only express concerns and provide feedback but also engage in strategic planning and initiate new opportunities to improve the impact of the CDCC and RADx-UP-affiliated projects.





Community engagement is an ongoing process of building and nurturing relationships of mutual understanding and trust between communities and those seeking to connect with them, including liaising between community partners and larger systems.

Fostering a culture of trust and engaging communities in research is a foundational tenet of the RADx-UP Coordination and Data Collection Center (CDCC).



Foster a culture of trust and engagement of communities in research by:

- Prioritizing community-engaged work
- Strengthening information and resource sharing between academic institutions & community organizations
- Building and nurturing relationships of mutual understanding and trust
- Recognizing that community engagement is an ongoing process



These principles serve as core beliefs which should help center the work, interactions, and decisions of each core.

promote

Promote the long-term sustainability & success of RADx-UP CDCC initiatives.

create

Create opportunities to listen, learn, and inform.

engage

Engage without fear of judgment or retaliation.

provide

Provide opportunities for reflective conversations.

embrace

Embrace individual differences.

empower

Empower diverse communities.



Values vs. Principles¹⁵

VALUES are qualities or standards of behavior.	PRINCIPLES are rules or beliefs governing one's behavior.
Values help to form principles.	Principles are based on one's values.
Qualities	Rules

RADx-UP CDCC Values

As reflected above, values are qualities **or** standards of behavior that help inform an individual's or organization's principles. The CDCC has identified six **values** which inform the principles that guide the work.

In the pages that follow, the framework explores each of the values a little deeper, focusing on:

- Why the value is important
- Best practices to support incorporation in your workstream

equity

transparency

trust

respect

**mutual
understanding**

accountability



EQUITY

ensures that all people can grow, contribute, and develop, regardless of their identity. When done right, it removes the barriers that marginalized groups often experience.

BEST PRACTICES

Integrate the perspectives and feedback of partners into decision-making processes

Help or encourage colleagues to be reflective and action-oriented about building a culture that is inclusive and supports the unique needs of partners

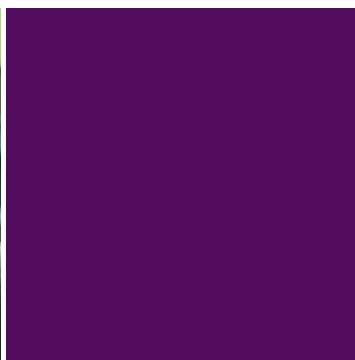
Share responsibility for outcomes

Treat all stakeholders with integrity and respect

Share decision-making and leadership as often as possible

Prioritize the expertise of stakeholders and partners most affected by inequities when identifying challenges and developing sustainable solutions

Allocate adequate resources





TRANSPARENCY

enables co-creation and innovation in environments where
missteps are seen as opportunities to learn.

BEST PRACTICES^{18,25}

Clarify the reason why

- Provide ample context and/or background to support the request, process, change, etc.
- Use SBAR to help communicate clearly in email:
 - **Situation** (a concise statement of the problem)
 - **Background** (pertinent and brief information related to the situation)
 - **Assessment** (analysis and considerations of options — what you found/think)
 - **Request/Recommendation** (action requested/recommended — what you want)

Be clear about what information is needed and what needs to be shared

- Share useful insights and learnings to support effective decisions.
- Provide information that helps evaluate progress and outcomes (*i.e., criteria, metrics, outcomes, etc.*)
- Recognize that information reduces uncertainty
- Draft and share meeting minutes.

Create a coherent, accessible system for information storage

- Choose user friendly tools.
- Clearly define what should be stored & how long.
- Provide structures to support the system.
- Designate deadlines and responsible parties.
- Evaluate periodically for relevance.

Communicate openly about motives, resources, power dynamics, and decision-making processes

Acknowledge challenges and limitations and work openly to address these and maintain partners' or stakeholders' trust



TRUST

enhances teamwork, collaboration, and decision-making. It improves organizational alignment, efficiency, engagement, production, innovation, and creativity. Trust increases loyalty and retention and decreases stress and burnout.

BEST PRACTICES^{19,20,22}

Listen more than you speak: Focus on others

Cultivate an environment where you:

- Encourage your team to speak honestly and often.
- Engage in [active listening](#).
- Don't just think about how something benefits you, but also how others may benefit or be harmed.

Solicit and act on feedback

- Solicit feedback in different ways.
- Follow through on feedback.

Empower your team by trusting them first

- Be supportive without hovering.
- Provide opportunities for professional development.
- Invite team members to sit in on meetings that may be well-suited to their skills and/or strengths.

Create an inclusive culture

- Value and accept the strengths and unique qualities of your team.
- Build a team that evokes diversity in thought and practices.

Take a collaborative approach

- Be willing to work with others.
- Create joint goals and approaches.

Recognize that non-verbal communication is just as important as verbal communication

- Pay attention when someone is speaking. This isn't the time to check email or work on items for your next meeting.
- Display positive body language.

Focus on relational, not transactional, interactions

- Approach each interaction as if it will be one of many.

Make transparency a habit

- Speak honestly.
- Disclose information (good & bad).
- Ask and encourage questions.
- Be realistic.

Be consistent

- Follow through on your commitments.
- Say what you mean and mean what you say.
- Don't expect of your team what you don't expect of yourself.

Show appreciation

- Send thank you messages.
- Acknowledge when someone has done something



RESPECT

is a way for all people to know they are valued for their achievements, abilities, and qualities. Being valued and treated respectfully helps promote a positive work culture in which employees are fulfilled, loyal, engaged, and motivated to perform at their very best.

BEST PRACTICES^{26,27}

Extend grace

Empathize and be considerate of others.

Lead by example

- Do what you say.
- Follow up and follow through.
- Be reliable.
- Praise more than you criticize.

Speak up

If you see disrespectful or unsafe behavior that undermines the work environment, speak up.

Say thank you

Make sure people know you appreciate them and their actions.

Be clear about expectations

Listen

Listen to what everyone has to say.

Affirm people's opinions

Apologize

If you make a mistake, take responsibility and have a corrective action plan.

Celebrate together

Participate in activities with your team.

Acknowledge

Recognize the strengths & accomplishments of others.

Look for common ground



MUTUAL UNDERSTANDING

leads to respect for core interests and major concerns, expands consensus and common interests, and tempers differences. These are the foundations for a long-term healthy, stable relationship.

BEST PRACTICES^{23,24}

Focus on individual and shared needs

Ask the following questions:

- What does my colleague/partner need?
- What does my colleague/partner want?
- What is most important to them?
- What is least important to them?

Find common ground

Strengthen your partnerships

Internal partnerships

- **Form.** Provide opportunities for team building. Include the team in goal setting & task planning.
- **Storm.** Develop a plan & stick with it. Address conflict & help the team work through it.
- **Norm.** Don't lose sight of the goal.
- **Perform.** Offer resources & support throughout all stages.

External partnerships

Incorporate stages of CE continuum.

- Outreach. Consult. Involve. Collaborate. Share.

Engage in reflective conversations

- Focus on what the other person has to say and try to understand what they are trying to communicate through words, tone, and non-verbal cues.

- Practice paraphrasing and mirroring when speaking with others.
 - **Paraphrasing:** Listen to the speaker and use your own words to reflect what they said. This helps ensure you properly understand the message.
 - **Mirroring:** A shorter, simpler technique that requires you to repeat key parts of the message verbatim. This helps maintain focus throughout the conversation; shows that you are paying attention.

Build positive energy and goodwill

- Frame things positively.
- Create actionable items.
- Try to keep emotions out of your statements. (*I think...*)
- Take a break when you need it.
- Say what you mean and mean what you say.
- Create an environment where people can ask for clarification when needed without fear of ridicule or negative reprisal.
- Take a minute to see it from the other person's perspective.



A culture of self-

ACCOUNTABILITY

builds an environment where people acknowledge the impact of their actions, which builds trust, improves performance, strengthens culture, fosters greater commitment, and Increases morale.

BEST PRACTICES¹⁷

Respond when something is needed

- Acknowledge a request even if you can't address it immediately.
- Give an idea of when to expect receipt or final response.

Do what you agreed to do

- Complete action items by the deadline. Notify the team if you aren't able to complete it on time and provide an anticipated date of completion.
- Follow-up with involved parties to ensure everyone has what is needed.

Accept your share of the responsibility

- Make the hierarchy of accountability clear.
- Acknowledge shared accountability.

Create conditions that enable accountability to thrive

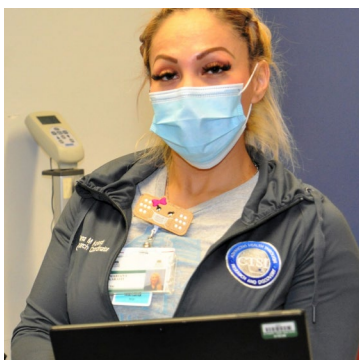
- Involve teams in decisions.
- Give people access to information.
- Create an environment where it is safe for people to disagree.

Explicitly delineate areas of responsibility

When responsibilities are unclear, it can lead to mistaken assumptions about who is responsible.

Build processes that are responsive to feedback from those we work with

Be willing to change and adapt throughout the process.





The words we use to describe our work should be clear and familiar to all CDCC staff. Because these terms are also commonly used in everyday language, it is important to define their specific meanings for our purposes. The following are the working definitions of terms used in this framework and throughout our work in the CDCC.

Active listening²: Listening to hear, understand, and retain information being shared with you. Requires you to pay attention, show you're listening, ask follow-up questions and provide feedback, and ask for clarification. *(Adapted from Colorado State University Global)*

Community: Group of people with shared identities, culture, language, values and/or interests. Members often come together to share experiences, thoughts, and ideas **or** to achieve a common mission. Communities may be virtual, geographically close, or in diaspora. *CDCC is a larger community made up of multiple smaller communities (cores, workstreams, roles, etc.).*

Community Advisory Board (CAB)³: Made up of community members with a shared identity, goal, geography, history, language, culture, and/or experience. Brought together to bring a community voice to an initiative, program, policy, or project. Ideally, they have the power and control to shape initiatives, programs, policies, or projects affecting their communities. *(Adapted from Urban Institute)*

Community-engaged research: Research partnership between institutions and communities that is mutually beneficial and incorporates shared decision-making and leadership between institutions and communities.

Community engagement: An ongoing process of building and nurturing relationships of mutual understanding and trust between communities and those seeking to connect with them, including liaising between community partners and larger systems.

Community partner⁴: Individuals, groups, and organizations from the public and private sectors that directly serve the local community; typically, these partners are not from within academic institutions. *(Adapted from Ole Miss)*

Dissemination⁵: Targeted distribution of information and materials through a variety of channels. Goal is to spread knowledge and share evidence-based interventions. *(AHRQ)*





Equality^{6,7}: Individuals or groups are given the same resources and opportunities, which can increase inequities in communities. By disregarding an individual's or community's actual needs or circumstances, it can hinder their ability to thrive. (George Washington University; United Way)

Equity^{6,7}: Recognizes that communities have different circumstances and needs, which must be taken into consideration when allocating resources and opportunities to help achieve equal outcomes. According to the 2019 Design in Tech Report, *"Equity is a solution for addressing imbalanced social systems. Justice can take equity one step further by fixing the systems in a way that leads to long-term, sustainable, equitable access for generations to come." Equity begins by meeting communities where they are.* (George Washington University; United Way)

Ethics⁸: The principles of conduct governing an individual or a group. (Merriam Webster)

Institutional racism⁹: Intentional or unintentional policies, practices, procedures, and/or outcomes within institutions that exclude or lead to poorer outcomes for people of color. (Race Forward)

Focus group^{8,10,11}: Research technique used to collect data through group interaction. Consists of a small group of purposefully selected people whose responses are studied and used to help determine the response that can be expected from a larger population. Used to identify and explore how people think, feel and behave.

Framework: Tool that illustrates shared language and understanding. Serves as a guide to support the implementation of ideas, beliefs, or rules in an organization. Typically intended for internal use.

Health equity¹²: This occurs when all people have the opportunity to attain the highest level of health. No one is kept from reaching the highest level of health because of their social position (e.g., class, immigration status) or social identities (e.g., race, gender, sexual orientation). Reflected in differences in length of life, quality of life, disease rates, disability, the severity of disease, access to treatment, and death. (Adapted from CDC)





Health ethics^{13,14}: Promotes the consideration of values in the prioritization and justification of actions by health professionals, researchers, and policymakers that may impact the health and well-being of patients, families, and communities. (WHO)

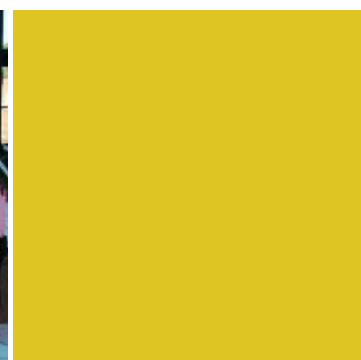
Core principles of healthcare ethics:
(Vermont Ethics Network)

- *Autonomy*: Honor the patient's right to make their own decision
- *Beneficence*: Help the patient advance his/her good
- *Nonmaleficence*: Do no harm
- *Justice*: Duty to be fair in how care is provided and in how resources are allocated

Partners: Individuals, communities, and/or organizations that enter into a mutual agreement to achieve a shared goal(s). These may include but are not limited to internal and external contacts: local, state, national, public, private, academic, faith- and community-based organizations, and internal staff. Partners may **or** may not be directly affected by the activities in which they engage. Unlike stakeholders, they take an active role in the work whether **or** not they are directly affected by the activities' outcomes. (Ex. American Institute for Research (AIR) is a CDCC partner.)

Partnerships: Relationships that typically involve close collaboration between parties with specified objectives, rights, and responsibilities. These collaborations build on the strengths and capabilities of each party. Should add value that exceeds what partners could achieve alone to allow for larger, more sustainable impacts.

Principles¹⁵: Rules or beliefs that govern our actions.





Social justice¹⁶: Fair and equitable division of resources, opportunities, and privileges in society. It involves efforts to end systemic violence, racism, and systems that devalue the dignity and humanity of any person (*John Lewis Institute for Social Justice*). This concept is aspirational and guides policies and practices that aim to bring conditions toward a vision of equity.

Stakeholders: Individuals, communities, or organizations that are invested in, affect, or are affected by a system, intervention, or program. Specifically, RADx-UP stakeholders include:

- The individuals or groups most affected by COVID-19 inequities, such as members of a local community.
- Individuals or organizations whose jobs or lives both might affect or be affected by processes, interventions, and/or programs.
- Institutions and their representatives who oversee and make decisions about the research and intervention processes & guidelines (*i.e., NIH or the CDCC*).

Structural racism⁹: As defined by *Race Forward*, racial inequities across institutions, policies, social structures, history, and culture. Deeply embedded in the economic, political, and legal systems. (*Race Forward*)

Values¹⁵: Qualities or standards that govern the behavior of a person.





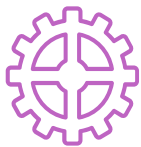
Fundamentals of Community Engagement *Combo*

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Learning Objectives



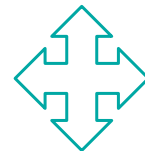
To understand the concept of **culture** and **community**

To discuss and reflect on a **framework for community engagement**



To understand and apply the **principles of community engagement and partnerships**

To reflect on strategies needed to **build trust and authentic partnerships**



To examine **ethical considerations** in community engagement

To define the key **elements of sustainability**

To assess methods of **equitable dissemination**

To discuss **processes for ending partnerships and projects**

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Culture

- Structures **identity**
- Fosters notion of **community**
- Creates **meaning**
- Defines **power**
- Shapes how individuals and groups **relate** to each other



Citation: Principles of Community Engagement - 2nd Edition

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What is Community?

Group of people brought together by something in common.

- Culture
- Shared experience
- Geographic location
- Background
- Circumstance
- Work

One person can belong to many different communities.



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Building Trust



- Exhibit **humility** and **vulnerability**.
- Make it **transformational**, not transactional
- Create a **safe** and **non-judgmental** space
- “**Design-in**” your participants
- **Recognize** that it takes **time**

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Community Engagement Continuum



Citation: *Principles of Community Engagement - 2nd Edition*

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Sustainability: What is it?

- The **benefits** and progress **achieved during the life of the program not only** survive and **continue** long **after it has ended,** but also **continue** to **progress** on an **upward course.**



Citation: Sustainability Framework | WaterAid (2011)

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Ethical Considerations

<u>Principle</u>	<u>Meaning</u>	<u>Practices</u>
Respect for Persons	Recognizes each person's individual rights	<ul style="list-style-type: none"> Obtain informed consent Protect privacy Ensure Confidentiality or Anonymity
Beneficence	Provides benefits while protecting from harms and limiting risk	<ul style="list-style-type: none"> Be transparent about risks and benefits Develop processes for safety & accountability
Justice	Recognizes community rights and representation	<ul style="list-style-type: none"> Equitable inclusion of communities, groups, and stakeholders Shared ownership and dissemination of data, findings, and benefits

Citation: 1979 Belmont Report

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Elements of Sustainability

- Capacity-building
- Community buy-in
- Infrastructure development



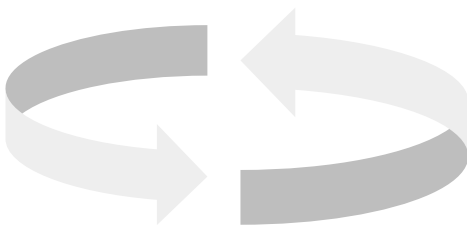
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Participatory Dissemination

Participatory = focused on reaching affected community

Examples:

Popular media; social media; community newsletters; data walks



- **Results** are **clear** and **accessible** to community members
- **Community understands** how results directly impact them
- **Data belongs to** the **community**, not to academia

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Best Practices for Dissemination

- Begin **dissemination** planning early
- Conduct **community-partnered conferences**
- Use **traditional media** and **social media outlets**
- Identify **community specific resources**
- Mobilize **community members as advocates**



Citation: Blumenthal DS, DiClemente RJ (editors). Community-based health research: issues and methods. New York: Springer; 2004

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Project and Partnership Closure

- **Establish** upfront and ongoing conversations around how and when the project will end
- Consider **partnership relationship** - legal or informal - and act accordingly
- **Ownership** and maintenance of research products developed

Citation: Blumenthal DS, DiClemente RJ (editors). Community-based health research: issues and methods. New York: Springer; 2004

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Community Engagement Checklist



Community Engagement Checklist

Community engagement is complex. To be effective, you need to recognize and respect the diversity and assets of the communities with which you engage. It takes a long time to build strong relationships and even longer to repair relationships that have been damaged. Before engaging with a community, develop an action plan using this checklist as a guide.

BEFORE

- ☐ Review the Principles of Partnership.
- ☐ Learn about the community and reflect on any biases, assumptions, or privileges you have.
- ☐ Identify the community partners, members, or stakeholders you wish to engage.
- ☐ Reach out to potential partners early in the project.
- ☐ Choose a place, date, time, and method of engagement.
- ☐ Develop materials that are culturally and linguistically appropriate.
- ☐ Create an evaluation plan with the community partners based on measures of success defined by the partners.

DURING

- ☐ Get feedback on your method and approach from community leaders.
- ☐ Identify potential barriers to success.
- ☐ Develop a plan to address barriers that ensures equal opportunities for participation.
- ☐ Listen with intent to ensure all voices and perspectives, especially those most impacted by injustice, are given value.
- ☐ Be honest and forthcoming about what you can (and cannot) do.
- ☐ Evaluate the effectiveness of your partnership and make adjustments, as needed.

AFTER

- ☐ Gather feedback from the community partners and use their perspectives to inform your evaluation.
- ☐ Share results and next steps with the community partners and other stakeholders.
- ☐ Reflect on what can be improved for future community engagement efforts.
- ☐ Stay connected in order to maintain a long-term relationship.



Domains & Principles of Partnerships

The Domains & Principles of Partnerships have been developed by CCPH based on over 20 years of fostering successful community-academic partnerships. The three domains provide the foundations upon which the twelve principles are built. Apply these principles in your work to create and sustain authentic, equitable partnerships.

RELATIONSHIP BUILDING

1. The relationship between members of the Partnership is characterized by mutual trust, respect, genuineness, and commitment.
2. The Partnership builds upon identified strengths and assets, but also works to address needs and increase capacity of all partners.
3. Partners make clear and open communication an ongoing priority by striving to understand each other's needs and self-interests, and developing a common language.
4. The Partnership values multiple kinds of knowledge and life experiences.

STRUCTURES & PROCESSES

5. The Partnership forms to serve a specific purpose and may take on new goals over time.
6. The Partnership agrees upon mission, values, goals, measurable outcomes and processes for accountability.
7. Partnerships can dissolve, and when they do, need to plan a process for closure.
8. Partnerships consider the nature of the environment in which they exist as a principle aspect of their design, evaluation, and sustainability.

DISTRIBUTION OF POWER

9. The Partnership balances power among partners and enables resources among partners to be shared.
10. Principles and processes are established with the input and agreement of all partners, especially for decision-making and conflict resolution.
11. There is feedback among all stakeholders in the Partnership, with the goal of continuously improving the Partnership and its outcomes.
12. Partners share the benefits of the Partnership's accomplishments.



Building a Communication Skills Toolbox

Community-Campus Partnerships for Health

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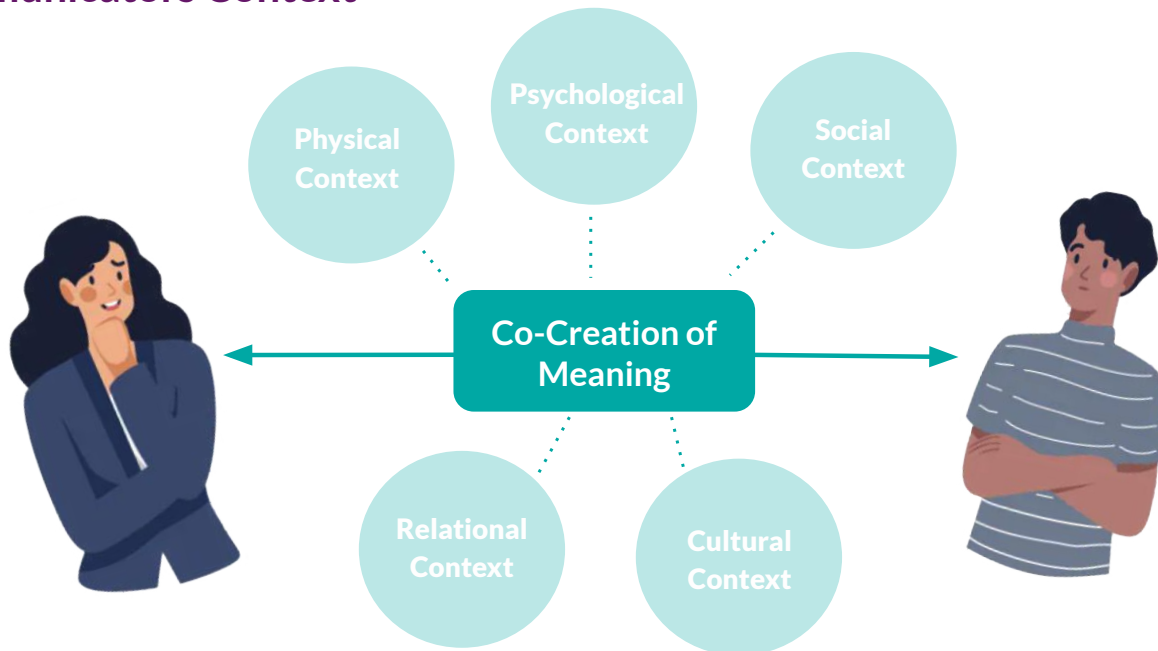


Learning Objectives

1. To **understand** the elements of communication and how communication is shaped by context
2. To **learn and practice** tools for effective listening, navigating difficult conversations, and conflict resolution
3. To **reflect** on opportunities to deepen and expand the impact of our work through skillful communication

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Communicators Context



Source: Boston University Center for Innovation in Social Work & Health. (2019). A Training Curriculum for Using Community Health Workers to Improve Linkage and Retention in HIV Care. Retrieved from: <http://ciswh.org/chw-curriculum>

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Elements of Listening

Elements of Listening:

- Attending
- Understanding
- Remembering
- Evaluating
- Responding



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Causes & Dynamics of Conflict



Conflict is inevitable and usually begins in language.

- **Communication dynamics**
 - Ineffective listening
 - Lack of clarity or alignment with expectations or guidelines
- **Interpersonal dynamics**
 - Trust, curiosity, empathy
 - Assumptions
 - Negative emotions left unaddressed

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Conflict Resolution Approaches

- Move **toward**--not away from--the conflict.
- **Plan** but don't script.
- Take a **breath**.
- Listen, listen, **listen**.
- **Observe** and release assumptions.
- Make space for **silence**.
- Approach the conversation from a place of **empathy**.
- Reframe **opportunities** for collaborative problem-solving.
- Understand each other's **humanity**.

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ELEMENTS OF LISTENING

Attending
Understanding
Remembering
Evaluating
Responding

CONFLICT RESOLUTION APPROACHES

Plan but don't script
Take a breath
Listen, listen, listen
Move toward--not away from--the conflict
Observe and release assumptions
Make space for silence
Approach from a place of empathy
Reframe, collaborate, problem-solve
Understand each other's humanity



Motivational Interviewing Skills & Techniques

Community-Campus Partnerships for Health

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Learning Objectives

- **To understand** the background, spirit, and approach of Motivational Interviewing
- **To learn** and **practice** the fundamentals of OARS skills
- **To reflect** on opportunities and challenges for practical application of these resources

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Motivational Interviewing Definition

A collaborative, person-centered approach for drawing out and strengthening a person's motivation to change his or her behavior.

Source: Miller, W.R. and Rollnick, S.(2009). Ten things that Motivational Interviewing is not. Behavioural and Cognitive Psychotherapy, 37, 129-140.

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Introduction to Motivational Interviewing

- **Person-centered**, directive method for enhancing **intrinsic motivation** to change by exploring and resolving **ambivalence**
- **Helps** people get “unstuck” from ambivalent feelings
- **Explores** personal reasons for **making a change**
- **Brings people closer** to who they want to be

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Spirit of Motivational Interviewing

Acceptance

Compassion

Evocation

Collaboration

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Principles of Motivational Interviewing

- R** Resist the Righting Reflex
- U** Understand
- L** Listen With Empathy
- E** Empower

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OARS

- O** Open-Ended Questions
- A** Affirmations
- R** Reflective Listening
- S** Summarizing

MOTIVATIONAL INTERVIEWING PRINCIPLES

- R** Resist the Righting Reflex
- U** Understand
- L** Listen With Empathy
- E** Empower

OARS

OPEN-ENDED QUESTIONS

Require more than a yes/no response

Encourage elaboration, discussion and deeper thought

Create forward momentum

AFFIRMATIONS

Recognize and reinforce someone's strengths and abilities

Must be congruent and genuine to be effective

REFLECTIVE LISTENING

Expresses empathy

Enables others to feel that you understand their perspective

Helps resolve ambivalence

Focuses on positive aspects of change

SUMMARIZING

Uses reflective statements at transition points in the conversation

Recaps what has been shared

Confirms that you understand the other person's goals and preferences

Demonstrates that you have been listening carefully

Office Hours *Flowchart*

COMMUNITY-CAMPUS PARTNERSHIPS FOR HEALTH

Before Office Hours

Introduction

- Names, affiliations, and titles/roles
- Who is CCPH?
 - Founded in 1997 by a physician, Dr. Sarena Seifer, who identified a need for great collaboration between communities and academic institutions to promote health
 - Our mission is to promote health equity and social justice through equitable partnerships between communities and institutions
 - Co-lead of CDCC Community Engagement Core
 - Support Community Engagement needs of RADx-UP Projects

Goal of Office Hours

- To foster a collaborative environment for CCPH staff/consultants and RADx-UP projects to discuss community engagement-related challenges and to identify appropriate resources and recommendations to address them
- While some aspects of the consultations do lead to sharing resources that identify and initiate partnership contacts, the goal of the consultations are to discuss and strategize project processes that result in authentic and equitable community engaged research

Project Expectations from Office Hours

- A 1-hour virtual consultation with CCPH staff/consultants
- A follow-up document outlining potential resources and recommendations within 1 week of the consultation
- Opportunity for an additional consult as needed
- Ask Project: What would you like to get out of the consultation today?

During Office Hours

WITHIN 10 MIN

Identify the Problem

- Area of Engagement
 - Recruitment/Retention
 - Partnerships
 - Staffing/Training
 - Messaging
 - Dissemination
- Time Restrictions
- Resources



WITHIN 20 MIN

Reflect on Past Solutions

- Past Solutions
- Oversight Restrictions
- Organizational Changes
 - Environmental
 - Interpersonal
 - Funding



WITHIN 50 MIN

Brainstorm with Consultants

- Resources
 - FAQ page
 - Readings/Videos/Texts
 - Toolkits and guidance documents
 - Subject Matter Experts
 - Peer Consultation
- Align with Principles of Partnerships Tier
- Interventions
 - Focus group, Townhall, Training, Mediation, Changes to workflow



WITHIN 60 MIN

Make Action Plan

- Participant Expectations
 - Start discussions with affected parties
- Consultant Expectations
 - Be transparent and timely with consultation feedback



After Office Hours

WITHIN 1 WEEK

Follow-Up Consultation

- Consultation Overview
- FAQ Page of OH Issues
- Recommendations
 - RADx-UP ERC
 - Readings/Videos/Texts
 - Toolkits and guidance documents
 - Subject Matter Experts
 - Peer Consultations (Working Groups & Connection to other RADx-UP Projects)



WITHIN 90 DAYS

Follow-Up Implementation

- Implementation Update
 - If so, what was the outcome or impact of changes?
- Additional Consultations
 - If so, let us know the type of guidance or resources you are interested in attaining.















Social Needs Screening

Name: _____

Phone number: _____

Preferred Language: _____

Best time to call: _____

		Yes / No
	In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?	<input type="checkbox"/> Y <input type="checkbox"/> N
	In the last 12 months, has your utility company shut off your service (electric, gas, water, or telephone) for not paying your bills?	<input type="checkbox"/> Y <input type="checkbox"/> N
	Are you worried that in the next 2 months, you may not have stable housing ?	<input type="checkbox"/> Y <input type="checkbox"/> N
	Do you feel you have been the victim of fraud or identity theft ?	<input type="checkbox"/> Y <input type="checkbox"/> N
	In the last 12 months, have you needed to see a doctor, but could not because of cost or lack of insurance ?	<input type="checkbox"/> Y <input type="checkbox"/> N
	In the last 12 months, have you ever had to go without health care, food, or work because you didn't have a way to get there ?	<input type="checkbox"/> Y <input type="checkbox"/> N
	Do you ever need help reading hospital materials, bills, or applications?	<input type="checkbox"/> Y <input type="checkbox"/> N
	Are you afraid you might be hurt in your apartment building or house??	<input type="checkbox"/> Y <input type="checkbox"/> N
	If you have children, do you want to learn how to communicate with your child's teacher about their education or problems at school?	<input type="checkbox"/> Y <input type="checkbox"/> N
	Do you or a loved one need information or services from an immigration legal services provider ?	<input type="checkbox"/> Y <input type="checkbox"/> N
	Are any of your needs urgent? For example: I don't have food tonight, I don't have a place to sleep tonight	<input type="checkbox"/> Y <input type="checkbox"/> N
	If you checked YES to any boxes above, would you like to receive assistance with any of these needs?	<input type="checkbox"/> Y <input type="checkbox"/> N

PARA USO EXCLUSIVO DEL PERSONAL/FOR STAFF USE ONLY:

Staff/Promotora Name: _____ Date: _____













Evaluación de Necesidades Sociales

Nombre: _____

Teléfono: _____

Idioma preferido: _____

Mejor tiempo para llamarle: _____

		Sí / No
	En los últimos 12 meses, ¿comió menos de lo que necesitaba porque no le alcanzaba el dinero para la comida?	<input type="checkbox"/> S <input type="checkbox"/> N
	En los últimos 12 meses, ¿le cortó una compañía un servicio público (Electricidad, gas, agua o teléfono) por no pagar sus cuentas?	<input type="checkbox"/> S <input type="checkbox"/> N
	¿Le preocupa quedarse sin vivienda estable en los próximos dos meses?	<input type="checkbox"/> S <input type="checkbox"/> N
	¿Siente que ha sido víctima de fraude o robo de identidad?	<input type="checkbox"/> S <input type="checkbox"/> N
	En los últimos 12 meses, ¿necesitó ver a un médico pero no pudo por el costo o falta de seguro?	<input type="checkbox"/> S <input type="checkbox"/> N
	En los últimos 12 meses, ¿alguna vez dejó de recibir cuidados médico, comida, o trabajo porque no tenía cómo llegar al sitio?	<input type="checkbox"/> S <input type="checkbox"/> N
	¿Alguna vez necesita ayuda para leer los materiales del hospital, facturas, o aplicaciones?	<input type="checkbox"/> S <input type="checkbox"/> N
	¿Tiene miedo de lesionarse en su edificio de apartamentos o casa?	<input type="checkbox"/> S <input type="checkbox"/> N
	Si tiene hijos, ¿desea aprender cómo comunicarse con el maestro de su hijo sobre su educación o problemas en la escuela?	<input type="checkbox"/> S <input type="checkbox"/> N
	¿Necesita información o servicios de un proveedor de servicios legales de inmigración?	<input type="checkbox"/> S <input type="checkbox"/> N
	Si marcó que sí a cualquiera de las casillas anteriores, ¿le gustaría recibir ayuda con cualquiera de estas necesidades?	<input type="checkbox"/> S <input type="checkbox"/> N
	¿Es urgente alguna de estas necesidades? Por ejemplo: No tengo qué comer esta noche, no tengo dónde dormir esta noche.	<input type="checkbox"/> S <input type="checkbox"/> N

PARA USO EXCLUSIVO DEL PERSONAL/FOR STAFF USE ONLY:

Staff/Promotora Name: _____ Date: _____

CATCH-UP PRACTICES SELF-ASSESSMENT

Goals, Objectives, and Strategies

GOAL	OBJECTIVE	TARGET STRATEGY	ASSESSMENT	PRIORITY
Quality of Care	Implement COVID Testing Guidelines	Protocol for COVID Testing		
		Testing Quality Control		
		Report results to Health Department		
		PPE Protocol (Fit Test)		
		Patient and practice education		
	Implement Adult Immunization Guidelines	COVID		
		Influenza		
		Pneumococcal		
		Zoster		
		Tdap		
	Implement COVID Management Guidelines	Quarantine Recommendations		
		Outpatient Treatment Protocol		
		Follow-up and Monitoring Progress		
		Post-COVID Syndrome		
Financial Security	Better Primary Care	Infection (COVID) Registries		
		Cost of New Procedures		
		ED/Hospital transition protocol		
	Document, Code & Bill	EHR/PMS changes		
	Data-driven Quality	QI team, dashboards, measures		
		Improve information technology		
Joy in Practice	Teamwork	Huddles, roles, protocols		
		Staff turnover & burnout		
	Patient Centered Care	Patient survey or PFAC		
Healthy Community	Infection Control	Community COVID spread reduction		
		School/workplace infection control		
	Vaccination	Community vaccination campaign		



ASSESSMENT	CODE
Not answered	0
No protocol and/or not used	1
Partial protocol, rarely used	2
Partial protocol, used some of the time	3
Protocol, used most of the time	4
Protocol, used all the time	5

PRIORITY
Assign a priority to each Target Strategy from 1 to 5 with 1 being most urgent. You may have multiple items with the same priority.

James W. Mold
OPHC
Oklahoma Primary Healthcare
Improvement Cooperative

 **The UNIVERSITY of OKLAHOMA**
Health Sciences Center



SECTION TWO

APPENDIX C

Supporting Diagnostic Testing in Underserved Populations

C1: Examining COVID-19 testing and vaccination behaviors by heritage and linguistic preferences among Hispanic, Latino, or Spanish RADx-UP participants

C2: I'm Vaccinated - When Do I Need to Get Tested for COVID-19?



RESEARCH SUMMARY

COVID-19 TESTING & VACCINATION IN THE HISPANIC POPULATION

How behaviors differed by Hispanic heritage and language preference

During the COVID-19 pandemic, the National Institutes of Health made a significant investment to study ways to reduce health disparities. Through the RADx-UP initiative, researchers and community leaders across the country partnered around COVID-19 testing to learn alongside underserved communities. Now, the RADx-UP consortium is looking at this nationwide dataset to identify effective strategies for reducing disparities to improve health for all.

Overview

COVID-19 severely affected Hispanic, Latino, or Spanish (hereafter, “Hispanic”) populations in the U.S., with a high rate of COVID-19 infections and deaths compared to other groups. Yet, helping Hispanic communities access testing and vaccination services was a challenge across the nation. In this study, researchers wanted to understand if Hispanic heritage and language affected whether Hispanic community members participated in COVID-19 testing and got vaccinated. They found that there is no single “Hispanic” population and that testing and vaccination varied by language and heritage across the diverse population. They gained their insights from a large dataset contributed by 18 research projects across the U.S. that were part of the NIH RADx® Underserved Populations research initiative.



KEY FINDINGS AND INSIGHTS

Hispanic heritage was associated with differences in COVID-19 testing and vaccination

- Those reporting Puerto Rican or Dominican heritage were more likely to test for COVID-19 than those reporting Mexican heritage.
- South American heritage was associated with both higher testing and vaccination rates compared with Mexican heritage.
- Those who spoke Spanish at home in addition to English were more likely to receive a COVID-19 vaccine if they reported Mexican or other Central American heritage.



Main study focus

Researchers looked at the combined dataset to see if participants had ever been tested for COVID-19 and/or received a COVID-19 vaccine. They associated these responses with participants' reported Hispanic heritage (Mexican, Cuban, Dominican, Puerto Rican, other Central American, South American, or multiple) and language preference (speaking English only at home or speaking Spanish or another language other than English at home).

They also considered participants' age, gender identity, highest level of education, insurance coverage, income, number of other medical conditions they have, and U.S. region where they live (South, West, Midwest, Northeast).

Language usage was associated with differences in vaccination and testing

For individuals who did not report their heritage, speaking Spanish or another language at home in addition to English was associated with increased COVID-19 testing, compared with speaking only English at home. Those who reported Mexican, Cuban, or Central American heritage who spoke Spanish or another language other than English at home had higher rates of COVID-19 vaccination compared with those who spoke only English in the home.



There is no single "Hispanic" population

Designing national public health services that are culturally appropriate for the wide range of Hispanic communities is challenging, largely because different Hispanic populations have settled in different parts of the U.S., have retained language and cultural norms in different ways, and participate in testing and vaccination.



Improving health care access and use is challenging in this diverse population

The challenge in making health care more accessible to Hispanic individuals, and in increasing their use of health care, is significant. The factors making this effort more difficult include the Hispanic population's large size, diversity, geographic distribution, and differences in culture, language, and immigration experiences.





STUDY POPULATION

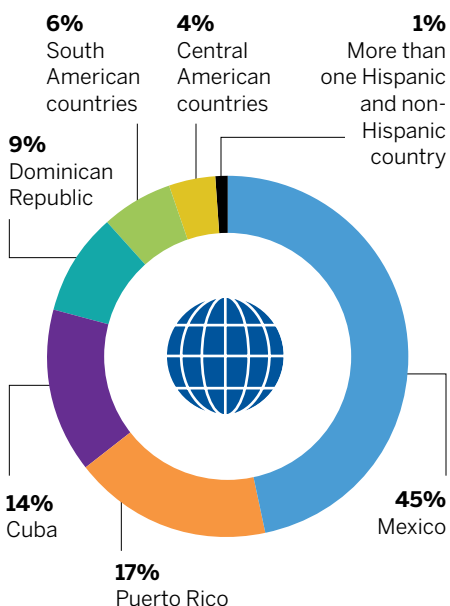
The study included more than

3,000

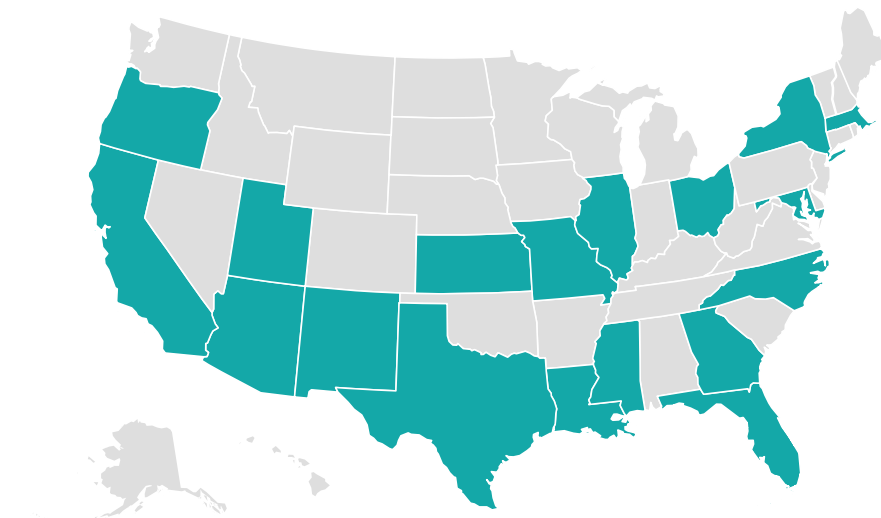
Hispanic individuals who were 18 years old or older.

All participants lived in the U.S. and participated in a RADx-UP project between **February 2021-June 2022**.

Participants represented **26 Hispanic heritage groups**, including:

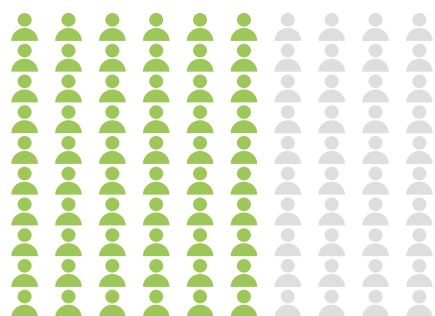


Participants came from 18 combined RADx-UP projects across **18 states**



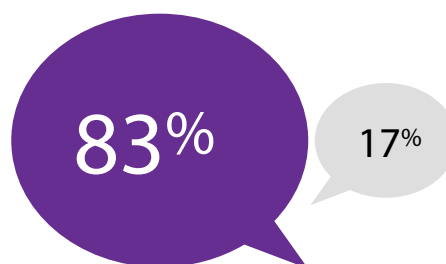
The average age of the participants was about

44 YEARS OLD



60% of the participants were women.

83% of the participants spoke Spanish or another language other than English at home



TO LEARN MORE, READ THE FULL ARTICLE

D'Agostino EM, Garcia JR, Bakken SR, Wruck L, Nilles EK, Stefano TA, Martin HR, Hungler A, Lee RE, Perreira KM, Baum MK, Brown D. Examining COVID-19 testing and vaccination behaviors by heritage and linguistic preferences among Hispanic, Latino, or Spanish RADx-UP participants. *Prev Med Rep.* 2023 Aug 2;35:102359. doi: 10.1016/j.pmedr.2023.102359. PMID: 37584063; PMCID: PMC10424123.

Endnote

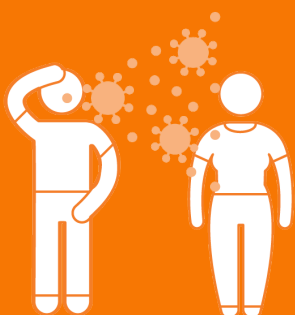
Research reported in this RADx® Underserved Populations publication was supported by Azure sponsorship credits granted by Microsoft's AI for Good Research Lab and by the National Institutes of Health under Award Number U24MD016258. The funding source was not involved in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Photos courtesy of the RADx-UP Image Bank

I'M VACCINATED

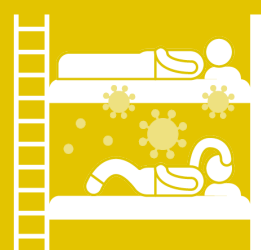
WHEN DO I NEED TO TEST FOR COVID-19?

Although the risk that fully vaccinated people could become severely ill and die of COVID-19 is low, any fully vaccinated person who encounters the following circumstances should get tested.

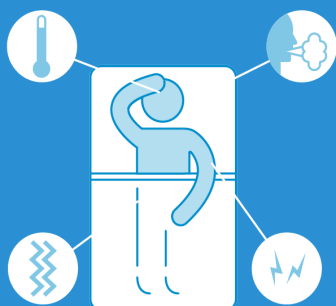


When exposed to a person with COVID-19 and symptoms develop

WHEN TO GET TESTED



When living or working in a congregate setting and exposed to a person with COVID-19, even if asymptomatic



When COVID-19 symptoms develop regardless of known exposure



When returning to the US from international travel



As required by employer guidelines and policies



SECTION TWO

APPENDIX D

Data Collection and Storage

D1: RADx-UP Data Tiers



NIH RADx-UP Data Categories for Ingestion by the CDCC and Deposit to the NIH RADx Data Hub

April 2024

Data Category	Definition	Held by CDCC ^{\$}	Send to NIH RADx DataHub ^{\$}
NIH RADx-UP Tier 1 CDEs	RADx-UP CDEs inclusive of RADx executive CDEs. These CDEs are required from all projects in RADx-UP.**	Yes	Only de-identified
NIH RADx-UP Tier 2 CDEs	RADx-UP defined CDEs. These CDEs are recommended, not required.	If the project captures the CDEs and shares them with the CDCC	Only de-identified
Mapped electronic health record (EHR) data to NIH RADx-UP Tier 1 CDEs that originated with participant consent	EHR data mapable to the NIH RADx-UP Tier 1 CDEs. These CDEs are required for projects extracting data from the EHR and who consented participants to extract their EHR data.	If the project maps to the CDEs and shares them with the CDCC	Only de-identified
Mapped electronic health record (EHR) data to NIH RADx-UP Tier 1 CDEs that originated WITHOUT participant consent and not classified as human subject research.	EHR data mapped to the NIH RADx-UP Tier 1 CDEs. These CDEs are required for projects extracting data from the EHR and who DID NOT consent participants to extract their EHR data. These EHR data are extracted by the projects in a manner (e.g. de-identified) which does not require individual participant consent and is classified as non-human subject research.	If the project maps to the CDEs and shares them with the CDCC	Only de-identified
RADx-UP Harmonizable DDEs	Harmonizable Defined Data Elements. These are DDEs selected by projects for their project-specific use from the NLM CDE Repository, PhenX or DR2.	If the project shares them with the CDCC	Only de-identified
RADx-UP Non-harmonizable DDEs	Project-Defined Data Elements. These DDEs are created de novo by the projects and cannot be harmonized with other projects.	If the project shares them with the CDCC	Only de-identified
Protocols, CRFs, consents	Protocols, case report forms, consent forms, design documents.	Yes	Yes. Protocols and codebooks (CRF)
Community focused materials	Brochures, story boards, educational materials, recruitment materials, etc.	Yes. These will be included in the publicly available RADx-UP Engagement Resource Center [✓]	No
Qualitative data	Focus group materials, interviews, etc.	Pending evaluation by Northwestern University (June 2022)	Only de-identified, if feasible
Media publications	Public press, communication plans, etc.	No	No
Scientific publications	Manuscripts, abstracts, posters.	Yes. These will be included in the publicly available RADx-UP Engagement Resource Center [✓]	No
Linked datasets	Area level external datasets like the American Community Survey linked to RADx-UP project data.	Yes	Yes
CDCC generated project metadata	Project details, weekly surveys reports, etc.	Yes	No



SECTION TWO

APPENDIX E

Best Practices for Conducting Community- Engaged Research

E1: RADx-UP Community Engagement Brief



RADx-UP BRIEF

COMMUNITY ENGAGEMENT

Investing in community engagement to achieve health equity

At the beginning of the COVID-19 pandemic, health inequities became more apparent when some underserved populations became more ill, tested less and were vaccinated less. Health researchers at **The National Institutes of Health (NIH)** hypothesized that to address health

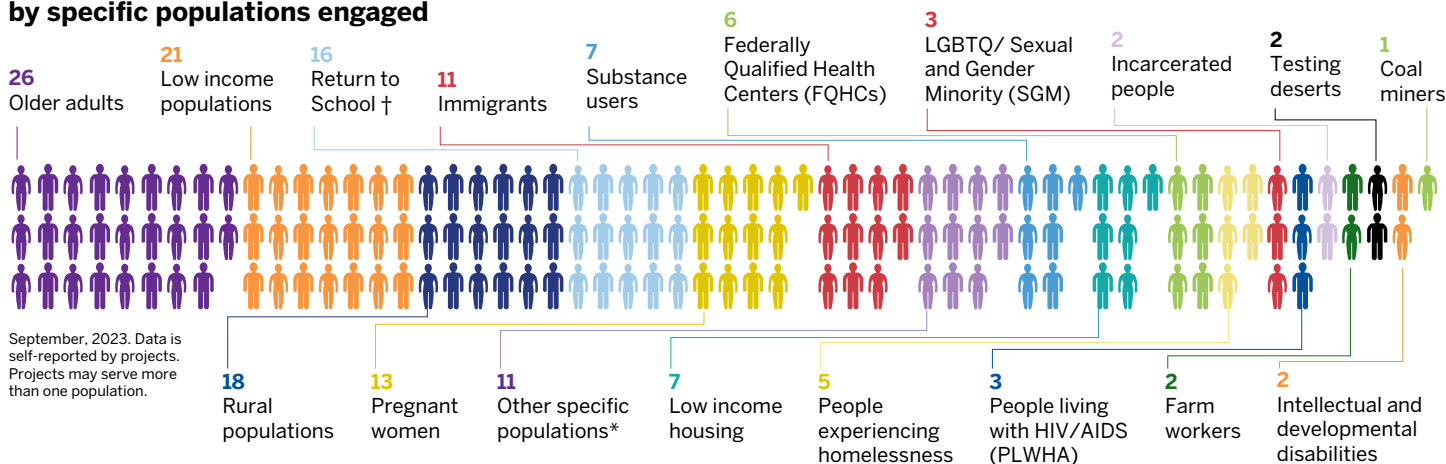
inequities during the pandemic and beyond, the work must begin in partnership with communities. Beginning in April 2020, the NIH invested \$500M in 144 research projects across the country to test how to best keep communities most affected by COVID-19 safe. Successful RADx-UP community engagement approaches may be applied to other public health crises and community health practices to address health inequities in the U.S.

Community Engagement

An ongoing process of building and nurturing relationships of mutual understanding and trust between communities and those seeking to connect with them, including liaising between community partners and larger systems.

RADx-UP Projects

by specific populations engaged





COMMUNITY ENGAGEMENT OUTCOMES

Community Engagement Scholarship Findings

In an analysis of 231 publications, 44 articles were coded under ‘impacts of collaborative partnerships and community engagement.’ Twenty-five of those articles describe how the following community engagement and collaborative partnership activities led to positive impacts in COVID-19 testing.



Accessing diverse partnerships to implement, adapt, and promote testing and vaccination



Strengthening recruitment and data collection



Improving community capacity for research and workforce development



Informing health messaging, outreach, and dissemination strategies



Utilizing community advisory boards (CABs) and community-based participatory research (CBPR) to guide research implementation



Building sustainable, trusted relationships within communities



Evaluating the impacts and strengths of community engagement

Policy Recommendations for Health Care Delivery Reform

In a review of 16 papers exploring the roles of **Community Health Workers (CHW)** in COVID-19 testing success, the RADx-UP team developed the policy brief “*Prioritizing Community*

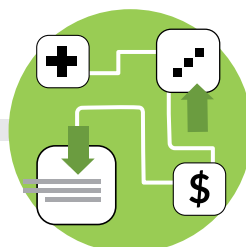
Health Workers in Health Care Reform is Key to Enhancing Health Equity.” The brief outlines how “lay health advisers” are essential links between community members and

health care services. The brief made recommendations to health policy investments in CHWs and payment models that support them.

SHORT-TERM



Revise federal quality measures



Expand payment models



Align CHW roles to reimbursement

LONG-TERM



Develop multi-year funding grants



Support CHWs in leadership



A FOUNDATION FOR ENGAGEMENT



The RADx-UP Coordination and Data Collection Center (CDCC)

created an infrastructure that supported community engagement work throughout the project lifecycle.

- The non-profit, **Community-Campus Partnerships for Health (CCPH)** helped guide community engagement work by participating in working groups and capacity-building webinars. Specifically, CCPH reviewed RADx-UP educational materials

for lay language and developed the “*Racial Equity in the US Healthcare System Guidebook*.”

- Engagement Impact Teams (EITs)** were established to regularly meet with projects to understand challenges and create opportunities for successful project implementation.
- Community Collaboration Grants** The CDCC Community Collaboration Grant program (C2G) awarded up to \$55,000 to 70 community organizations for a total investment of \$3,771,012 to help advance capacity, training, support, and community experience with COVID-19 testing initiatives for underserved populations. Community-serving organizations, faith-based organizations, and tribal nations and organizations could apply the grants to direct costs of testing programming.

Principles of Community Engagement

Early in its work, **RADx-UP** looked to evidence-based resources such as **The Principles of Community Engaged Research** (second edition) developed by federal agencies, and feedback from community partners, to better understand how community engaged research could better deliver COVID-19 testing to underserved populations.

From Principles of Community Engagement report, June 2011:

Community engagement can take many forms, and partners can include organized groups, agencies, institutions, or individuals. Collaborators may be engaged in health promotion, research, or policy making.

Community Health Framework

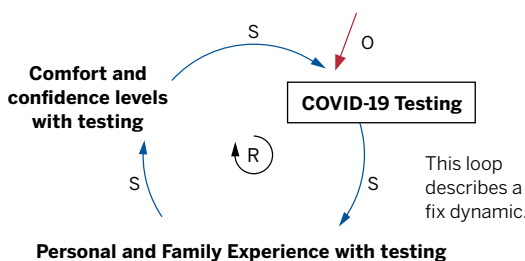
RADx-UP built a policy framework to describe its approach to mitigating health disparities in the U.S. It developed the “**Community-Based COVID-19 Testing: Barriers, Solutions and Next Steps**.” This policy paper outlines three learning areas:

- Common barriers that prevent fair access to COVID-19 testing
- Policy solutions to increase access to COVID-19 testing and other services
- Ideas to improve responses during COVID-19 or other public health emergencies

Documenting Community Feedback

The **Understanding Social Determinants of Testing and Vaccination Workgroup** documented feedback loops and dynamics within RADx-UP believed to be most important in shaping COVID testing in U.S. communities. The group focused on the critical role of social determinants of health that impact COVID-19 testing.

Confusion in changing recommendations and guidance



KEY

→ = a change in the starting variable triggers a change in the connected variable

S → = **same relationship** (as one goes up or down, so does the other)

O → = **opposite relationship** (i.e. as one goes up/down, the other does opposite)

R = **Reinforcing**; a feedback loop where changes are reinforced over time.



BUILDING TRUST

Community and academic partners repeatedly cited trust and long-term relationships as key to successful community engagement in research.



We have partnerships with the neighborhoods where we may have to dispatch and set up another pop-up testing site. We have those partnerships already built, and it won't take much to initiate them again if we need to."

—Community Partner, RADx-UP Testing and Evaluation qualitative report, a diverse sampling of 24 community and academic partners.



Our community advisory board (CAB) has been instrumental to helping us build trust in a highly research-reticent community, so much so that the members of the community felt comfortable sharing their honest and candid opinions in a research setting."

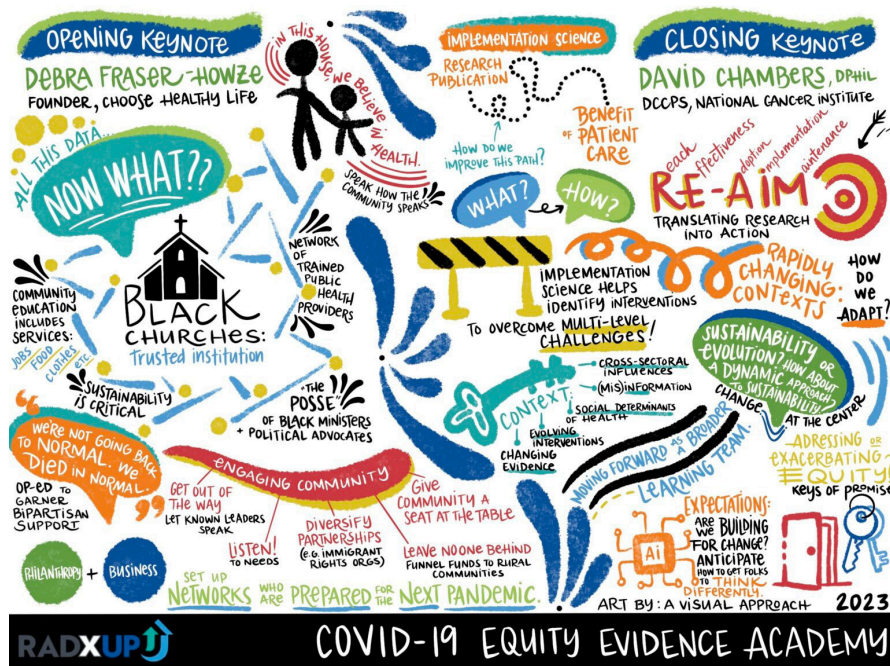
—Jalissa Shealey, RADx-UP project REPRESENT ATL: Increasing Representation of Black Communities in SARS-CoV-2 Serosurveys by Understanding Barriers and Motivations

Sharing Evidence

The annual **Evidence Academy (EA)** conference was designed to help RADx-UP projects strengthen their community-centered research aims and advance equity in COVID-19 testing and other public health initiatives.

The agenda highlighted speakers and sessions focused on building community-academic connections, enhancing knowledge of promising approaches, and lessons learned in engaging communities in COVID-19 testing and vaccines.

EA shared results through presentation videos, data profiles summarizing evidence, community/academic collaborations, and strategies for translating lessons learned.



Key takeaways from the COVID-19 Equity Evidence Academy keynote address.



BUILDING RELATIONSHIPS

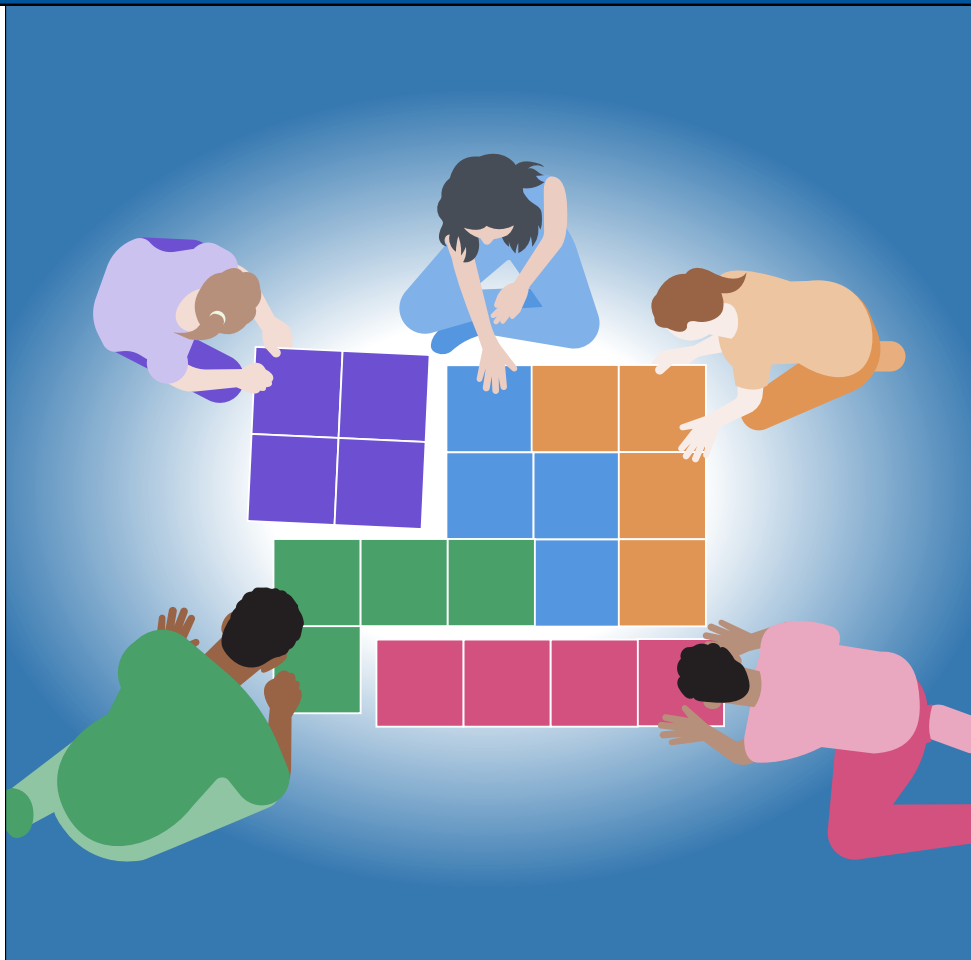
Study Design and Representation

The voices, lived experiences, and images of communities served were represented in all facets of RADx-UP work. Community partner inclusion during planning meetings, data collection and research results discussions were imperative to success.

The rapid launch of the study design in the early days of the pandemic, and specifically the adoption of standardized **NIH Common Data Elements (CDEs)**, proved an initial challenge to implement uniformly in every setting. In phase II, researchers were able to discuss community preferences to adapt CDEs to suit specific populations.



Whenever possible, community and academic partners collaborated on writing and presenting their research. RADx-UP developed more than a dozen **research briefs**, and its materials have been translated into **17 languages**. The **RADx-UP Image Bank** captured 1,222 project images from around the country to represent the work.



Communities of Practice

The CDCC coordinated and compensated members to serve on **Community Advisory Boards and Working Groups** in response to community-identified needs.

These groups brought together community members, researchers and content experts to provide guidance on the special considerations of underserved populations.

There have been eight RADx-UP Working Groups, including:

- Engaging Black/African Americans
- Community Health Workers
- Sexual and Gender Minorities
- Understanding Social Determinants of COVID-19
- Child Health
- Building Community Capacity and Impact
- SEBI: Social, Ethical and Behavioral Implications
- Engaging Hispanic/Latino/Latinx Populations



RESOURCE LIBRARY HIGHLIGHTS

The RADx-UP **Resource Library** contains 275 assets for researchers and community organizers to download and use, including publications, presentations, fact sheets, reports and videos. See examples below:

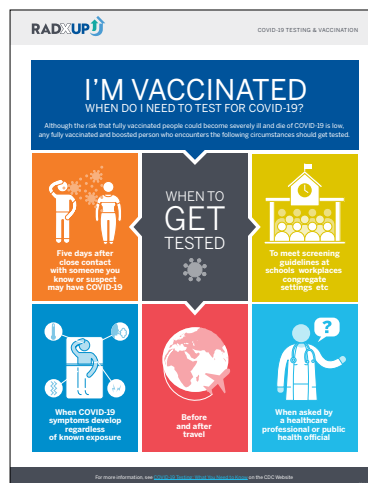
FOTONOVELA

Tailored COVID-19 Communication



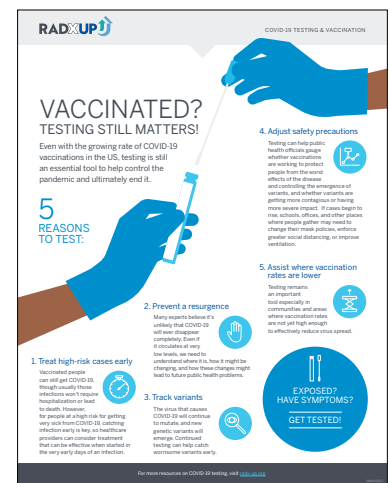
FLYER

I'm Vaccinated – When do I Need to Get Tested for COVID-19?



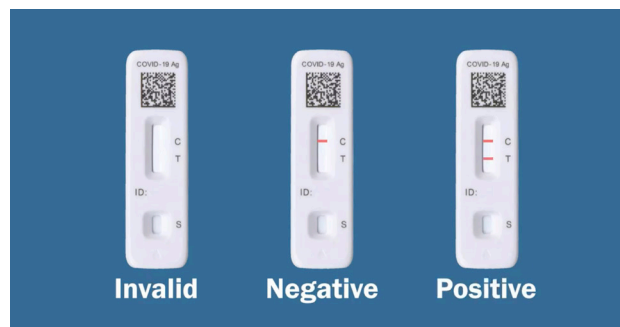
FLYER

Testing Still Matters



VIDEO

How to Read Results of Your Flow Flex COVID-19 Rapid At-home Test



RADx-UP partners with FDA and ACON Labs on new 'How to Test' videos focused on human-centered design, promoting trust.

This flyer, created by the CDCC, is one of the most accessed RADx-UP resources and was designed for broad public dissemination. This flyer speaks to the role of COVID-19 testing as a continued public health measure to keep our communities healthy. Testing helps treat high-risk cases early. Also, it helps us know when to adjust safety precautions, like indoor masking. Testing assists in areas with low vaccination rates. It helps prevent a resurgence and monitor vaccines.

In conclusion, RADx-UP is a community-engaged initiative that strives to listen and learn from community partners to improve COVID-19 testing rates and mitigate health inequities among underserved communities. It led to further COVID-19 testing research through the **RADx-UP Return to Schools Diagnostic Testing Initiative**, **Say Yes COVID Test**, and **You & Me Healthy Registry** (formerly You and Me, COVID Free). By working with and within communities, RADx-UP projects from around the country were able to lessen barriers to education, testing and vaccination to promote health equity. The resources and outcomes of RADx-UP may serve as lessons for future health crises and improve overall community health.



SECTION THREE

APPENDIX F

Sharing Information and Communicating Clearly

F1: Cuáldate Texas! in English and Spanish

F2: CDCC Data Visualization Style Guide

F3: Community Testing and SARS-CoV-2 Rates for Latinxs in Baltimore

F4: COVID-19 Vaccine Hesitancy in Delaware's Underserved Communities (in Spanish)

F5: Redefining Scholarship

F6: Image Bank Scope of Work

F7: What to do if You Test Positive for COVID-19

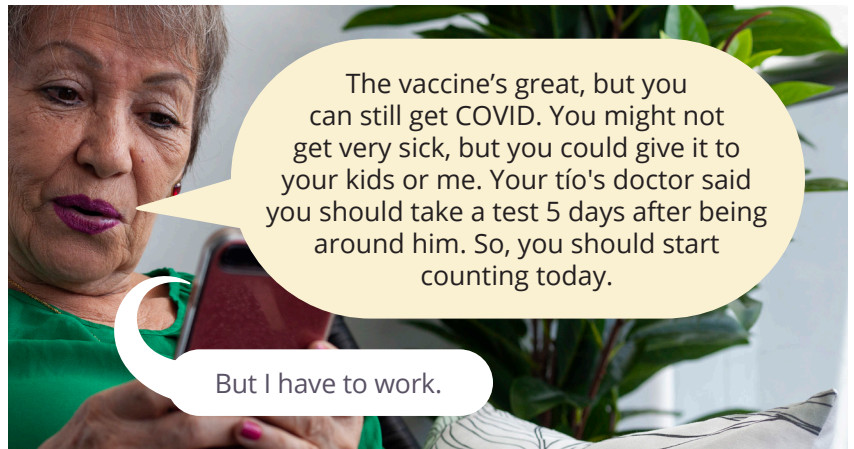
F8: Why Does COVID-19 Testing Still Matter?

F9: Addressing COVID-19 Testing Inequities Among Underserved Populations in Massachusetts

F10: Tailored Recruitment Messaging: Increasing representation of Black communities in COVID-19 home testing and surveillance data

¡CUÍDATE TEXAS!

UTHealth
Houston
School of
Public Health

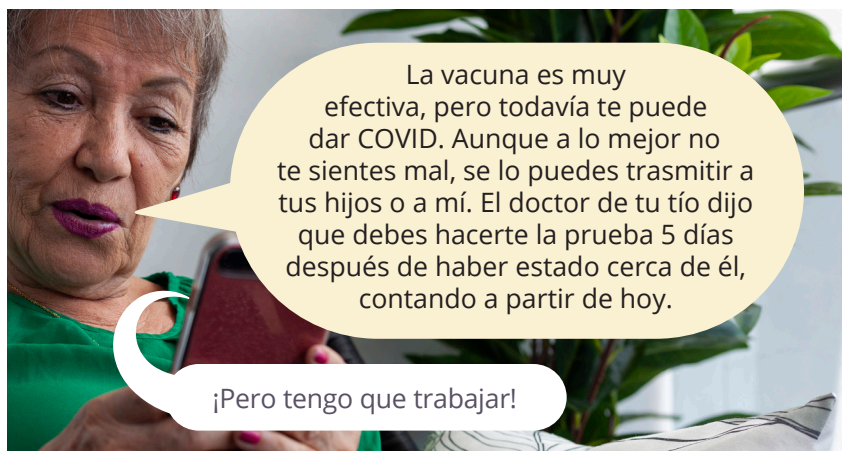


Test to protect! Visit Cuídate Texas on Facebook for more information.

[TakeCareTexas.org](https://www.TakeCareTexas.org)

¡CUÍDATE TEXAS!

UTHealth
Houston
School of
Public Health

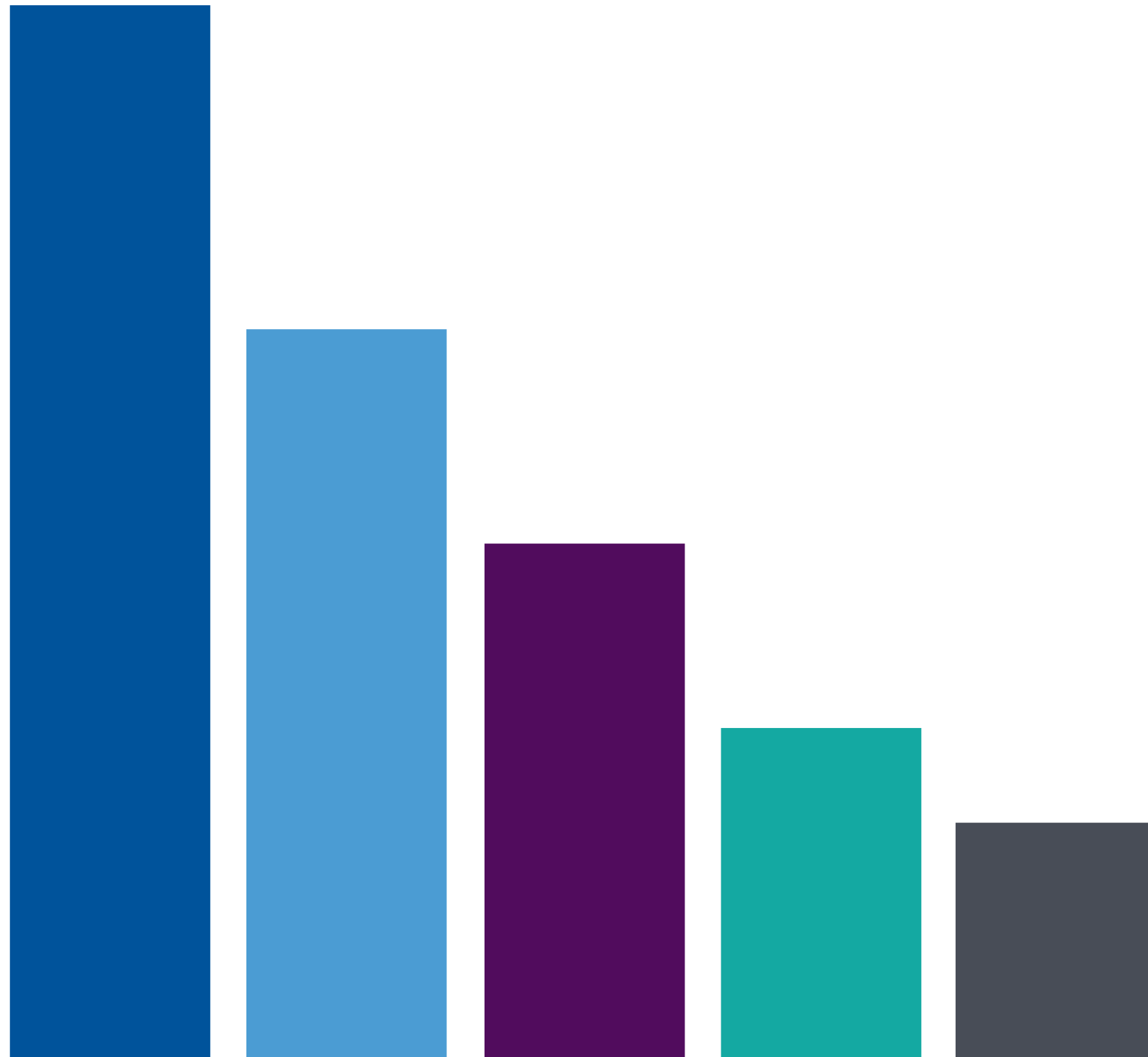


¡Hazte la prueba para protegerte! Visite Cuídate Texas en Facebook para más información. TakeCareTexas.org

Data Visualization Style Guide

VERSION 1.0

10/14/2021



1. Picking the Right Visualization for Your Data

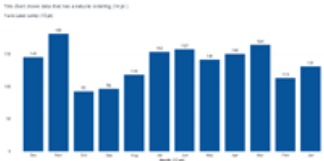
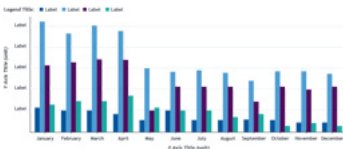
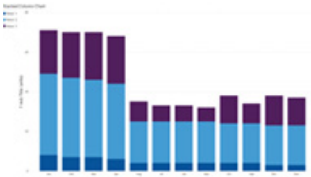
Before developing a dashboard, it is vital to start by determining the purpose, the audience, and how it will be used. Based on these key factors, you then conceptualize an overall design layout, including selecting a set of appropriate visualizations for your data. Different data visualizations are better at conveying different types of information and data relationships. When initially thinking about how to display your data most effectively, ask yourself a few key questions:

- What insights do I want my audience to come away with?
- What is the key data summary, including data subsets, trends, and relationships that will help the audience gain insight?
- What metrics and measures do I want to highlight?
- Will the dashboard be primarily reviewed in a static or interactive medium?

The following series of tables are devoted to a common data summary/relationship you may see in your raw data. Each data summary/relationship has a a brief description and a table that contains suggested visualizations that effectively convey that relationship along with best practices and guidance on when they are appropriate.

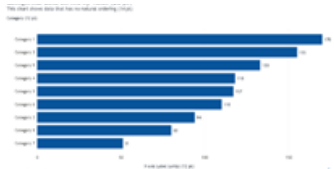
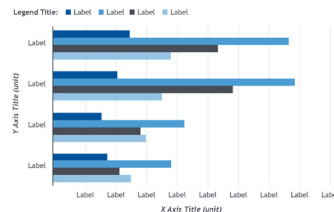
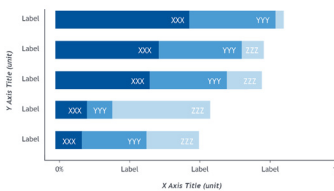
Ordinal Comparison

Comparison of categories or categorical subdivisions of measures with a *natural ordering*. Examples of “natural orderings” in data include data that vary across age groups, date ranges, income levels, or survey responses to Likert scale questions of the type “Strongly Disagree”, “No Opinion”, “Agree”, and “Strongly Agree”.

Appropriate Graphs	Best Practices
<p>Column Chart (Vertical Bar Chart)</p> 	<p>Column charts are ideal for comparing a single measure across categories that have a natural ordering in the data. Examples of categorical subdivisions which would suggest a column chart are: comparing one measure across different age groups or dates.</p>
<p>Clustered Column Chart</p> 	<p>Clustered Column charts are used when there are hierarchical data levels. An example would be examining the number of positive COVID-19 test results by region and race/ethnicity. <i>Tip: For data with long category names, consider using a bar chart for more labeling space</i></p>
<p>Stacked Column Chart</p> 	<p>Stacked Column Charts can be used as an alternative to clustered column charts when the total is the key measure, but the part-to-the-whole information of subcategories is also of interest. Three or fewer subcategories per column is recommended (4 or 5 categories can sometimes be used, but it is discouraged). Sorting order on the categories should be consistent across the chart, i.e., each bar should have the same color ordering. <i>Tip: For data with long category names, consider using a bar chart for more labeling space.</i></p>

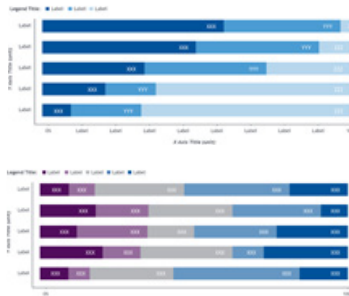
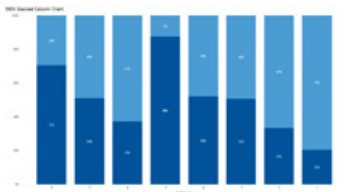
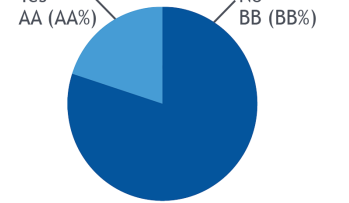
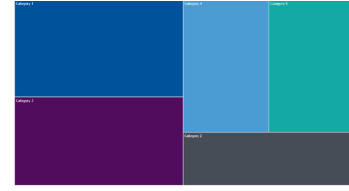
Nominal Data

Comparison of a measure across categorical subdivisions that do not have a natural category order. Examples of data without a natural category order include data that vary across specific people, projects or locations.

Appropriate Graphs	Best Practices
<div>Bar Chart (Horizontal Bar Chart)</div> 	<p>Bar charts sorted by measure value are an ideal way to visualize nominal data to quickly understand relative ranking. Readers process information from top to bottom, so picking a proper sort (ascending or descending by measure) will define the purpose of the chart (highlighting low or high values of the measure). <i>Tip: bar charts can be as thin as one line of text and can be a good alternative to a column chart when there are a large number of categories.</i></p>
<div>Clustered Bar Chart</div> 	<p>Clustered Bar charts are used when there are hierarchical data levels. Similar to designing a bar chart, order the categories and subcategories intentionally. An example would be examining the number of positive COVID-19 test results by region and race.</p>
<div>Stacked Bar Chart</div> 	<p>Stacked Bar Charts can be used when there are natural subdivisions of a measure by category. The different categories should have consistent ordering.</p>

Part-to-Whole

Comparison of multiple different measures as ratios of a whole. Part-to-whole comparisons are focused on proportions, not absolute values.

Appropriate Graphs	Best Practices
<div>100% Stacked Bar Chart</div> 	<p>100% Stacked bar charts are used to show the relative proportions (0%-100%) of subcategories within a category. Two or 3 subcategories are recommended (4 or 5 subcategories can be used for Likert scales). Sorting order within subcategories and between bar categories should be intentional to emphasize specific data elements. As with non part-to-whole relationships, bar charts are preferred over column charts when categories have no inherent order to focus the viewer on the value ranking.</p>
<div>100% Stacked Column Chart</div> 	<p>100% stacked column charts should be used instead of bar charts when categories have some natural ordering. All other guidance from the 100% stacked bar charts applies.</p>
<div>Pie Chart</div> 	<p>Data viz experts typically advise against using pie charts with few exceptions because areas and angles are difficult to compare quickly and accurately. However, used sparingly and intentionally, pie charts can offer variety and can be effective visuals when showing one or two categories. Three categories can be okay in some cases, e.g.,, “Yes”, “No”, and “Unknown” as answers to a survey question. More than three categories become hard to interpret in a pie chart and a bar chart should be used instead.</p>
<div>Treemap</div> 	<p>For complex data with many categories, a standalone treemap can capture proportionality. Treemaps can also be used to effectively communicate hierarchical data structures at a global scale.</p>

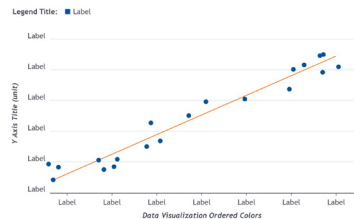
Correlation

Comparison of two measures to determine how they are correlated.

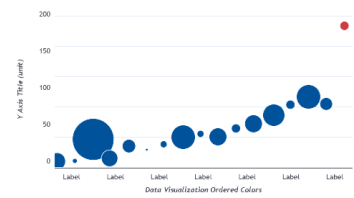
Appropriate Graphs

Best Practices

Scatter plot
(with trend line)



Bubble chart



To visualize how two continuous measures are correlated a scatter plot is always best. Axis intervals should be equally spaced unless there is a good reason to use a log or exponential axis.

Bubble charts can be used in lieu of scatter plots if there is a third continuous measure of interest, but should be used with discretion. For example in a sensitivity/specificity scatter plot, the bubble size can be used to show the number of tests.

Tables and Numbers

Presentation of raw data.

Appropriate Graphs

Best Practices

Table

Project #	State	Sum of Value 1	Sum of Value 2	Sum of Value 3
Project 1	Arizona	50	1102	4
Project 2	Tennessee	33	4536	4
Project 3	New Mexico	12	4423	3
Project 4	Montana	25	9738	6
Project 5	Florida	76	1212	2
Project 6	Illinois	89	5541	5
Project 7	Indiana	91	1001	2
Project 8	Texas	12	1300	7

Card

Total Projects

1,073

Tables are used to present data in a “raw” format. Use tables to show mixed categorical and numerical data that a reader can use to explore the data. Tables allow more variables to be shown together than chart.

Cards should be used as a highlight visual, and not the focus of a dashboard. They are a great way to draw the viewer into asking questions about the top (or bottom) ranked projects or areas of interest.

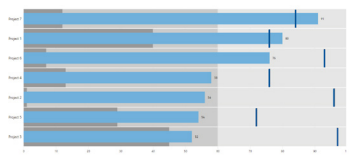
Benchmarking/Progress

Assessment of progress in one or more measures towards some benchmark or goal.

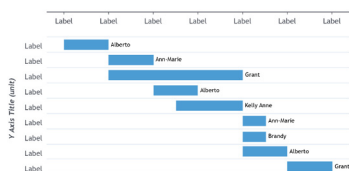
Appropriate Graphs

Best Practices

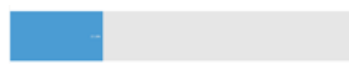
Bullet Chart




Gantt Chart



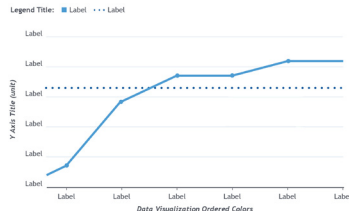
Progress Bar



Donut Chart



Line Chart with Goal Line



Bullet charts are flexible visualizations that allow designers to specify targets, benchmarks and categories such as “Satisfactory”, “Good”, “Behind Target” or current, prior, and target. They can be used to compare the same measure for multiple projects, or separate measures within a given project.

Gantt charts are ideal for visualizing progress on projects or processes on a calendar scale that can be divided into multiple stages or phases.

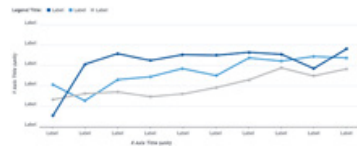
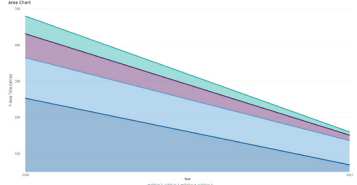


Progress bars are best used to highlight a single key metric. They should be avoided when looking at multiple metrics, or metrics across multiple projects.

Donut charts can be used to show “percentage complete.” The percentage value presents at the center of the donut. If more than one number is needed, use a pie chart, stacked bar chart, or clustered bar chart depending on the number of categories. Small multiples can also be effective.

To track progress over time, a line chart with a goal line may be best.

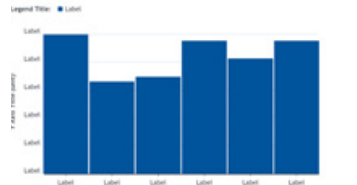
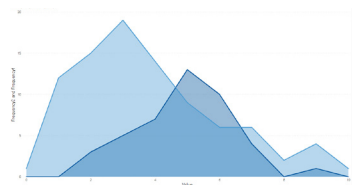
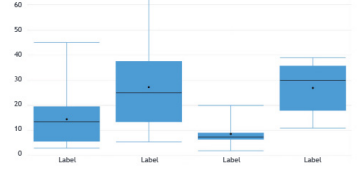
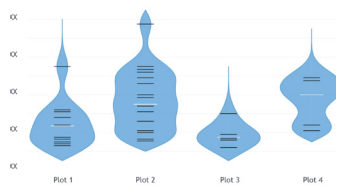
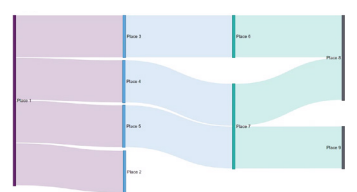
Time Series Data

One or more measures that vary over time.

Appropriate Graphs	Best Practices
<div>Line Chart</div> 	Line charts are an excellent choice for time series data to discern trends and patterns. Axis intervals should be equally spaced and should start at 0. If multiple lines appear in a line chart, consider using small multiples to avoid overlapping data that create a “spaghetti chart”.
<div>Area Chart</div> 	Area charts can be used to show growth or distributional change in one measure over time. The largest contributing category to the chart should be lowest.
<div>Bump Chart</div> 	Bump charts are a useful way to track rankings over time. <i>Tip: You can show underlying values using tool tips.</i>
<div>Column Chart</div>	See <i>Ordinal Comparison</i> section for details.
<div>Waterfall Chart</div> 	Waterfall charts are useful for examining how a single quantity (e.g., total budget) changes over time as a result of additions or subtractions to the measure.

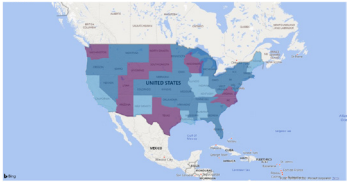
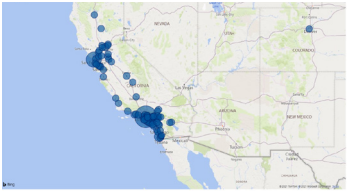
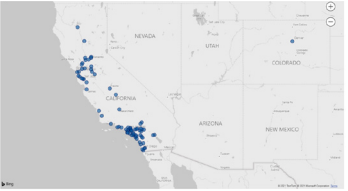

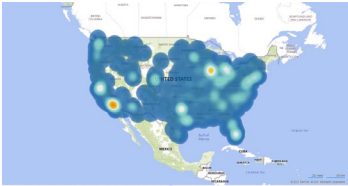
Distribution

Comparison of how one or two measures vary with respect to another.

Appropriate Graphs	Best Practices
<div>Bar Histogram</div> 	Bar histograms are best used when visualizing the distribution of one measure against bins of a related measure. In general, bins should be equally sized (e.g., bins of age or income categories). Bar histograms should be used when there are a small (<12) number of bins.
<div>Frequency Polygon</div> 	Frequency polygons can be used to compare the way measures are distributed with respect to some binned variable by overlaying histograms on one graph. They are also a way to visualize cumulative distribution functions of a binned variable.
<div>Box Plot</div> 	Box plots show summary statistics on the distribution of a single measure over time or between nominal groups. Use box plots to communicate means, medians, interquartile ranges and spreads of distributions.
<div>Violin Plot</div> 	Violin plots visualize change in distribution over time, or compare distributions between different groups or projects. If you wish to display the way a distribution of one measure to a continuous variable change from month to month, for example, a violin plot will reduce confusion that may arise from having several stacked polygon histograms.
<div>Sankey Diagram</div> 	Sankey diagrams are useful for visualizing how resources are distributed over time or within a system. They can be used to visualize data such as budget allocation or user behavior on websites.

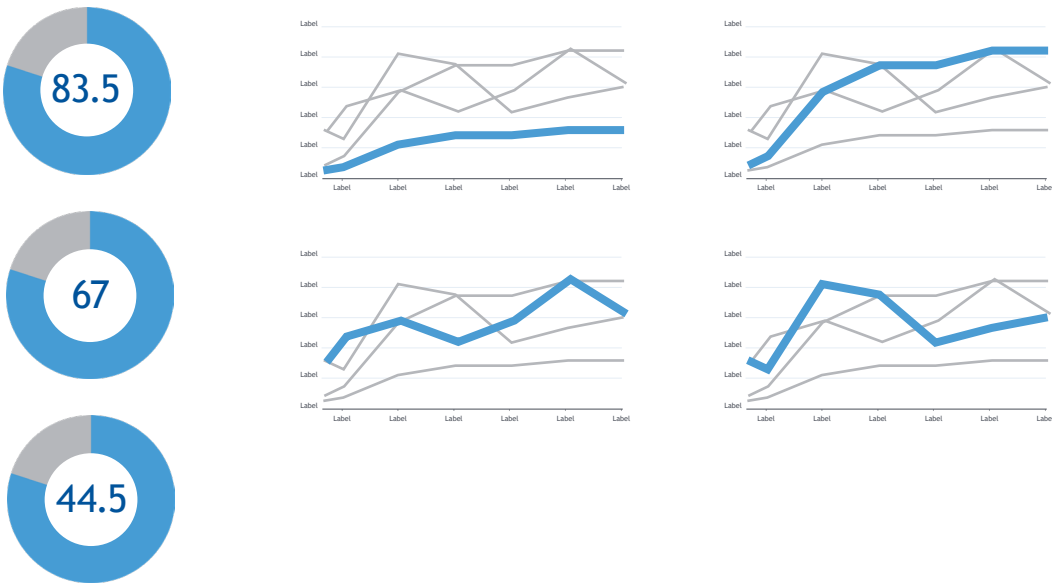
Geographic Data

Comparison of a single or multiple measures over a geographic region.

Appropriate Graphs	Best Practices
<div>Choropleth Map</div> 	Choropleth maps can be used to compare the values of both continuous and categorical measures across counties, districts, and states. Colors should be selected according to the type of data represented. Gradients should be used for quantitative measures.
<div>Point Map</div> 	Point maps are used when the data of interest is the location of specific sites. An appropriate use of a point map would be to show the locations of all project-related testing sites within a state.
<div>Bubble Map</div> 	Bubble maps are useful for data in which there are specific geographic points of interest (e.g., testing sites), as well as a measure associated with the points (e.g., number of tests administered).
<div>Hex and Tile Maps</div> 	For state and territory level comparison, hex and tile maps provide a way of visualizing data that avoids “the Alaska problem,” which gives an outsize portion of map visualizations to large states like Alaska. Note these are tricky to develop in Power BI.
<div>Heat Map</div> 	Heat maps are only used to track continuous variables at an extremely granular level. Appropriate uses of heat maps include tracking temperature or pollution levels by GPS co-ordinate.

Small Multiples

One way to present complex charts for better comprehension is to display your data in small multiples...



Additional Resources

To learn more about best practices for a particular visualization, explore visualizations not listed in the style guide, or gain some guidance on how to implement certain visualizations that are not native to Power BI, we have a list of online resources below.

<https://chartio.com/learn/charts/>: An extensive set of articles on choosing the right visualization for your data, as well as some in depth articles on the best practices for specific visualizations.

<https://datavizproject.com/>: Short articles describing a wide range of charts. Visualizations can be searched for based on the data relationship you wish to display or the structure of your input data.

<https://www.syntelli.com/how-to-make-bump-charts-in-power-bi-tutorial>: This blog post details how to construct a bump chart in Power BI. A sample bump chart is also available in the Power BI template.

2. General Data Visualization Guidance

In addition to the chart-specific best practices, there are important overarching data visualization principles to guide your design. Before, during, and after creating a visualization, review the following list of best practices to make sure your visualization is concise and easy to interpret.

Practice 1: Develop for your audience. Think critically about two key questions: (1) What does your audience care about knowing? (2) What is their general level of familiarity with the topic, the data, and data visualizations? The first question should guide your chart selection, as well as your choice of highlight visuals and highlighted data points. The second question should also play a role in chart selection - for audiences with little data visualization experience, bar charts, histograms, line charts and maps are easy to interpret and will not intimidate the user. If your audience is familiar with more complex visualizations, you can explore a wider range of charts. The second question should also inform what you include in your visualization - for example, audiences with little statistical experience may not be able to interpret p-values or correlation coefficients, so these elements may not need to be included in your chart.

Practice 2: Design dashboards holistically. After you have identified the key messages you wish to convey or trends you wish to track, and the appropriate charts to visualize your data, take some time to consider how your dashboard should look and feel. Dashboards should be designed at an appropriate scale - if you want your dashboard to eventually end up in a PowerPoint presentation, it should be 1333 pixels wide by 750 pixels tall. If the dashboard will be accessed on a browser it should be 1000 pixels wide by 750 pixels tall to ensure a wide range of monitors and browsers will be able to view it in its entirety. Deciding on a fixed size for your dashboard will help you to manage space more efficiently as you populate it with visualizations.

After fixing a size for your dashboard, the next step is choosing the orientation of your charts. Most audiences will read the dashboard from left to right and then top to bottom. A good rule for constructing compelling dashboards is to design them in an “F” or “Z” shape. The most important visualization or highlight should lie at the top left of the page, and the story you want to tell with your data should move in an “F” or “Z” pattern throughout the rest of the page. By following this principle you can ensure that the dashboard has a clear visual hierarchy that doesn’t overwhelm the audience.

Practice 3: Format your axes in a consistent fashion. When you have multiple charts that are meant to be compared against one another, make sure the chart axes start and end at the same points. Start axes for continuous measures at zero for all visuals except line charts, scatter plots, and bubble charts. Line charts often include positive and negative values—for these visuals chose a meaningful range that includes the zero line. For scatter plots and bubble charts, these visuals choose axes start and end points judiciously to emphasize the correlation that is displayed. Axis intervals should always be equally spaced. Charts that have different scales should not be placed next to each other, as placing two charts that track metrics whose values differ by degrees of magnitude too close can lead to confusion.

Use horizontal text for axis labels to maximize readability. If a category label is too long to fit horizontally within the x-axis, consider either using a shortened (abbreviated) version of the label (for example using Sep. instead of September). Horizontal labels are preferable to diagonal or vertical labels. If direct data labels are used in the visual, remove redundant axis labels and gridlines to minimize chart ink (a best practice that improves readability).

Practice 4: Use color intentionally. Color can be a great way to highlight a specific outcome, such as a high or low value, a particular category of interest, or any outliers in the visual. Color can also emphasize that one category is qualitatively different from the rest, such as using a gray bar for “Unknown/Other”. Use the indicator colors given in the color section to indicate that a number or value is above or below a threshold or goal. In scatter plots, bubble charts, point maps, and bubble maps color can be used to distinguish different categories of points and bubbles.

If your data is ordinal, as in a clustered column chart where the subcategories are age groups, or in a map where the outcome of interest is a continuous variable like Social Vulnerability Index, consider using multiple tints of a single color to distinguish between ordered elements of the visual. If your data is nominal, as in a clustered column chart where the subcategories are race/ethnicity or in a map where the outcome of interest is whether a project operates in a state, use the full color palette as indicated in the color section.

Generally, if there is not a clear reason to add different colors to the visualization, use a single color.

3. 508 Compliance

508 compliance is required for:

The public website is required by Duke to adhere to 508 compliance (at level WCAG 2.0 Level AA). For the public website, the primary 508 compliance requirement elements are (1) color comparison such that the foreground is appropriately contrasted to background, and (2) providing alt text for static images embedded in the page. The alt text should describe the content in detail if it is not replicated elsewhere on the page in non-image format (such as a table). For example, if there is a bar chart, providing breakdown in the alt text of each category and its respective value.

508 compliance is recommended for:

Content on password protected websites, such as myRADx-UPhome, is recommended to adhere to 508 where possible/reasonable, but it is not required. When dashboards and data visualizations are embedded within myRADx-UPhome, especially within the firewall, 508 is preferred where possible, but not required.

Latinx communities have been disproportionately impacted by COVID-19. Higher COVID-19 infection rates among Latinx with limited English proficiency (LEP) are driven by poverty, exclusion from benefits, political disempowerment, and fear of job loss. Latinx immigrants in particular face significant barriers to testing: lack of insurance, language barriers, stigma, work conflicts, and limited transportation. The researchers implemented free community-based testing in partnership with religious leaders and community health workers to ease access and trust issues affecting COVID-19 testing in Latinx communities. High positivity rates in Latinx populations may not have been detected without the implementation of tailored community outreach and low-barrier testing.

WHERE:

Baltimore, Md.



WHEN?

The study took place
June 2020–Oct. 2020



WHO?

57.5% of 1,786 individuals tested were Latinx and **85%** of the Latinxs tested had limited English proficiency (LEP)



THE POPULATION

Latinx participants at these community-based testing sites had limited access to care



92% of patients who tested positive and **82%** of those who tested negative had limited English proficiency

Some Latinxs feared getting testing because of the possibility of losing their job if they tested positive

Many patients tested positive for COVID but didn't have symptoms.

WHAT WORKED: TAILORED INTERVENTIONS

Free community testing events at a trusted site (local church)



Outreach to COVID-19 positive patients by bilingual community health workers (CHWs)

Referral by bilingual CHWs to services which support quarantine (food delivery, hotels, cash assistance, work excuses / return to work letters)

KEY FINDINGS

Community-based testing identified high levels of ongoing SARS-CoV-2 transmission among Latinxs with limited English proficiency (LEP).



Those who tested positive were more likely to be younger, live in larger households, and report Spanish as their preferred language.

Latinxs were almost 10 times more likely to test positive than non-Hispanic Whites.

Immigrant status and English language proficiency are important considerations for researchers studying health disparities. Bilingual, bicultural staff and an easily accessible, trusted site (like the church) helps ease access and trust issues.

Partnerships between researchers and community organizations are critical to ensure testing and support services are accessible, trusted, and responsive to the needs expressed by the community.

This summary was completed in Jan. 2022. This summary includes only results from one single study. Other studies may find different results. The study was supported by the NIH RADx® Underserved Populations (RADx-UP) initiative (Grant R01 DA045556-04S1).

Citation: Bigelow BF, Saxton RE, Flores-Miller A, et al. Community Testing and SARS-CoV-2 Rates for Latinxs in Baltimore.

American Journal of Preventive Medicine. 2021;60(6):e281-e286.

doi:[10.1016/j.amepre.2021.01.005](https://doi.org/10.1016/j.amepre.2021.01.005)

To read the published research article, visit radx-up.org.

A Research Collaboration with

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JOHNS HOPKINS
MEDICINE

Las vacunas contra el COVID-19 son un elemento clave para disminuir el número de nuevas infecciones, minimizar la probabilidad de infecciones graves y frenar la pandemia. Las comunidades de minorías raciales y étnicas no solo se han visto desproporcionadamente afectadas por la pandemia en términos de impacto económico y mortalidad, sino también en términos de tasa y velocidad de aceptar y recibir la vacunación. Este estudio tiene como objetivo investigar: (1) la prevalencia de la aceptación de la vacuna contra el COVID-19 y la desconfianza hacia la vacuna contra el COVID-19 en las comunidades marginadas de Delaware; y (2) los factores (características demográficas, socioeconómicas y comportamientos relacionados con el COVID-19) asociados con la desconfianza en la vacuna.

DÓNDE

Delaware, EE. UU.



CUANDO

Los datos se recopilaron desde el 4 de marzo de 2021 hasta el 25 de mayo de 2021.



QUIÉNES

El estudio incluyó a 293 participantes (edad >18) de las comunidades más desfavorecidas de Delaware.



THE POPULATION

Definimos las comunidades desfavorecidas como áreas, indicadas geográficamente por la zona censal, que experimentan altas tasas de pobreza, desempleo y desigualdades de salud. **Cabe señalar que la muestra de este estudio (n = 293) incluye a individuos reclutados entre las fechas del 4 de marzo de 2021 al 25 de mayo de 2021.** El estudio no incluye a los participantes reclutados del 26 de mayo al 30 de octubre. Por lo tanto, el presente estudio solo representa un tercio de la muestra total reclutada para el proyecto, que se analizará en futuras publicaciones.



La muestra

El 73 % de los participantes se identificó como negro.

MEDIDAS Y OBSERVACIONES

- Edad promedio: **44.36 (Desviación Estándar =14.55).**
- El **64 %** tenía nivel de escuela secundaria e inferior.
- El **41 %** tenía empleo.
- El **45 %** en 2020 tuvo ingresos familiares de menores a \$20.000.
- El **65 %** se había realizado pruebas de COVID.
- El **30 %** recibió una dosis de la vacuna contra el COVID en comparación con el **53 %** para todos los habitantes Delaware en ese momento.
- El **60 %** tenía dudas respecto a la vacuna (Encuestados que eligieron la respuesta "No quiero vacunarme", "Prefiero no contestar" y "No sé" se codificaron como con dudas respecto a la vacuna, de acuerdo con investigaciones anteriores).



HALLAZGOS CLAVE

- Una proporción considerable de participantes se clasificó con dudas o desconfianza respecto a la vacuna en nuestra muestra del estudio (60 %).
- **El hecho de ser negra aumentó la probabilidad de tener dudas o desconfianza respecto a la vacuna contra el COVID-19,** lo que concuerda con estudios anteriores sobre la indecisión a la hora de vacunarse.
- Haberse sometido a una prueba de COVID en el pasado disminuyó las probabilidades de tener dudas o desconfianza respecto a la vacuna contra el COVID-19.



CONCLUSIONES

- Nuestro estudio representa un primer paso fundamental para comprender los determinantes que impulsan la aceptación de la vacuna contra el COVID y las dudas y desconfianza al respecto. **Identificar los factores clave y las causas de las dudas y desconfianza sobre las vacunas puede ayudar a establecer nuevas estrategias que contrarresten las bajas tasas de vacunación en las comunidades desfavorecidas.**
- Puede ser beneficioso que el gobierno y los servicios de salud pública lleguen a las comunidades vulnerables y difundan la seguridad, la eficacia y la importancia de vacunarse contra el COVID-19.



Cita: Wang, S. X., Bell-Rogers, N., Dillard, D., & Harrington, M. A. (2021). COVID-19 Vaccine Hesitancy in Delaware's Underserved Communities. *Delaware Journal of Public Health*, 7(4), 168-175. doi: 10.32481/djph.2021.09.022

Este resumen se realizó en junio de 2022. Este resumen incluye únicamente los resultados de un solo estudio. Otros estudios pueden hallar resultados diferentes. El estudio fue apoyado, en parte, por la iniciativa del programa Aceleración Rápida del Diagnóstico en Poblaciones Desfavorecidas RADx® (RADx-UP) de los Institutos Nacionales de Salud (National Institutes of Health, NIH) (3 UL1 TR003017-02S2).

Para leer el artículo de investigación publicado, visite radx-up.org.

Una colaboración de investigación con:

DelawareStateUniversity

It All **MATTERS.**

SUSSEX
COUNTY HEALTH COALITION

HOPE
COMMISSION
INSPIRATION • COLLABORATION • TRANSFORMATION



Redefining Scholarship

The academic community has historically deemed academic research products as the primary credible method for generating and disseminating knowledge. By terming community-generated products as “non-scholarly” or “non-academic,” even when we choose to include them in our knowledge base, we create a hierarchy and privilege the voices of academic researchers. This limits the accessibility and utility of information generated outside of academia. Factors such as technical language, proximity to academic affiliations, and the **need for journal subscriptions** hinder the reach of academic research products to those outside of universities. Additionally, valuable, peer-reviewed products generated within communities have been deemed less valid, scientific, and relevant. These factors further limit the voices of already **marginalized communities in research**.

The **RADx-UP** Program seeks to uplift and learn about those who have long been underrepresented in research as both investigators and participants. Similarly, the

RADx-UP Engagement Resource Center seeks to center the knowledge generated and disseminated by and for these underrepresented communities. In an effort to recognize these knowledge sources, “*Scholarship from the field*” or “*community scholarship*” will replace the term “non-scholarly” or “non-academic” for community-generated products. We hope to:



Expand the reach and access of scholarship centering minoritized and historically underrepresented communities



Uplift community-validated products as equally valuable to academically-validated products



Provide basic guidance for terming the various types of scholarship



Keep in Mind

How a product is categorized depends on the process by which it was created.



Definitions

Scholarship can be defined as **creative, intellectual work that is validated by peers and communicated broadly**.

Scholarship can include various forms of inquiry and result in different outcomes, but all scholarly work achieves stated goals, is documented and evaluated, and is ideally communicated or made public in appropriate ways so as to have an impact on the discipline and significance within the field.

Community scholarship, also known as “*Scholarship from the field*” is an inclusive term that centers authentic practice-based knowledge production. They are defined as research products developed by community-based organizations/leaders for the communities they serve. These products are often disseminated more quickly and directly than academic scholarship. We propose the use of the term ‘field’ to highlight that knowledge production can be a reflexive, practice-based process that centers the lived experiences of community members. As such, validity of scholarship from the field/community scholarship is determined by a peer review process comprised of collaboration and feedback from members of the community. Examples of products include dissemination materials such as briefs, reports, reference guides, data visualizations, and research tools such as **surveys**, dashboards, data tool kits; and **educational, promotional, or multimedia communication materials**.

Academic scholarship is defined as research products that require peer review by academic researchers and are published in academic journals or by academic presses.

Formal qualitative, quantitative, and/or mixed research methods are applied to determine rigor and validity of these products. Examples include academic books, book reviews, clinical case studies, research articles, and public use research data.

Community-Engaged Scholarship, also known as “*co-constructed scholarship*,” is defined as knowledge produced through a **co-learning model** between communities and academic researchers. The intent of this scholarship is for communities to lead the foundation of the knowledge production while academics serve in a logistical support role (dissemination, access, funding, implementation, etc.). As such, validation of co-constructed scholarship involves an iterative process of co-learning and bidirectional dialogue, whereby all parties contribute their expertise. Examples include co-designed surveys tools, co-authored publications, adapted infographics, **reports**, etc.



What can I do?

1. When referencing community-created products, use the terms “scholarship from the field” and “community scholarship.”
2. Incorporate community perspectives whenever appropriate and possible in research.
3. Continue the discussion! Share this information with your colleagues and partners.

RADx-UP IMAGE BANK SCOPE OF WORK

02/03/2022

OVERVIEW

1. Project Background and Description

Rapid Acceleration of Diagnostics – Underserved Populations (RADx-UP) projects and community partners need to have images, including photographs, that are representative of the diverse populations and communities the projects serve. The representations that can be currently found in print and online do not meet the diverse needs of the RADx-UP projects. Hence, the RADx-UP Image Bank, which will be housed within Box and will be maintained by the Engagement Resource Center (ERC) personnel, has been created to provide a place for members of the RADx-UP community to download, submit, share, and use photographs and images of diverse community members during the COVID-19 pandemic. The RADx-UP Image Bank will contain project and community member submitted photos with accompanying stories that document their experiences during the COVID-19 pandemic.

2. Project Scope

The scope of this image bank is to provide a place for project and community member photographs and story submissions to be housed for all members of the RADx-UP community to use and share. The image bank will allow for both RADx-UP projects and community members to submit photographs and personal COVID-19 stories through the myRADx-UPHome portal, for project submissions, or a Qualtrics link, for community member submissions. The images may then be used by the RADx-UP CDCC and RADx-UP projects for literature, websites, media (print, online, and television), conferences, and publications. The RADx-UP CDCC will contract with community-based photographers in the geographic locations of RADx-UP projects for photographs and stories from those communities. All submissions and entries into the RADx-UP Image Bank will be assessed to ensure the images reflect racial, ethnic, gender, socioeconomic background, and abilities that represent the diversity of RADx-UP projects. The RADx-UP Image Bank will be stored in a secure folder on Box where projects and community partners within the RADx-UP program to request access.

3. High-Level Requirements

- Consent must be obtained from every individual appearing in a photograph.
- Crowd scenes where no single person is the dominant feature is exempt from consenting.
- RADx-UP projects and community members at large can submit photographs with text detailing the photographs' story.
- All photographs and stories will be the property of the RADx-UP CDCC and for use by the CDCC and RADx-UP projects (including Rapid Research Pilot Program and the Community Collaboration Grants).
- Contract with community-based photographers.

4. Deliverables

The RADx-UP Image Bank project began in July 2021. IRB submission will take place in February 2022, followed by identifying and contracting with community-based photographers. Project photograph and story submissions will be submitted via myRADx-UPHome through July 2022. Community members will be able to submit photographs and stories via Qualtrics link. Once the RADx-UP Image Bank project is complete, RADx-UP projects and community

partners will have access to all images, photographs, and COVID-19 stories for the duration of the RADx-UP program, or at a time in the future TBD.

5. Affected Parties

- RADx-UP Engagement Resource Center personnel: Will maintain the RADx-UP Image Bank.
- Box: Will house the RADx-UP Image Bank.
- myRADx-UPHome: Projects can submit photographs for the RADx-UP Image Bank.
- Qualtrics: Community members can submit photographs for the RADx-UP Image Bank.
- Community-based photographers: Individuals contracted through RADx-UP CDCC to take photographs of members of their communities and record the members' COVID-19 stories.
- RADx-UP Projects: Will be able to request access to the RADx-UP Image Bank to utilize images, photographs, and stories for presentations, newsletters, media, COVID-19 messaging, publications, and other activities not yet known.

6. Implementation Plan

The RADx-UP Image Bank will be submitted to the DUHS IRB in February 2022. The RADx-UP CDCC will also contract with photographers from several RADx-UP communities to take photographs of community members for submission to the RADx-UP Image Bank. The photography initiative will be presented to RADx-UP projects through the EITs and at monthly project meetings. Around 10 interested projects will be selected to submit photographs to the RADx-UP Image Bank. The RADx-UP CDCC will submit the RADx-UP Image Bank project to the DUHS IRB and once the project is approved the RADx-UP CDCC will begin contracting with community-based photographers. All community members who are photographed will be informed and consented prior to having their photograph or image taken and they will be able to voluntarily give their story in writing for submission to the RADx-UP Image Bank. Community members, at large, will also be able to submit photographs to the RADx-UP Image Bank. People appearing in photographs submitted by community members will be consented prior to having their photograph submitted to the RADx-UP Image Bank.

7. High-Level Timeline/Schedule

The RADx-UP Image Bank project began in July 2021 and is expected to be complete by July 2022.

YOU'VE TESTED POSITIVE FOR COVID-19. NOW WHAT?

Whether you have symptoms or not, if you test positive for COVID-19, follow these steps to care for yourself and help protect others.



Stay home, isolated from other people

- Even if you don't have symptoms, do not leave your home for 10 days, except to get medical care.
- Get rest and stay hydrated.
- Stay alone in a closed room away from other people and pets, as much as possible.
- Use a different bathroom, if possible.



Monitor (or watch for) your symptoms

- Stay in touch with your doctor or local health department. Follow their instructions.
- Seek medical care if you have trouble breathing or any emergency warning signs.
- If you have an emergency, call 911 and let the operator know you need care for someone who has or may have COVID-19. You can also call ahead to your local emergency room.
- Try to avoid public transportation, ride-sharing, or taxis.



Clean your hands often

- Wash your hands often with soap and water for at least 20 seconds, especially after blowing your nose, coughing, sneezing, going to the bathroom, and before eating or preparing food.
- Use hand sanitizer when soap and water are not available.
- Avoid touching your eyes, nose, and mouth.



Wear a mask and cover coughs and

- If you have to be around other people or pets, wear a mask, even at home. Make sure your mask covers your nose and mouth.
- Try to stay at least six feet away from other people.
- Children under age two, anyone who has trouble breathing, or anyone who is not able to remove the mask without help should not use a mask.



WARNING SIGNS INCLUDE BUT ARE NOT LIMITED TO:

- Trouble breathing
- Constant pain or pressure in the chest
- New confusion
- Not able to wake-up or stay awake.
- Pale, gray, or blue-colored skin, lips, or nail beds, depending on skin tone



Help slow the spread

- Even without symptoms you can still spread COVID-19 to others. Let anyone with whom you were in close contact in the past 48 hours (2 days) know you tested positive so they can isolate and get tested.
- If someone from the health department calls you, you should answer the phone. Knowing your test results or if you have been around someone else who tested positive will help slow the spread.

VACCINATED? TESTING STILL MATTERS!

Even with the growing rate of COVID-19 vaccinations in the US, testing is still an essential tool to help control the pandemic and ultimately end it.

5 REASONS TO TEST:

2. Prevent a resurgence

Many experts believe it's unlikely that COVID-19 will ever disappear completely. Even if it circulates at very low levels, we need to understand where it is, how it might be changing, and how these changes might lead to future public health problems.



3. Track variants

The virus that causes COVID-19 will continue to mutate, and new genetic variants will emerge. Continued testing can help catch worrisome variants early.



4. Adjust safety precautions

Testing can help public health officials gauge whether vaccinations are working to protect people from the worst effects of the disease and controlling the emergence of variants, and whether variants are getting more contagious or having more severe impact. If cases begin to rise, schools, offices, and other places where people gather may need to change their mask policies, enforce greater social distancing, or improve ventilation.



5. Assist where vaccination rates are lower

Testing remains an important tool especially in communities and areas where vaccination rates are not yet high enough to effectively reduce virus spread.



1. Treat high-risk cases early

Vaccinated people can still get COVID-19, though usually those infections won't require hospitalization or lead to death. However, for people at a high risk for getting very sick from COVID-19, catching infection early is key, so healthcare providers can consider treatment that can be effective when started in the very early days of an infection.



EXPOSED?
HAVE SYMPTOMS?
GET TESTED!



Addressing COVID-19 Testing Inequities Among Underserved Populations in Massachusetts (MA)

- **Community health centers (CHC)** have played a critical role in addressing the COVID-19 testing needs of historically disadvantaged communities.
- We **explored the views of COVID-19 testing barriers** in six MA communities that are predominately low-income.
- Our findings were used to **build community-specific strategies** to address testing inequities.



Scan QR code to read
the full article!

WHO PARTICIPATED



**107 CHC staff,
community partners
and residents**

We did **qualitative interviews**
over Zoom and phone. Resident
interviews were conducted in
English, Vietnamese, Arabic and
Spanish.

WHAT WE DID



WHAT WE FOUND



Barriers to testing included:
**access to state-run testing sites,
weak social safety nets, and lack
of testing suppliers and staffing
that made wait time longer.**

**This increased
fears around
testing and
limited
knowledge on
testing
availability.**

**Partnering CHCs were
able to use these data to
help the local needs of
each community.**

**This study shows the structural
disparities of people's experience
of COVID-19 and how we can
translate data for action in real time
(especially for a rapidly evolving
pandemic).**

WE OUTSIDE AND COVID'S STILL OUTSIDE TOO!

Take a home test today.





**HELP US UNDERSTAND WHERE COVID
IS STILL ACTIVE IN OUR COMMUNITY.**

Mail in your test and we'll pay you for your time!



SECTION THREE

APPENDIX G

Policy and Practice

G1: Policy Framework Exercise for Community-Based COVID-19 Testing

G2: Prioritizing Community Health Workers in Health Care Reform is Key to Enhancing Health Equity

G3: ABC Science Collaborative: What Science Says About Preventing COVID-19 in North Carolina's K-12 Schools

G4: Health Equity Policy Framework (Executive Summary)

G5: Community-Based COVID-19 Testing: Barriers, Solutions and Next Steps

Policy Framework Exercise for Community-Based COVID-19 Testing

BACKGROUND

The RADx-UP CDCC conducted a policy analysis and developed a policy framework to help health leaders to facilitate the scaling-up of solutions that emerged to address challenges during the pandemic. The policy framework identifies five key policy levers for addressing health inequities in COVID-19 and beyond—access, resource allocation, data, communication and messaging, and payment—and three foundational components—community engagement, cross-sector partnerships, and regulatory guidance. Read our full policy paper [here](#), the executive brief [here](#), or the [community summary](#) in English or Spanish .

INTENDED AUDIENCE

An internal document for RADx-UP Working Groups, RADx-UP Awardees partnering with Community-Based Organizations and COVID-19 Coalitions that are familiar with RADx-UP.

PURPOSE

This exercise is a template that can be used to record activities your project, group, or organization is doing to support policy change for community-based COVID-19 testing. View this exercise as a chance to think about current strategies and opportunities to partner with other groups to change policy related to community-based COVID-19 testing.

GOAL

Provide a guide to help your team develop policy change strategies. Completing this exercise template can serve as a first step for RADx-UP Working Groups and Community Collaborative Mini Grant (C2G) participants wishing to pursue policy related goals. This document is meant to be dynamic and a working document that you can either make a copy or print this document. This will allow you to adapt this framework to your organization's operational framework as needed.

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Glossary

Table 1 defines policy terms and academic language that is used throughout this exercise in alphabetical order.

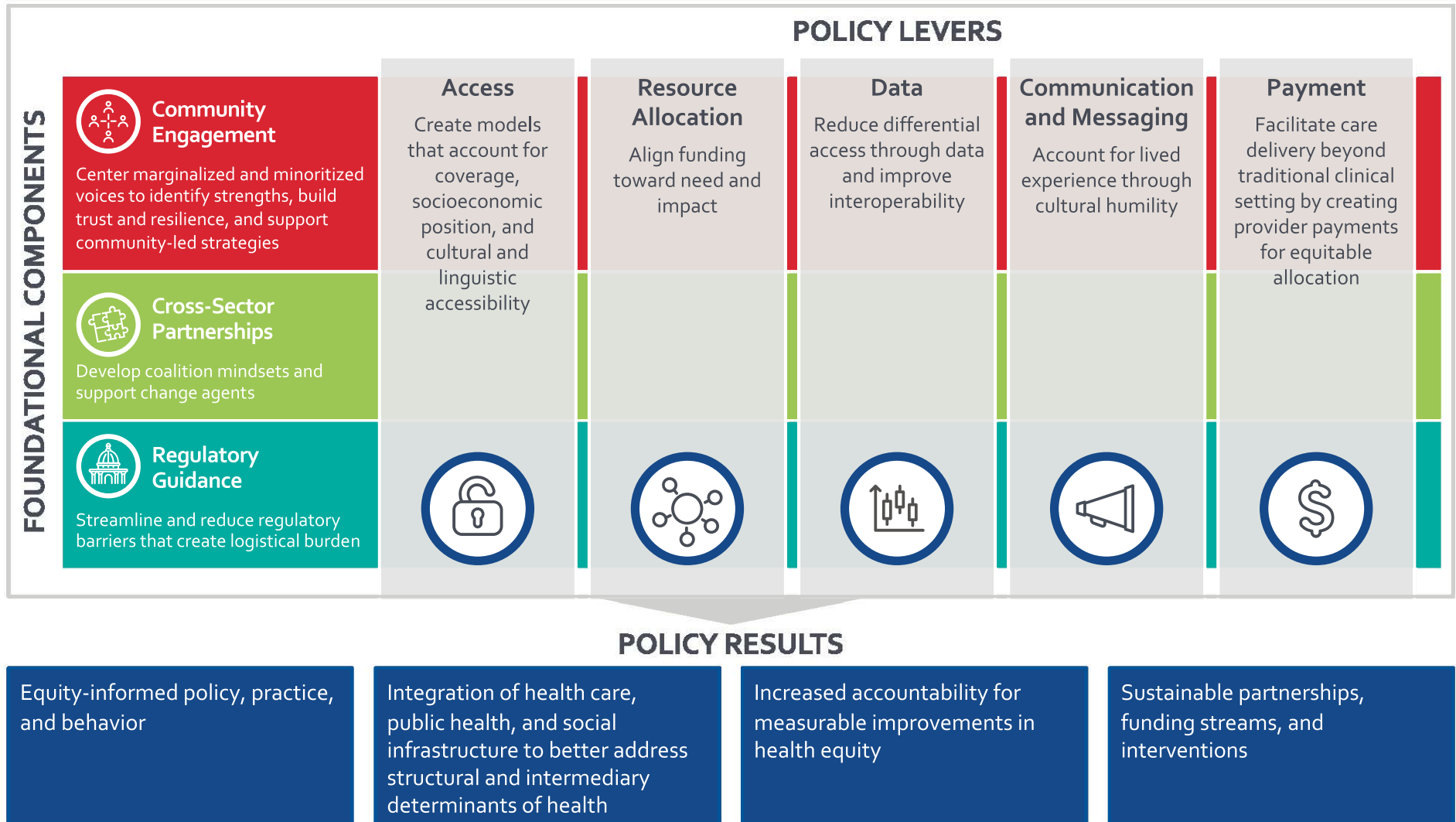
Please feel free to refer back to this glossary when you come across these terms.

TABLE 1: DEFINITIONS OF POLICY TERMS

Term	Definition	Examples
Access	The ability or inability to get to or receive COVID-19 testing, resources, treatment, or vaccines.	Host testing sites at faith organizations or provide testing after work hours to make it easier for people to get tested in their community after their shift
Communication	Language, words, and approaches that connect with the community with whom you are working	Communicating the value of family in messages by saying: <i>Regular testing can help catch COVID-19 early so it doesn't spread in your family.</i>
Data	Information, statistics, and real-world evidence that informs policy changes	Identify COVID-19 testing priority areas by using geographic information system data.
Differential Access	Ability for some people to get what they need while others are not able to get what they need.	Transportation or insurance barriers that impact ability for marginalized and minoritized communities to get tested or receive medical care
Foundational Components	The things needed for community-based COVID-19 efforts to work.	Cross-sector partnerships, community engagement, and regulatory guidance
Geographic Information System (GIS)	A system used to gather, store, analyze, manage, and showcase all types of place based data. Some part of the data must be spatial.	Using zip codes and block-level data to determine which neighborhoods and communities are and are not close to primary care providers.
Interoperability	The ability for different systems or organizations to exchange information and share resources.	A non-profit learning what data the health department collects so they can share information and collect data in a similar way (make the data “talk to each other”)
Payment	Transfer of one form of goods, services, or money in exchange for services provided.	Pay community partners on a bi-weekly schedule instead of one lump sum at the end of a 6-month project to increase equity.
Policy Levers	Areas or grouping of policies that can be used to make change.	Access, payment, resource allocation, communication and messaging, and data
Policy Results	Things that happen as a result of new guidelines, laws, plans, or governmental goals.	Rules that say funders have to create opportunities for community-based projects that extend beyond the lifespan of a disaster or health emergency.
Regulatory Guidance	Strategies that make things simple, keep health data safe, and reduce paperwork or repeated work. Help ensure there is a common standard for people and programs.	Change regulations so Medicaid beneficiaries can be seen at home (telehealth) instead of only in clinics.
Resource Allocation	The process that determines where money, items, testing, food, goods, etc. are distributed	Increase the number of tests to counties with higher COVID-19 rates.
Relevant Partners	A person or an organization that can either make change or can help implement change	Local politicians, thought-leaders, community members and leaders, nonprofit CEOs. This term has been intentionally chosen to replace the term “stakeholder,” which can have harmful connotations.
Task Shifting	Task sharing strategies involve redistributing clinical roles and tasks to different health workers in an effort to deliver timely and quality resources to patients where personnel resources and bandwidth is limited	A network of non-clinical health workers are trained to deliver health education and provide referrals for COVID-19 testing and vaccination

Policy Framework for Community-Based COVID-19 Testing

FRAMEWORK FOR COMMUNITY-BASED COVID-19 TESTING

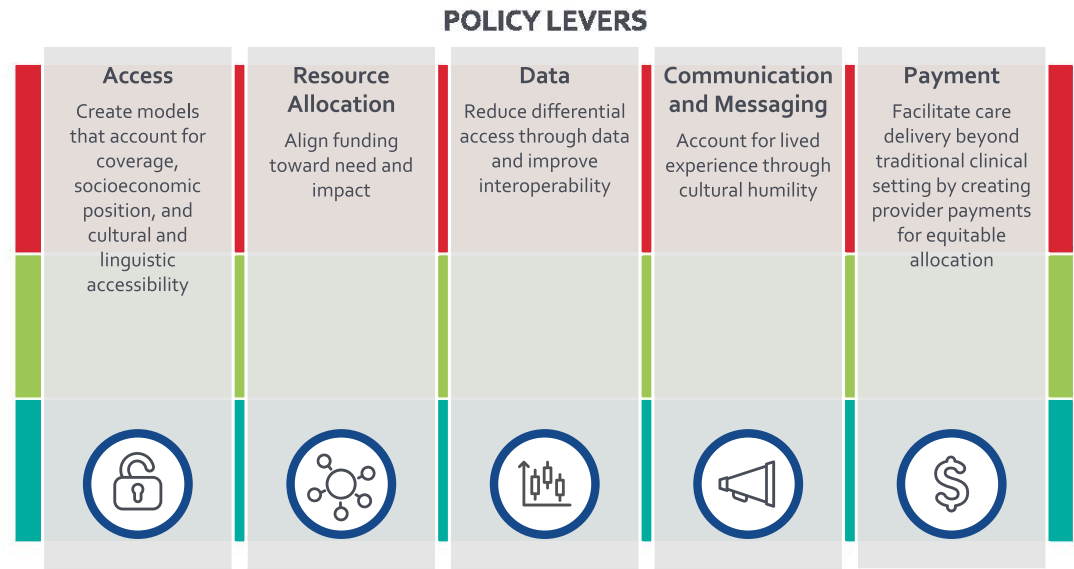


Part 1—Policy Levers

First, we will discuss activities that are not necessarily policy. Use the figure to the right to determine activities that are in alignment with 2 to 3 of the levers. Provide 1-2 concrete examples of how your efforts address that specific lever.

FILL OUT THE TABLE BELOW:

Policy Lever	Concrete Examples
EXAMPLE → Access	Provide testing in local strip malls with large numbers of essential workers Provide testing at local strip malls after typical work hours (5pm)



Part 2—Foundational Components

Use the figure to the right to identify which foundational components your project/effort addresses as well as concrete examples of how your project is addressing these components.

FILL OUT THE TABLE BELOW:

Foundational Components addressed in your work (list all in this box):	Concrete Examples
<div data-bbox="77 532 109 690" data-label="Text">EXAMPLE</div> <div data-bbox="121 532 436 654" data-label="Text"> <p>Cross-Sector Partnerships</p> <p>Community Engagement</p> <p>Regulatory Guidance</p> </div>	<p>Working with doctors and pastors to provide accurate COVID-19 information during church services</p> <p>Hosting a monthly town hall with community members to share results and get feedback on our COVID-19 messaging and makes changes to posters and flyers based on that feedback</p> <p>Working to CITI certify pastors serving locally to participate in future studies</p>

FOUNDATIONAL COMPONENTS



Community Engagement

Center marginalized and minoritized voices to identify strengths, build trust and resilience, and support community-led strategies



Cross-Sector Partnerships

Develop coalition mindsets and support change agents



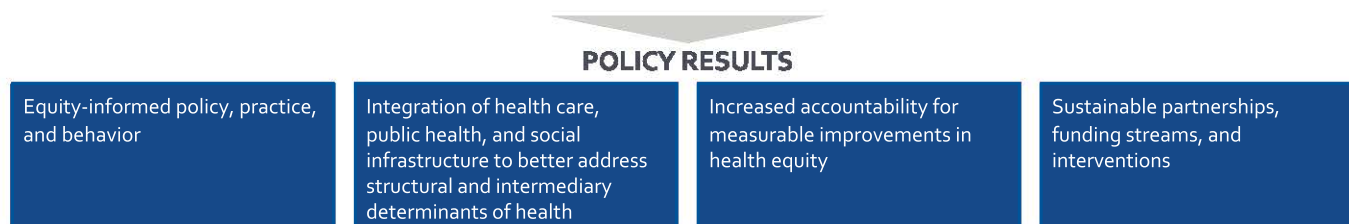
Regulatory Guidance

Streamline and reduce regulatory barriers that create logistical burden

Part 3—Policy & Results

Policy activities can look different in different contexts, though can be law, regulation, procedure, administrative action, incentive, or voluntary practices of governments and other institutions.

Before thinking about what the policy needs to be, ask yourself: **What problem are we trying to solve?** Use that information to draft a policy, and then what the policy result would be for your community.



FILL OUT THE TABLE BELOW, referring to page 3's illustration of the policy levers and foundational components:

	What problem are we trying to solve?	Potential Policies	Policy Results from the Policies you Listed
EXAMPLE	Rural communities don't have enough doctors and doctors are the only ones that can administer the COVID-19 vaccine. There are other clinical providers (e.g., community pharmacists, nurse practitioners) in these communities but they aren't allowed to give shots without a doctor being present in the State of North Carolina.	Identify alternative payment models that support task shifting from doctors to other clinical providers to increase providers that can vaccinate people	Help decrease the issues with doctor shortages in low-income, rural communities by allowing other clinical providers to administer important vaccinations Get more people vaccinated

Part 4—Relevant Partner Groups

Using the policies and policy results you wrote down in Part 3 to determine which relevant partners need to be involved in making these changes. Use the table below to identify the relevant partner groups that need to be addressed, their level (this is important because this may change what they can do), their role (what they do), any assets or strengths they have, and if you do, or do not, already have a relationship with this group or person.

FILL OUT THE TABLE BELOW:

Relevant Partner Group (name)	Level (local, regional, state, and/or national—can be more than one)	Role (what this person or group needs to do)	Assets or Strengths Embedded in this Relevant Partner Group / Community	Relationship (existing or no relationship, and contact information)
<div data-bbox="75 581 121 738" data-label="Text">EXAMPLE</div> Medicaid Health Care Transformation office	State	Meet with Medicaid Health Care Transformation team to identify strategies in current payment reform efforts to incorporate payments that extend the delivery of care through other clinical providers		No relationship

Part 5—Putting it All Together

Take a moment to review and celebrate all of the work you have already done in Parts 1-4. The last two steps of this exercise are creating a strategy and next steps. This last part is integral to make sure your group/organization can succinctly express what you have learned through this exercise to others. It is also important to help you reach your policy change goals.

EXAMPLE TABLE

POLICY LEVER What objective are you aiming to achieve?	KEY ACTION STEP What will you do?	RELEVANT PARTNERS INVOLVED Who else is involved?	TIMELINE
Access Increase access to vaccination boosters	Partner with coalition groups and faith-based organizations in the Triangle in North Carolina, local and state policy makers, and RADxUP projects to hold vaccination and testing clinics as well as conduct community outreach	Coalition groups (e.g., AACT+, LATIN-19); local and state policymakers	Done by 6 months
Resource Allocation Increased funding (resource allocation) to clinical providers in rural communities	Present at NCDHHS Historically Marginalized Populations Working Group to show evidence that community events lead to increased vaccinations	NCDHHS Historically Marginalized Populations Working Group	August 15th, 2022
Data Use available data to understand access gaps	Work with local community groups to identify testing priority sites based on geographic mapping system and asset mapping data	Community-based organizations; local public health practitioners	Done by 6 months
Communication and Messaging Develop culturally and linguistically responsive COVID-19 communications and messages	Identify and collaborate with trusted community messengers to disseminate key information and host community town halls with NCDHHS	Community-based organizations; NCDHHS	Date of next community town hall
Payment Align provider payments for other clinical providers	Meet with NCDHHS Medicaid Health Care Transformation team to identify ongoing Medicaid payment reforms to extend provider payments to other clinical providers	NCDHHS Medicaid Health Care Transformation Group	3 months

AACT+: African American COVID-19 Taskforce

LATIN-19: Latinx Advocacy Team & Interdisciplinary Network for COVID-19

NCDHHS: North Carolina Department of Health and Human Services

FILL OUT THE TABLE BELOW:

POLICY LEVER What objective are you aiming to achieve?	KEY ACTION STEP What will you do?	RELEVANT PARTNERS INVOLVED Who else is involved?	TIMELINE
Access			
Resource Allocation			
Data			
Communication and Messaging			
Payment			

Extra Notes



Prioritizing Community Health Workers in Health Care Reform is Key to Enhancing Health Equity



This community policy brief is a synopsis of the full policy brief, “Opportunities to Enhance Health Equity by Integrating Community Health Workers into Payment and Care Delivery Reforms,”

The COVID-19 pandemic has underscored the importance of community health workers (CHWs) within community-based care. Also known as “lay health advisers” or “health navigators,” and in Spanish as “promotoras or promotores de salud,” CHWs are essential links between community members and health care services. Importantly, they assume critical roles both in community and clinical settings.

The policy team within the coordination and data collection center for RADx[®] Underserved Populations (RADx-UP) has reviewed 16 research publications generated by RADx-UP project teams and offers a new policy paper exploring the evidence of how CHWs have served in critical roles to improve equitable access to COVID-19 testing, vaccination, and therapeutics.

In 2020, the National Institutes of Health (NIH) invested more than \$500 million in community-based COVID-19 testing and associated services through the RADx-UP initiative. Many of the 137 RADx-UP research projects embedded CHWs as key partners in their programmatic infrastructure to address inequities in COVID-19 testing. In this policy brief, we have gathered experiences from



PHOTO CREDIT: GLENFORD NUNEZ PHOTOGRAPHY, COURTESY OF THE RADx-UP IMAGE BANK

RADx-UP projects during the COVID-19 pandemic and identified policy changes that prioritize community health in payment and care delivery reforms.

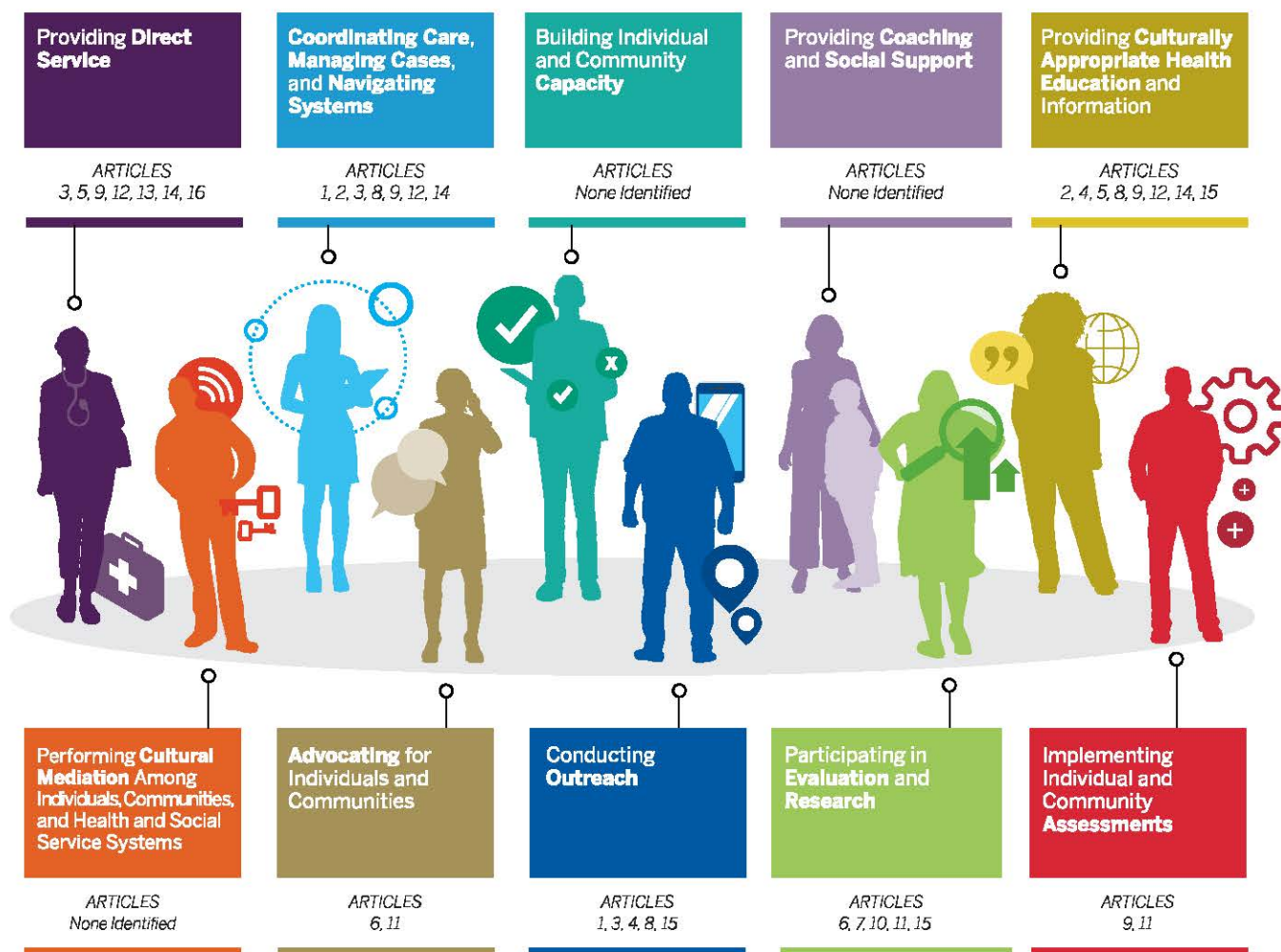
The examples explored in the policy paper illustrate how CHW models can bridge systemic and cultural gaps in the coverage, service delivery, and affordability of health care, demonstrating the potential to make meaningful progress in improving health outcomes and reducing health disparities. The evidence demonstrates that community-based care that prioritizes CHWs in the health workforce can not only respond during public health crises like COVID-19, but also

be incorporated seamlessly into existing infrastructure to support equitable health policy and practice.

The paper shares that CHWs, who were integral partners with RADx-UP projects, served in multiple community health roles, ranging from advisory to outreach to shared project leadership.

In the majority of studies reviewed, where the CHW role was defined, activities included sharing culturally and linguistically appropriate information about the COVID-19 pandemic. They provided direct services, such

The Many Roles of Community Health Workers



STUDIES: 1. Barret et al. 2022; 2. Berkley-Patton et al. 2022; 3. Bigelow et al. 2021; 4. DeGarmo et al. 2022; 5. Ko et al. 2022; 6. Kruse et al. 2022; 7. Lee et al. 2022; 8. Martinez et al. 2022; 9. Pirraglia et al. 2021; 10. Rivera-Núñez et al. 2022; 11. Stadnick et al. 2022; 12-15. Thouni et al. 2022; 16. Whanger et al. 2022.

*These roles are adapted from 10 core community health worker roles described by The National Community Health Worker Core Consensus (C3) Project. To read more about each role type refer to the C3 Project Resource Page at <https://www.c3project.org/resources>

as administering COVID-19 tests, and coordinating care and health system navigation. Additional CHW roles reported by RADx-UP projects included patient outreach, research and evaluation, community assessment, and community advocacy.

The RADx-UP initiative has demonstrated that building trust and developing relationships are necessary for the success of community-engaged interventions. These require time, organizational capacity, and financial resources dedicated to these activities.

- The paper outlines five policy recommendations to enhance and prioritize CHW models into existing health care transformation reforms.
- Policy recommendations 1–3 highlight specific near-term steps to prioritize CHWs into existing health care reforms, including developing performance measures, alternative payment models, and certifications.
- Policy recommendations 4–5 focus on long-term steps for incorporating community-engaged interventions.

WHAT'S NEXT?

Policymakers and health care leaders may look to these policy recommendations to support CHWs as essential links in community-based care. Policy efforts to sustain these community health models may be applied beyond the COVID-19 pandemic to broader health care transformation initiatives to enhance health equity in the U.S. V

Policy Recommendations For Health Care Delivery Reform

Alongside increased funding and resources from federal and state agencies during the COVID-19 pandemic, several additional strategies can overcome the remaining barriers to implementing and evaluating community-engaged interventions.

SHORT-TERM RECOMMENDATIONS



1 Revise federal quality measures to reflect the contributions of community health workers (CHWs) in engaging communities and ensuring equitable access to care

The recent federal reform of quality measurement allows CHW contributions to health care transformation to be better recognized. The benefits of CHW involvement in RADx-UP projects can help inform a more streamlined, patient-centered, and community-oriented framework for patient care equity and quality.



2 Prioritize CHWs through expanded alternative payment models

Payments to CHWs should be stable and predictable so they can devote their time to community-based interventions. Recognizing CHWs as independent providers can allow their services to be sustainably incorporated into care delivery. More creative solutions may be required to facilitate payment of CHWs in a greater range of care delivery models.



3 Use existing competency frameworks to align CHW roles to reimbursement models

As health systems and states increasingly integrate CHWs into care delivery, policy makers and health leaders can use existing competency models to establish a flexible set of guidelines for CHW training and certification. CHWs should be included as key decision-makers in determining the policy implications of more standardized certification programs.

LONG-TERM RECOMMENDATIONS



4 Develop multi-year funding grants to extend the time available for evaluating community-based interventions

Grant cycles could provide more time for CHW evaluation and community outcomes assessment. Specific funding could support grantees in developing measurement and evaluation timelines that run in parallel with implementation and include community feedback.



5 Support CHWs to hold leadership and decision-making roles in community-engaged research

The traditional paradigm of research, intervention, and evaluation often leaves CHWs out of decision-making and leadership roles. As members of the marginalized communities they serve, CHWs hold less power than researchers or health system leaders in shaping research and evaluation, creating a barrier to both systemic change and the development of effective community-engaged projects.

What Science Says About Preventing COVID-19 in North Carolina's K-12 Schools

WHAT DID THE ABC SCIENCE COLLABORATIVE STUDY?

Researchers with the ABC Science Collaborative collected data from 100 school districts and 14 charter schools in North Carolina from March through June 2021. These schools represent more than 1.2 million students and 160,000 staff.

Researchers studied how many people caught COVID-19 in "Plan A" schools that offered full in-person instruction, and compared results with "Plan B" schools, which offered hybrid instruction to enable six feet of physical distance.

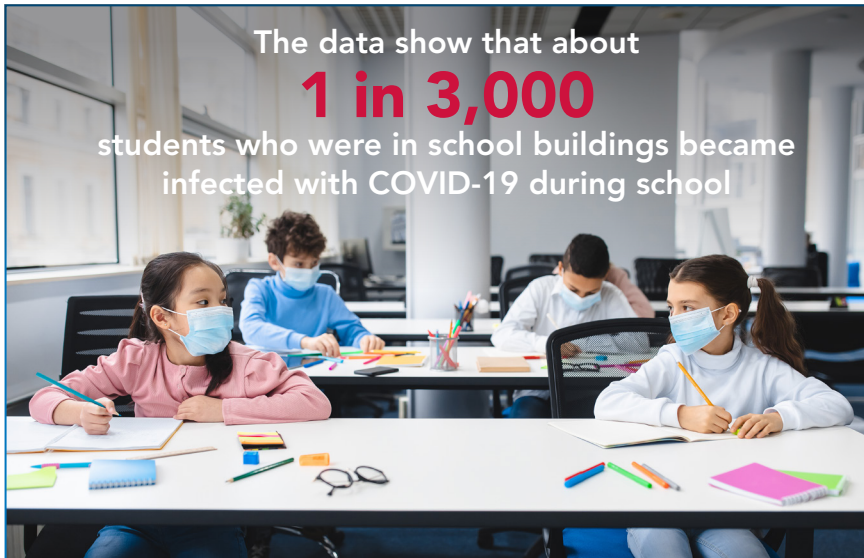
100

school districts



14

charter schools



WHO FUNDED THIS RESEARCH?

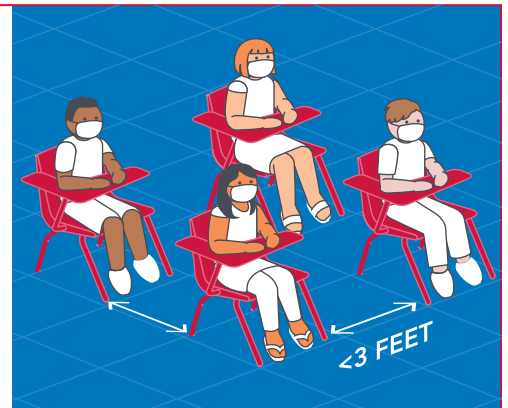
The state of North Carolina funded the ABC Science Collaborative to collect this data from schools after legislation mandated that all districts open for in-person education.

WHAT DID RESEARCHERS LEARN?

Researchers found schools did a great job preventing COVID-19 spread, regardless of whether they used Plan A or B. Keeping students, teachers, and staff properly masked prevented spread. Even with this success, 40,000+ students and staff were quarantined, resulting in hundreds of thousands of missed school days.

WHAT ABOUT DISTANCING IN SCHOOLS?

When students, teachers, and staff are masked, how much distance is maintained between people does not matter. Whether schools required greater than 3 feet of distance between people or less than 3 feet, researchers found no difference in the number of positive COVID-19 cases.



WHAT ABOUT DISTANCING ON BUSES?

Data also showed no difference in transmission of COVID-19 between students in districts that offered 1, 2, or 3 masked students to a bus seat.



WHAT ABOUT EXTRACURRICULARS LIKE SPORTS?

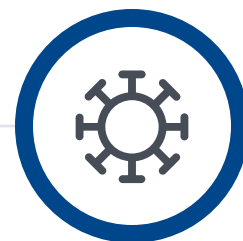
Researchers found that the risk of COVID-19 spread in extracurricular activities, like sports, is low but higher than in the classroom. More research is needed to find out why. For sports, the research so far is not clear about whether transmission occurred during practice, games, or other team events where masking is difficult. Indoor sports can be safer with masking or vaccination. Outdoor and non-contact activities are likely to be lower risk.

WHAT DOES THIS MEAN FOR FAMILIES AND SCHOOLS?



- Wearing masks correctly is the most effective strategy to prevent within-school transmission of COVID-19 when vaccination is unavailable or not enough people are vaccinated.
- Full in-person instruction (Plan A) is safe for all grades, in all schools, when masking is in place. Hybrid instruction (Plan B) can be eliminated.
- Full-capacity bus transportation can and should resume, with the seating of up to 3 masked students per bus seat.
- Schools should closely look at safety protocols around athletics and extracurricular activities to limit COVID-19 spread.
- Policy makers should consider changing school quarantine policies for people who were exposed to COVID-19 but are either vaccinated or were appropriately masked when exposed. In other words, if one student in a classroom tested positive for COVID-19 but was wearing a mask at school, other students in that student's classroom who were also masked are at low risk for contracting the disease. Modified quarantine policies could keep more students from missing school without increasing COVID-19 spread.

Scaling Up Equitable Access to Community-Based COVID-19 Testing: Strategies from the RADx-UP Initiative



Executive Summary

The COVID-19 pandemic has magnified how structural racism and other structural determinants of health affect the lived experience of the public health emergency on marginalized and minoritized communities. These communities include Black, Latino or Latinx, American Indian, Alaska Native, Asian, and Native Hawaiian and Pacific Islanders communities as well as people who are incarcerated, low-income, or disabled, in addition to older adults, children, LGBTQIA, and birthing people. Achieving an equitable response to COVID-19 and future public health emergencies requires: reducing barriers that preclude populations from reaching health services in a timely manner, centering equity in policy making decisions, and engaging communities. Community-based COVID-19 testing can ensure all populations have access to testing, which is a key step to linking people to treatment and reducing disparities in COVID-19 health outcomes.

Insights from the Rapid Acceleration of Diagnostics-Underserved Populations (RADx-UP) Initiative offers a timely perspective into strategies for supporting community-based testing to respond to COVID-19 surges and variants. In this policy paper, we propose a policy framework to identify common barriers to equitable

COVID-19 testing and facilitate the scaling-up of the solutions that emerged to address them. We identify five key policy levers and three foundational components that are necessary to lead to measurable improvements in health equity. We aim for health leaders—including policymakers, community organizers, and other health care practitioners—to use these community-engaged policy strategies to inform community-based testing for future COVID-19 surges and variants.

Policy Levers



Equitable **access** requires removing barriers that prevent people from reaching COVID-19 testing sites



Efficient, transparent, and equitable **resource allocation** is needed to meet the needs of populations experiencing higher risk, vulnerability, or exclusion



Accurate and reliable **data** are crucial to support decision-makers to address health disparities and implement mitigation measures during the COVID-19 pandemic



Trustworthy, clear, and culturally responsive **communication and messaging** is needed to connect patients, providers, and communities to resources



Payment reforms that create incentives for quality of care and support innovative care management can accelerate efforts to advance health equity

Foundational Components



Community engagement promotes health equity, demonstrates the trustworthiness of health organizations in communities, and centers marginalized and minoritized voices



Cross-sector partnerships spanning health systems and communities they serve often have greater impact than efforts of any one stakeholder group acting alone



Regulatory guidance that seek to streamline processes, protect health data, and reduce administrative burden are important to support work within each policy lever

KEY STRATEGIES FOR COMMUNITY-BASED COVID-19 TESTING

We identified five key strategies for community-based COVID-19 testing based on real-world experiences from RADx-UP awardees and an environmental scan of the literature:

- *Extending the reach of existing health care infrastructure to expand access* includes creating additional sites, including walk-up testing sites, mobile testing sites, or at-home solutions, as well as funding community health workers (CHWs)
- *Using novel tools and measures to bolster equitable distribution and resource allocation* to identify communities burdened by high social and economic deprivation or comprising predominantly marginalized and/or minoritized populations
- *Increasing data protections and community feedback when standardizing data collection to address health inequities* includes deidentifying data, developing culturally

sensitive common data elements (CDEs), and engaging communities in data collection

- *Creating transparent, community-informed communication and messaging* includes collaborating with trusted community leaders and supporting community input to build trust, allay concerns, and ensure messaging is culturally and linguistically responsive
- *Developing provider payments that facilitate community-based delivery of testing beyond a traditional clinical setting and reduce cost sharing for populations seeking testing* are key facilitators to increase testing uptake

LOOKING AHEAD: CONSIDERATIONS FOR POLICYMAKERS, PROVIDERS, AND RADx-UP PROJECTS

Community-based models that have promoted COVID-19 testing can be adapted more broadly to ensure individuals have access to health care resources that they trust and understand. Case examples in the policy paper illustrate the needed shift to support and finance community-based strategies, which have the greatest potential to sustainably reduce health disparities and bridge health equity gaps. Key steps policymakers, providers, and RADx-UP projects can take are:

- Develop accessible health services and public health interventions that overcome systemic inequities
- Allocate resources and services that address context-specific community barriers by using data tools and developing partnerships and networks
- Implement and operationalize data strategies that identify racial and ethnic disparities, embed community engagement, and support technical capacity
- Design communication and messaging strategies that reflect the community context and culture, use bidirectional channels, and embed cultural humility
- Advance payment reforms that support community-based care delivery models and remove systemic barriers to health services

Key Takeaways: Strategies to Embed Equity in COVID-19 Testing Efforts

For Policymakers:

- Extend health coverage to redress systemic inequities in insurance rates; support the development of equity-focused metrics; and support policies to extend services beyond traditional health care settings
- Encourage cross-sector data sharing to improve quality and timeliness of data application; and build on experience using disadvantage indices to identify geographic areas or populations exhibiting the greatest need for resources and COVID-19 testing
- Generate policies and funding mechanisms to modernize data management systems; support technical capacity for data de-identification and anonymization to help ensure compliance with privacy regulations (e.g., HIPAA) through data-sharing networks
- Support development of community advisory boards and consult community-partnership experts to encourage bidirectional communication; and support platforms and coalitions to embed community perspectives in communication strategies
- Create incentives to advance private and public payment models that include community health workers (CHWs)
- Use real-time, disaggregated data to understand gaps in service delivery and identify context-specific interventions
- Employ bilingual and bicultural staff to deliver care that is culturally and linguistically responsive; engage with local leaders to disseminate information; and respond to health concerns with empathy and cultural humility to build community connection and trust
- Support alternative payment models that embed health equity and support community-based care delivery models

For RADx-UP Projects:

For Providers:

- Expand walk-in/no appointment options; provide vaccination and testing beyond business hours; and partner with community-based organizations (CBOs) to organize events that are tailored to the cultural and linguistic needs of specific communities
- Collaborate with local health departments and CBOs to integrate real-time population-level data and identify communities experiencing vulnerability
- Deliver testing through community-centered delivery models (e.g., mobile testing and vaccine units, community-based primary care sites)
- Use disadvantage indices to generate data to address community-level health disparities; and partner with community health centers to identify communities experiencing higher risk for COVID-19 exposure and adverse outcomes
- Develop data visualizations to uncover trends and disseminate findings to inform decision making related to policies or specific tactics to increase COVID-19 testing; support alignment of data with community goals, including co-development of measures, data collection, and reporting plans
- Generate evidence on the most effective communication strategies to reach different communities; and test messaging with communities for key decisions and policies
- Use NIH funding to support CHW salaries and provide supports to help CHWs find sustainable career opportunities

An abstract graphic at the top of the page featuring a collection of overlapping circles in various colors including red, orange, yellow, green, blue, and purple, set against a light background.

Community-Based COVID-19 Testing: Barriers, Solutions and Next Steps

The COVID-19 pandemic exposed poorer health outcomes in marginalized communities, driven by racism and unequal systems. Marginalized communities are groups and populations who are discriminated against or excluded because of unequal power relationships. These communities include racial/ethnic minorities, children, seniors/elderly, low-income, differently-abled, pregnant, incarcerated, and LGBTQ+ persons. Before the pandemic, unfair policies and unequal access to health care centers, clean air and water, and good schools, in the places where marginalized communities live have limited resources for healthy living. Marginalized communities are more likely to work in jobs labeled “essential,” increasing their risk of exposure to COVID-19 and making it more difficult to get time off in order to access testing. The reality during the pandemic is that marginalized communities have experienced a higher risk of getting COVID-19 and dying from it. They have also experienced greater food, housing, and job difficulty. Marginalized communities have fewer community resources, face more obstacles accessing support and services, and have lower access to protection. Community members are well aware of these realities that they have seen through their own lived experience. Lessons and strategies from the Rapid Acceleration of Diagnostics-Underserved Populations (RADx-UP) initiative, funded by the National Institutes of Health (NIH), have helped overcome unfair policies and improve community health. Team members on each RADx-UP project include academics and local community leaders. These partnerships support the use of community-based

testing approaches in marginalized communities to reduce disparities in testing. This policy paper outlines three learning areas:

- Common barriers that prevent fair access to COVID-19 testing
- Policy solutions to increase access to COVID-19 testing and other services
- Ideas to improve responses during COVID-19 or other public health emergencies

At the Start of the Pandemic

Since the start of the pandemic, it has been difficult for marginalized communities to receive COVID-19 testing and other essential medical services. Marginalized communities are overrepresented in essential jobs, such as grocery store clerks and bus drivers, and often lack paid time off and health insurance. Some common challenges include:

- Difficulty accessing testing due to lack of test site locations, limited hours outside of work hours, and insurance requirements
- Early focus on reaching as many people as possible rather than reaching communities experiencing the greatest social vulnerability
- Inconsistent information about how data would be used and who would access it
- Public health messages that were hard to understand and often only available in English

Policy Areas to Advance Equity

The term “policy” refers to regulations, procedures, or actions which an organization or institution uses to achieve a goal. This paper groups the policies and strategies used by RADx-UP projects and community partners to support community testing into five areas (see [Figure 1](#)):



Access: Improved access decreases the obstacles that stop people from going to COVID-19 testing sites, such as the hours, location, and transportation options



Resource Allocation: Successful public health projects give money and supplies to the people who need it most or who may be left out



Data: Trusted data is needed to support leaders and decision-makers as they try to figure out where to send resources and how to create new policies



Communication and Messaging: Successful public health projects include trustworthy, easy to understand communication and should seek to include community voices in messages through authentic partnership.



Payment: Fairer health outcomes are created when those doing health work outside of hospitals are paid.

Three common strategies or **foundational components** are needed for successful community testing. These foundational components are:



Community Engagement: Community engagement recognizes the importance of the voices of communities. When done right, community engagement can help improve health outcomes and trust in healthcare organizations.



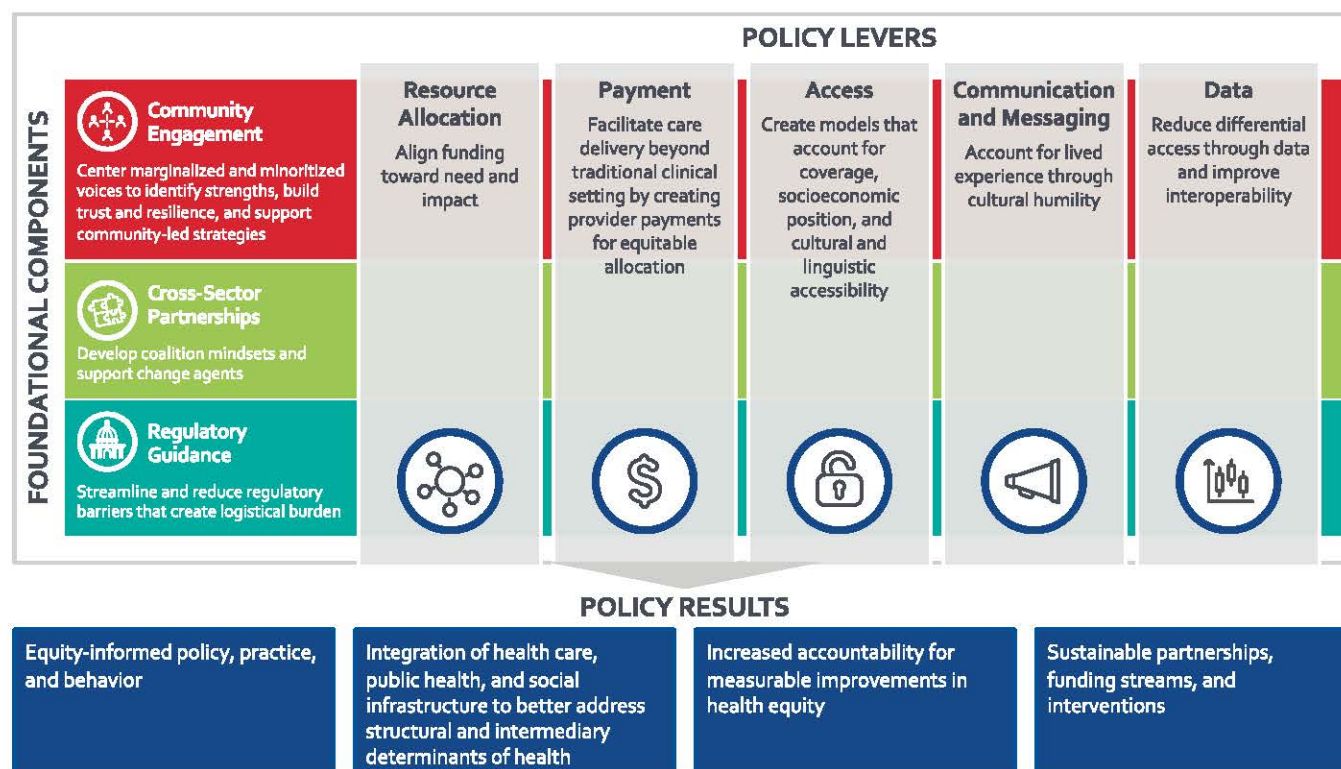
Cross-Sector Partnerships: Projects that bring together community members, healthcare professionals, and researchers are more successful than projects that only include one group.



Regulatory Guidance (laws and protocols): Strategies that make things simple, keep health data safe, and reduce paperwork or repeated work help ensure there is a common standard for people and programs.



Figure 1: Policy Framework for Community-Based COVID-19 Testing



WHAT NEXT?

As we continue living with COVID-19 and face new public health challenges, more work needs to be done in the five areas below. RADx-UP academic and community partnerships can use this plan to guide policy conversations.

- Create healthcare services that are easy to access and appreciate the unique culture and voices of different communities
- Collect and share data to help communities develop projects in areas of most need
- Consider current systems and policies that overlook communities most in need of support and resources
- Ensure public health messages are easy to understand and available in multiple languages and formats
- Create fair payment policies that compensate community leaders and organizations for their time and knowledge

These tips from RADx-UP academic and community partners are intended to support policymakers, community organizations and leaders, and health care professionals as they work to make communities healthier through improved policies and access.



SECTION FOUR

APPENDIX H

Program Evaluation

H1: RADx-UP 2024 Tracking and Evaluation Global Report

H2: RADx-UP Summative Publications Content Analysis Report

RADx-UP Evaluation Report Executive Summary



Evaluation Timeframe: September 2020 – February 2024

Report Date: July 2024

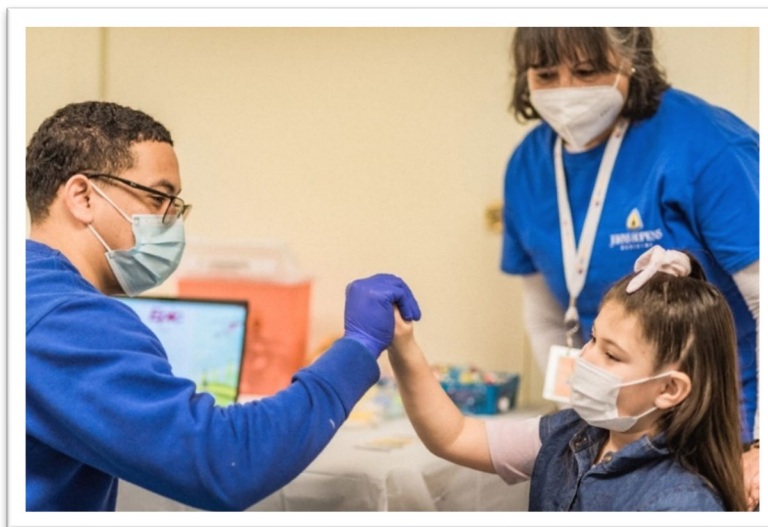
Tracking and Evaluation Team, Abacus Evaluation, University of North Carolina at Chapel Hill

Executive Summary

RADx-UP Program Evaluation Overview

The Rapid Acceleration of Diagnostics-Underserved Populations (RADx-UP) program was launched to improve access to rapid, accurate COVID-19 diagnostics among underserved populations that are disproportionately affected by the coronavirus pandemic across the United States (US).

The RADx-UP program is comprised of a Coordination and Data Collection Center (CDCC) which provides technical support to all the projects within the RADx-UP consortium: [144](#) RADx-UP large award research projects (herein referred to as RADx-UP research projects), [25](#) Rapid Research Pilot Program (RP2) projects (herein referred to as RP2 projects), and [70](#) Community Collaboration Grant (C2G) projects (herein referred to as C2G projects).



The four specific aims of the RADx-UP program, specifically for the CDCC consortium, are to:

- 1) Create a community-centered, flexible program infrastructure
- 2) Support a participatory and inclusive community engagement program
- 3) Support research projects with COVID-19 testing guidance and emerging science.
- 4) Collect, harmonize, integrate, and disseminate data to scientific and local communities.

The comprehensive evaluation plan developed for the RADx-UP program assesses how the CDCC program activities improve the RADx-UP program's effectiveness, performance, and community engagement, helping to understand how the CDCC met its aims. Additionally, the evaluation plan was designed to comprehensively assess the RADx-UP program's projects' (RADx-UP research, RP2 and C2G) implementation processes, outcomes, and impact. The primary purpose of this report is to describe key evaluation findings across the RADx-UP program from launch through February 2024.

Evaluation Methods, Analysis and Components

Supported by guiding frameworks which include the Translational Science Benefits Model (TSBM), the Reach, Effectiveness, Adoption, Implementation, and Maintenance Framework (RE-AIM) and the Social Ecological Model (SEM), the RADx-UP Tracking and Evaluation team used a mixed-methods approach to evaluate the RADx-UP program's processes, outcomes, and impacts through the following evaluation components as described in the table below:

Component	Purpose	Analytical Procedures
RADx-UP Research Project Evaluation		
Publication Tracking	Assess research productivity. Data generated are disseminated on the RADx-UP public website and used for other component analyses.	* Monthly tracking of all RADx-UP-funded research products through surveys and automated database searches. 1,011 products have been tracked through February 2024.
Bibliometric Analysis	Quantitatively assess the scientific impacts of RADx-UP publication and citation data.	Used data from 196 RADx-UP publications tracked through March 31, 2023, to measure publication and citation impacts across diverse project characteristics.
Network Analysis	Identify patterns of scientific collaborations among authors to assess scientific outputs and impacts.	Conducted a network analysis of topic and co-authorship networks from 196 RADx-UP publications tracked through March 31, 2023.
Content Analysis	Identify the key themes emerging from RADx-UP publications.	Through July 2023, reviewers identified study characteristics, translational science benefits of testing and vaccination and thematic categories of impacts across 231 RADx-UP projects' publications.
Project Implementation Survey	Assess the Successes, Challenges, Reach, Collaboration, Impacts, and Sustainability of Project Implementation Activities	Mixed-methods survey was administered to 84 research projects' academic representatives from 2022 to 2023.
Project Interviews		Interviews were conducted with 24 community and academic partners associated with 32 research projects in 2023.
Pandemic Caseload Analysis	Show RADx-UP testing reach impacts among socially vulnerable populations by predicting testing rates during the COVID-19 Delta and Omicron variant caseload surges.	Utilized RADx-UP research projects' COVID-19 tests data (Delta, n= 31 projects; Omicron, n= 37 projects) and publicly available caseload and vaccinations rates data to identify 1) trend/case patterns between COVID-19 testing and positivity counts and 2) significant predictors of COVID-19 cases during variant surges.
Statistical-Spatial Analysis	Assess the benefits of collaborating with community-based organizations for	Utilized RADx-UP Common Data Elements (CDEs) (26 projects; 115,645 tests across 3,223 codes) and Project Implementation Survey data to assess the

	increasing the reach of RADx-UP program testing in underserved areas	benefits of collaborating with community-based organizations for RADx-UP testing reach between communities of high and low social vulnerability index scores.
Agent-Based Modeling	Understand potential impacts of RADx-UP testing reach within communities served	Utilized RADx-UP CDEs across 26 research projects to depict differences in duration of transmission chains among communities with and without RADx-UP testing.
Pilot Projects Evaluation		
C2G Evaluation	Evaluate projects' activities, outcomes, impacts, and use of CDCC support and resources	Repeated cross-sectional design and a mixed methods approach to collect data from bi-annual surveys and 6-months after program close-out interviews from 70 C2G projects.
RP2 Evaluation		Repeated cross-sectional design and a mixed methods approach to collect data from bi-monthly surveys from 25 RP2 projects.
CDCC Evaluation		
CDCC Evaluation	Assess: 1) the efficiency of CDCC processes; 2) the perceived value of their deliverables; and 3) the satisfaction with CDCC service provision to support RADx-UP projects.	Mixed-methods survey sent annually to 29 RADx-UP projects academic representatives in 2023.

Key Findings



Who did the RADx-UP program reach?

- Across the RADx-UP program projects, the **five** most frequently reached populations were **Hispanic/Latino, Black/African American, American Indian/Alaskan Native, Hawaii Pacific Islander, and Asian**.



What community outreach strategies for recruitment and retention did the RADx-UP program use? What were the challenges?

- RADx-UP program projects effectively recruited participants** and promoted COVID-19 awareness using face-to-face recruitment, social media, text messages, and project websites.
- Although projects were ultimately successful in addressing COVID-19 testing and other community needs, some also experienced challenges related to recruitment and retention such as the pool of unvaccinated people to recruit from and participants' struggle to monitor symptoms.



What were the reach and impacts of RADx-UP COVID-19 testing activities?

RADx-UP Projects' Testing Reach and Impacts

- Between June 2020 and November 2023, **446,268** COVID-19 tests were submitted via the NIH RADx-UP Common Data Elements (CDE).

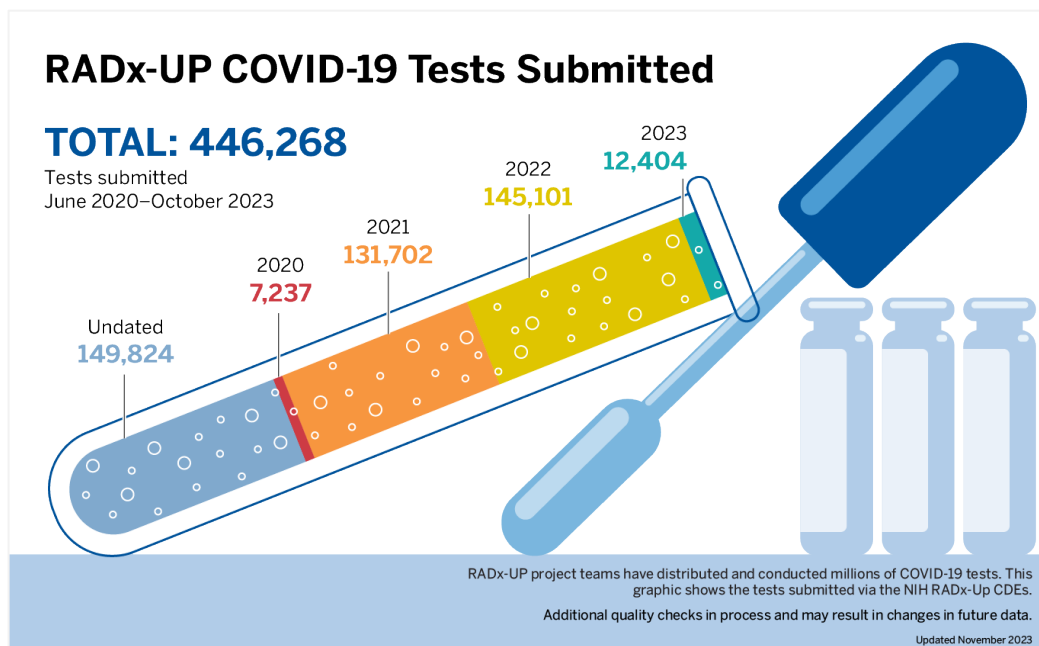
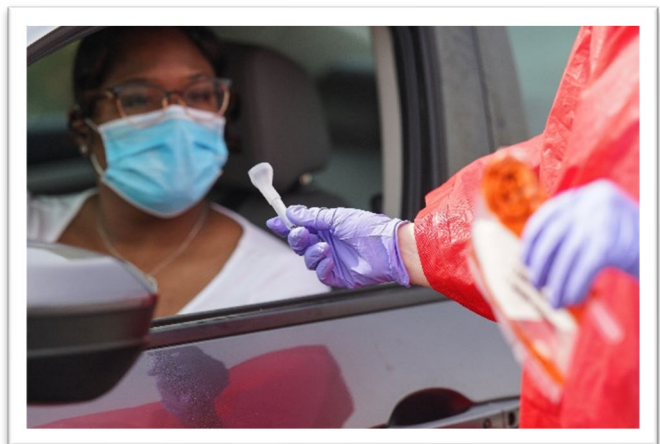


Figure graphic developed and designed by the [RADx-UP CDCC Communications Team for RADx-UP](#)

- More than half of **RADx-UP** research projects ($n=47/82$; **57.5 percent**) reported distributing COVID-19 tests which include on-site testing and/or self-testing kits.
- RADx-UP research projects used a **variety of strategies to improve testing uptake** such as health communication messaging ($n=36/83$; **43 percent**), providing multiple testing locations ($n=25/83$; **30 percent**), employing community health workers (CHW) ($n=24/83$; **29 percent**), and using social media ($n=20/83$; **24 percent**).
- Using **culturally responsive and tailored intervention strategies**, including leveraging community partnerships to deliver intervention, also increased testing uptake ($n=28/83$; **34 percent**).



Statistical Modeling of RADx-UP COVID-19 Testing Reach and Impacts

- **Statistical-spatial analysis** findings indicated that RADx-UP research projects collaborating with community-based organizations (CBOs) to increase participant access to project sites, health care, and/or social services, extended their reach to areas characterized by high social vulnerability index (SVI) scores.
 - Projects in high SVI areas that engaged CBOs distributed a higher number of COVID-19 tests (9.5 times more tests; 73.8 versus 7.8 tests) when compared to those projects in high SVI areas that did not collaborate with CBOs.
 - 73.8 predicted tests in projects engaging with CBOs in high SVI communities compared to 12.1 predicted tests among projects engaging with CBOs in low SVI communities.
- **Pandemic Caseload Analysis** revealed interesting trends in RADx-UP COVID-19 testing, and positive case counts during the Delta and Omicron surge periods. RADx-UP testing rates and positive test cases followed a similar pattern with a peak occurring around the end of August 2021 during the Delta surge and in the middle of January 2022 during the Omicron surge. On occasion when caseloads surged, RADx-UP projects tended to enroll more participants. Projects within the RADx-UP program were able to increase participant enrollment and testing during the Delta and Omicron surges of positive COVID-19 cases.
- **Agent-based Modeling Analysis** highlighted the impact of RADx-UP testing on reducing infection rates across underserved populations. This finding suggests that expanding testing outreach to medium risk communities could significantly reduce infection rates compared to low and high-risk communities. When modeling and comparing the maximum possible infections with and without RADx-UP testing by plotting the Probability Density Function (PDF) of peak infections obtained, with RADx-UP testing, the mean peak infection was estimated to be around 20 people, whereas without RADx-UP testing, the mean peak infection is estimated to be around 90 people. This analysis provided further evidence that RADx-UP testing has played an important role in minimizing infection within targeted communities.



RP2 Testing Reach

- RP2, which funds small, manageable research studies for 12 months, enrolled 4,086 participants.
- RP2 projects used novel strategies and interventions such as software applications, vending machines, and COVID-flu combination testing to reach underserved populations and settings.
- A total of 4,948 COVID-19 tests were administered throughout the program period.

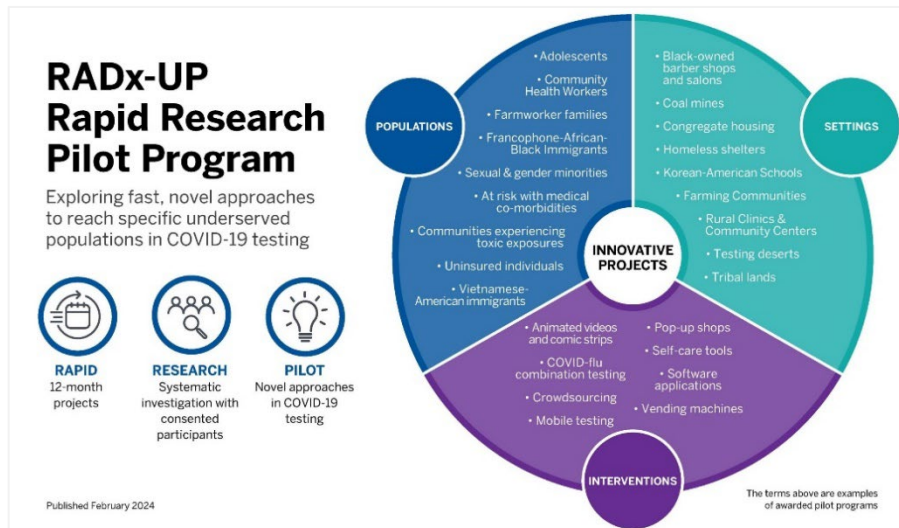


Figure graphic developed and designed by the RADx-UP CDCC Communications Team for the RP2 program

C2G Testing Reach

- C2G provides direct costs to support community partners to help advance capacity, training, support, and community experience with COVID-19 testing initiatives.
- C2G projects testing efforts reached approximately 120,000 people within their communities.
- C2G project activities that increased testing access and uptake included generating communication materials for COVID-19 testing, engaging trusted community members and organizations to facilitate testing, and providing training and education.





How did the RADx-UP program engage and collaborate with communities?

- **Effective Multi-level Partnerships:** Almost two-thirds ($n=52/80$; 65 percent) of RADx-UP research projects formed community-based partnerships to overcome implementation barriers, address recruitment challenges, and build trust within target communities.
 - More than half ($n=19/29$; 66 percent) of **RP2** projects and most ($n=49/55$; 89 percent) **C2G** projects reported partnerships with community-based organizations/non-profit organizations.
 - **Community-based partners actively contributed** to RADx-UP projects' planning and implementation, engaging in outreach, recruitment, retention, study design, data collection, and utilizing findings to enhance project implementation.
- **Active Community Committees:** Community advisory boards ($n=38/83$; 46 percent) played a crucial role in providing guidance on testing strategies and tailoring interventions.



How satisfied were RADx-UP program projects with CDCC services and what are the opportunities for improvement?

Overall, RADx-UP program projects were satisfied with CDCC administrative support and responsiveness.

- **RADx-UP-** most RADx-UP research projects were satisfied with CDCC's staff professionalism ($n=31/35$; 89 percent), helpfulness ($n=30/35$; 86 percent), ease of accessing service support ($n=30/35$; 86 percent), promptness of services ($n=29/35$; 83 percent) and implementation of project feedback ($n=28/35$; 80 percent).
 - Research projects need **more clarity on expectations** for (and changes in) CDCC workstream goals, processes, and services, especially around close-out activities and other end-of-grant support.
- **RP2-** projects were satisfied with CDCC's administrative support with respect to cultural competency and responsiveness, knowledge in resolving project issues, onboarding and training resources, and response time to requests.
 - To reduce challenges because of the short funding period and rapid funding cycles, projects suggested that the NIH and CDCC could **extend grant funding periods** for future pilot programs.



- **C2G-** Overall, 85 percent (n=49/55) of C2G projects reported satisfaction with CDCC administrations' support.
 - Suggested areas to improve CDCC support include simplifying the application process, increasing flexibility in some of the grant requirements, and supporting collaboration among projects.



What were some of the RADx-UP programs' benefits for and impacts on communities?

- **Community and Public Health Benefits:** The RADx-UP program provides testing in underserved communities, particularly valuable during times of strained public health resources. Using community engagement strategies (for example, understanding barriers and facilitators of uptake, using community health workers to deliver culturally tailored telehealth education sessions) helped to increase COVID-19 testing uptake and accessibility among different target communities.
- **Economic Benefits:** Over half (56 percent) of the RADx-UP research projects provided economic benefits, primarily by minimizing test costs (n=38/83; 46 percent), time to complete tests (n=33/83; 40 percent), and time to receive test results (n=28/83; 34 percent).
- **Pandemic Preparedness:** Survey results suggest that many RADx-UP research projects' activities (n=59/82; 72 percent), especially COVID-19 testing (n=43/47; 91 percent), are agile and replicable, contributing to improved pandemic preparedness in underserved communities.



What were the implementation successes achieved by RADx-UP projects?

RADx-UP Projects Increased COVID-19 Testing Uptake

- **Testing Accessibility and Procurement:** Most RADx-UP research projects (n=39/47; 83 percent) indicated success in increasing testing accessibility. Many (n=10/15; 67 percent) that experienced challenges were able to easily connect with the CDCC for support to mitigate procurement challenges.
- **Testing Resources and Promotional Strategies:** RADx-UP research projects most frequently utilized a variety of community-based outreach strategies such as utilizing health communication messaging (n=36/83; 43 percent), providing testing locations (n=25/83; 30

percent), employing community health workers (CHW) (n=24/83; 29 percent), and using social media (n=20/83; 24 percent) to improve testing and vaccination uptake.

- **Culturally Tailored Approaches:** RADx-UP research projects (n=28/83; 34 percent) reported employing culturally responsive strategies as an approach to increase testing uptake, such as hiring staff from the community, providing translation services, and crafting culturally appropriate messaging.

Implementation Successes from RADx-UP Research Project Partnerships

- **Active Community Engagement:** The active involvement of community advisory boards (n=38/83; 46 percent) and steering committees (n=5/83; 6 percent) played a crucial role in providing guidance on testing strategies, tailoring interventions, and facilitating bi-directional learning between academic and community partners.
- **Building Community Capacity:** Community-based partners actively contributed to research projects' planning, implementation, and dissemination of findings. RADx-UP research projects developed research capacity of community-based partners by providing research skills training (n=28/83; 34 percent) and leadership opportunities (n=46/83; 55 percent).
- **Cultural Responsiveness:** RADx-UP research projects demonstrated cultural responsiveness by employing diverse staff (n=49/83; 59 percent), providing training in culturally responsive care (n=37/83; 44.6 percent), and using plain language in research products (n=35/83; 42 percent).
- **Addressing Social Determinants of Health (SDOH) needs:** Beyond COVID-19 interventions, a few research projects' partnership collaborations (n=2) addressed broader social needs, such as cash assistance and food distribution, with many (n=52/80; 65 percent) reporting that they connected participants to healthcare and social services.



What were the implementation challenges faced by projects within the RADx-UP program?

- **COVID-19 Testing Supply and Uptake:** Eighteen (18) RADx-UP research projects faced testing supply issues, staffing challenges, changes/restrictions in FDA and NIH testing guidelines (also experienced by RP2 projects), and difficulties in restocking specific testing kit

brands. Uptake challenges included low attendance at walk-up clinics, minimal engagement in repeat testing, and testing fatigue.

- **Project Administration:** Twenty-eight (28) RADx-UP research projects and some C2G projects described dealing with staff shortages, turnover, limited capacity, and funding.
- **Challenges with Participant Engagement:** Eighteen (18) RADx-UP research projects reported facing recruitment and retention challenges due to waning COVID-19 interest, logistical issues, and staff constraints. Of the 13 RP2 projects that reported challenges, the most common were related to enrollment and testing reporting.
- **Partnership Coordination and Community Capacity:** Eleven (11) RADx-UP research projects described difficulties in coordinating and engaging diverse stakeholders, securing support, and addressing resource constraints. RADx-UP program projects (RADx-UP research, RP2, and C2G) encountered capacity limitations, particularly in engaging partners and community-based organizations.
- **Data-Related:** Thirty-two (32) research projects described challenges with data collection, analysis, and dissemination due to the rapid evolution of the pandemic, COVID-19 fatigue, staffing shortages, and lack of data science expertise.



What types of scholarly and non-scholarly products did the RADx-UP program projects develop?

- **Number of Products:** As of early 2024, T&E tracked 712 RADx-UP program scholarly products (286 publications, 342 conference presentations, 81 extramural grants, 3 intramural grants) and 299 non-scholarly products.
- **Most Disseminated Products:** Most RADx-UP products were conference presentations ($n=342$), followed by non-scholarly products (e.g., websites, blog posts, radio shows, videos, news articles, etc. ($n=299$), and scholarly publications ($n=286$).



- **Comparison across 2021-23** : RADx-UP program scholarly products increased by **52 percent (+94 products)** in 2022 and **18 percent (+32 products)** in 2023 when compared to 2021 (**180 products**).



What did RADx-UP program scholarly collaboration for research dissemination look like?

- As of March 31, 2023, the network analysis of **196** RADx-UP publications which assessed scientific collaboration showed **779** authors grouped into **34** clusters (co-authorship components).
- Consistent with findings in 2022, we observed relatively few scientific collaborations across program projects.
- **Non-academic co-authors** were present in most clusters (**n=27/34; 89 percent**) of the RADx-UP publication network.
- **Community outreach** emerged as the **most central publication topic characteristic** and contributed most to holding the publications network together such that it connected topics that might not otherwise be connected. This highlights the importance of the **space that RADx-UP provided for community-engaged research to thrive**.



How did RADx-UP publications advance knowledge on COVID-19 testing, vaccination, and community-engaged research?

Content Analysis

- **Most common key learning categories** from **231** publications: 1) *social, ethical, and behavioral factors (SEBI) influencing testing* (**n=39**), 2) *vaccination* (**n=48**), and 3) *impacts of collaborative partnerships and community engagement* (**n=44**).
- **SEBI factors influencing testing and vaccination uptake**: Publications reviewed noted disparities in testing and vaccination hesitancy, motivation, access, and uptake exist among diverse underserved populations. Initiatives like in-reach and outreach through clinics, mobile units, reduced-cost/free testing and vaccination, employer-sponsored resources, and at-home testing improved access and uptake to COVID-19 testing and vaccination.

- **Structural Barriers to Testing and Vaccination:** Seventeen (17) publications cited different structural barriers to testing. These barriers include transportation or driving times, location of centers or services, inflexible work schedules, fear of losing employment while getting tested, wait times or scheduling, fear of exposure while waiting to be tested, and the cost of testing. Thirteen (13) publications cited one or more structural barriers to COVID-19 vaccination that were parallel to testing barriers.
- **Impact of Community Engagement and Collaborative Partnerships:** Twenty-five (n=25/44) publications coded under *impacts of collaborative partnerships and community engagement* described these impacts in detail within the following areas:
 - Utilize multi-sector partnerships to implement, adapt, and promote testing or vaccination.
 - Strengthen recruitment and data collection.
 - Improve community capacity for research and community workforce development.
 - Inform health messaging, outreach and dissemination strategies.
 - Use community advisory board and community-based participatory research methods to guide research implementation.
 - Build sustainable trusted relationships within communities.
 - Evaluate the impacts and strengths of community engagement.



What were some of the bibliometric impacts from RADx-UP publications?

- RADx-UP publications (n=196) focused on diverse communities and populations with the three most frequent being Hispanic/Latino (n=46 publications), Black/African American (n=31 publications), and children/adolescents (n=26 publications).
- The bibliometric analysis found a strong research influence of RADx-UP publications.
 - From the Scopus database, 189 articles had 966 citations.
 - Research influence as measured by time- and field- normalized relative citation ratio (RCR) scores indicates that RADx-UP publications had a greater-than-typical citation rate compared to NIH-funded papers in the same field and year.

- Altmetric data such as mentions and citations in news, social media, and policy also showed that RADx-UP program findings from 194 publications translated beyond scholarly audiences.



To what extent will RADx-UP program impacts be sustained?

RADx-UP Research Projects

- More than half of RADx-UP research projects (n=57/82; 70 percent) indicated that their community engagement strategies will continue and almost a third (n=27/82; 33 percent) have secured or will seek additional funding to sustain other project activities and interventions.
- Additionally, some research projects (n=39/57; 68 percent) indicated that priority populations will continue to have access to project-related healthcare and social services.

RP2

- RP2 projects plan to use their project data as evidence to justify feasibility when applying for additional funding.

C2G

- Organizations affiliated with C2G projects reported that they continued COVID-19 testing and education activities including partnerships within their communities.

CDCC

- Through its Sankofa Project Initiative, the CDCC is committed to leaving a rich legacy of data, published articles, resources and toolkits including best practices for community-engaged research.
- To date, the Sankofa Project Taskforce has: 1) engaged the consortium - developing and refining learning categories; defining audiences; and identifying proposed legacy products; 2) created an asset catalog – creating an inventory of all current RADx-UP products (to be updated as products are developed in 2024); and 3) curation of the catalog.
- Future steps include dissemination activities and contextualization of products for future use of products.





Conclusions and Implications

- Across multiple analyses, key evaluation findings show that the RADx-UP program improved COVID-19 testing access and uptake across the US, its territories, and Tribal Nations while strengthening academic and community partnerships for public health programming and research.
- Additionally, the RADx-UP program advanced scientific knowledge about COVID-19 testing and community engaged research while creating a space for collaborative research to thrive. The consortia approach to supporting many projects was largely successful, with most program projects indicating satisfaction or high satisfaction overall with CDCC support and resources.
- Many of the program activities that benefit underserved communities will continue in some capacity after project closeout. Additionally, the knowledge gained from the initiative will be made available to inform future community and public health initiatives further extending the RADx-UP program impact.
- Evaluation findings indicate that the RADx-UP program has made and continues to make significant progress towards achieving its aims to create a flexible infrastructure that is responsive to projects' needs, support a participatory and inclusive community engagement program, disseminate findings to multiple audiences, and contribute to scientific knowledge on COVID-19 testing and community-engaged research.





RADx-UP Publications Summative Content Analysis Report

Insights from Publications in Scholarly Journals

December 2024

Executive Summary

Purpose and Overview of Methods

The Rapid Acceleration of Diagnostics-Underserved Populations (RADx-UP) Tracking and Evaluation (T&E) team uses content analysis to examine outcomes, impacts, and lessons learned from RADx-UP peer-reviewed publications describing their COVID-19 testing and vaccination research. Using a codebook T&E developed for the analysis, independent reviewers individually coded assigned published peer-reviewed publications for study characteristics, translational science benefits, and thematic categories of impact.

This report presents content analysis findings from **334** publications pulled between September 22, 2021 and June 30, 2024 via PubMed and Scopus databases and RADx-UP Project surveys.

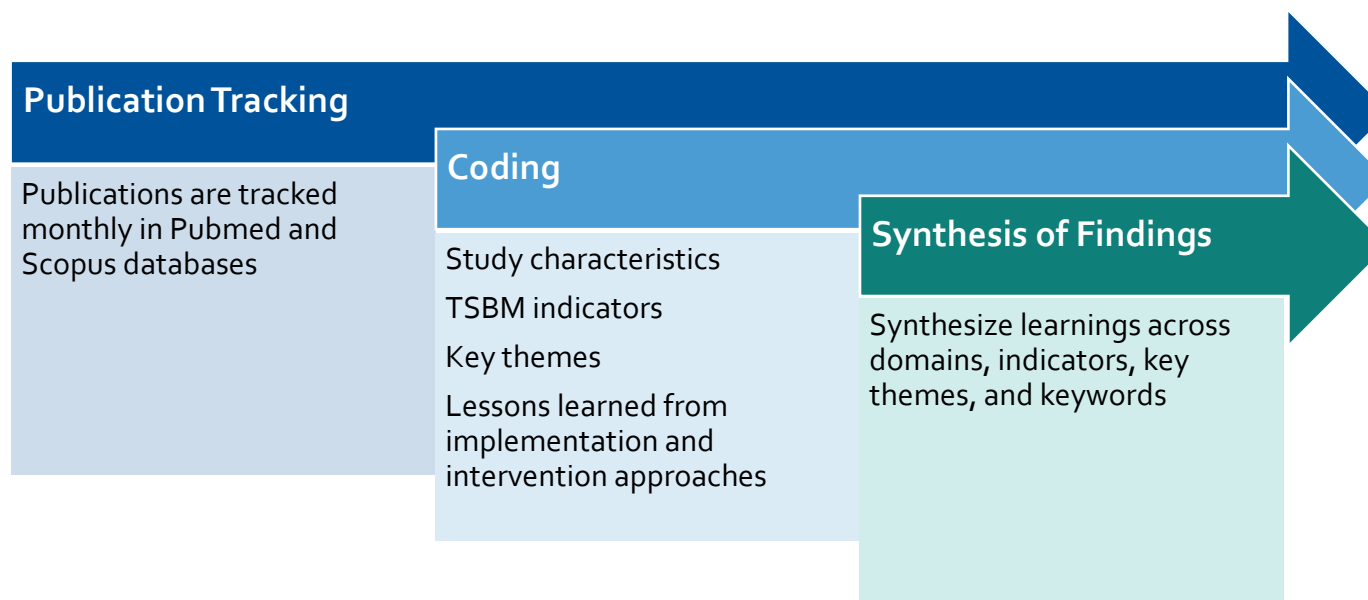


Figure 1. Phases of RADx-UP publication content analysis.

Publication Characteristics

Populations served. Hispanic or Latino populations ($n = 84$ publications), children and adolescents ($n = 64$), and Black and/or African American populations ($n = 63$) were the three most frequently identified underserved priority populations across RADx-UP publications (Figure 2). Publications more frequently pertained to the experiences of urban populations ($n = 66$) compared to rural populations ($n = 34$). Schools were the most frequently reported research setting ($n = 62$) by publication authors, followed by residential care facilities ($n = 22$), community health centers ($n = 22$), in-home ($n = 12$), hospitals ($n = 11$), and prisons or jails ($n = 7$).

Publication methods. Publication authors most frequently reported observational study designs ($n = 169$), with quasi-experimental ($n = 43$), experimental ($n = 23$), and simulation ($n = 3$) designs being employed less frequently. Most publications employed quantitative analysis ($n = 195$), followed in frequency by qualitative analysis ($n = 52$), mixed-methods ($n = 43$), editorial ($n = 18$), literature review ($n = 13$), and clinical case studies ($n = 4$).

A majority (60%) of publications reported at least one community engagement strategy in project activities regarding recruitment, planning, implementation, or dissemination.

Translational Science Benefits Model Impacts

T&E adapted the four domains (clinical, community and public health, policy, and economic) and associated indicators (**Appendix A**) of the Translational Science Benefits Model (TSBM) by [Luke et al. \(2018\)](#) to code articles with translational benefits with respect to COVID-19 testing and vaccination. RADx-UP publication authors reported the community and public health benefits of both testing and vaccination most frequently, compared to the other translational science benefits domains. The three most-reported

Most Frequently-Identified Underserved Populations

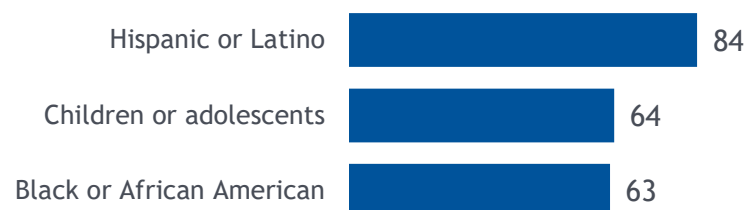


Figure 2. Number of RADx-UP publications ($N = 334$) about the three most-reported underserved populations. Note: A publication can be coded with multiple underserved populations.

Most Frequently-Cited TSBM Benefits Associated with COVID-19 Testing



Figure 3. Number of RADx-UP publications ($N = 334$) with the three most-reported testing benefits from the Translational Science Benefits Model.

indicators of community and public health benefits of testing included testing accessibility ($n = 72$), delivery and uptake of tests ($n = 60$), and community testing services ($n = 59$; Figure 3). Publications indicated projects directly increased access to testing or services that offer tests (e.g., [Hendricks et al., 2023](#); [Whanger et al., 2022](#)) or improved understanding of factors that contribute to improving testing acceptability (e.g., [Marsiglia et al., 2024](#); [Searcy et al., 2023](#)).

For vaccination benefits, understanding vaccine hesitancy was most frequently reported ($n = 73$), followed by delivery and uptake ($n = 50$), then vaccination accessibility ($n = 38$; Figure 4). Publication authors indicated that projects increased vaccination delivery and uptake by addressing the availability and/or distribution of vaccines to underserved communities to promote increased vaccine uptake (e.g., [Mohareb et al., 2024](#); [Bigelow et al., 2022a](#)).

Nine publications included reflections on actual or potential impacts of COVID-19 testing and vaccination policies, with particular emphasis being placed on the role of policy in protecting the health of workers (e.g., [Lee et al., 2022](#); [Syme et al., 2022](#)) and school-aged children (e.g., [Vestal et al., 2023](#); [Kelly et al., 2022](#)).

Most Frequently-Cited Benefits from TSBM Indicators Adapted for RADx-UP

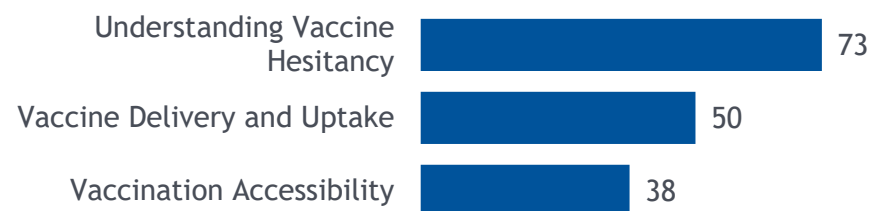


Figure 4. Number of RADx-UP publications ($N = 334$) with the three most-reported vaccination benefits from the Translational Science Benefits Model.

Thematic Categories of Impact

Publications were most frequently categorized as exploring the impacts of collaborative partnerships and community engagement ($n = 79$) or the social and behavioral factors influencing the access and uptake of vaccination ($n = 81$) and/or testing ($n = 73$). The following sections (A-D) detail additional findings.

A. Social, Ethical, and Behavioral Factors Related to Testing and Vaccination

Thirty-one publications noted disparities in testing and vaccination hesitancy, motivation, access, and uptake among diverse underserved populations. Initiatives like in-reach and outreach through clinics, mobile units, reduced-cost/free testing and vaccination, employer-sponsored resources, and at-home testing improved access and uptake to COVID-19 testing and vaccination.

- **Sociodemographic factors.** Race, ethnicity, sex, gender, age, education, employment, socioeconomic status, presence of comorbidities, political affiliation, access to health care, and having been vaccinated against COVID-19 are associated with testing uptake. Black and/or African American, Hispanic or Latino, Asian American, Native Hawaiian, and Pacific Islander populations tend to show greater vaccination hesitancy compared to other racial/ethnic groups. Other individual-level factors, including attitudes, beliefs, motivation, and behaviors, have also been identified as facilitators or barriers to testing uptake and vaccine hesitancy and/or uptake ([Bray et al., 2024](#); [Mast et al., 2023](#); [Buro et al., 2022](#)).
- **Interpersonal and social factors.** Misinformation is identified as a factor that increases testing and vaccination hesitancy. Trusted messengers, especially people within social networks and healthcare providers, are crucial in addressing hesitancy and improving uptake.
- **Environmental, community, and other socio-political factors.** Vulnerable populations may face disparities in testing and vaccination access based on social determinants (e.g., transportation and language barriers). Facilitators at the community, organizational, and governmental levels can improve access, acceptance, and uptake, including in-school testing, syringe exchange programs, and state-run free testing sites.



Participants described everyday social contacts, family, friends, and members of their community as providing critical motivation for becoming vaccinated.

– [Moore et al., 2023](#)

B. Structural Barriers to Testing and Vaccination

Authors of **41** publications reported structural barriers to testing. These barriers include transportation or driving times, location of centers or services, inflexible work schedules, fear of losing employment while getting tested, wait times or scheduling, fear of exposure while waiting to be tested, and the cost of testing (e.g., [Martin et al., 2024a](#); [Whanger et al., 2022](#); [Chamie et al., 2022](#)). [Berkley-Patton et al., 2024](#) designed a COVID-19 testing trial at African American churches; the program aimed to provide free testing during church and ministry activities while providing other outreach services to reduce barriers of time required to access testing and financial barriers.

Twenty-two publications observed or evaluated interventions against at least one structural barrier to COVID-19 vaccination; many barriers to vaccination paralleled aforementioned testing barriers. Frequently-reported barriers to vaccination include

inconvenience of and/or lack of transportation to vaccination locations (e.g., [McClure et al., 2024](#)), unfulfillment of basic needs (e.g., [Valasek et al., 2022](#); [Martin et al., 2024b](#)), and linguistic barriers (e.g., [Marsiglia et al., 2024](#), [Martinez et al., 2022](#)).

C. Impact of Community Engagement and Collaborative Partnerships

Sixty out of the **79** publications coded under 'impacts of collaborative partnerships and community engagement' described these impacts in detail within the following areas:

- **Utilize multi-sector partnerships to implement, adapt, and promote testing/vaccination.** Multi-sector partnerships involving academic partners, community-based organizations, and health departments were developed or leveraged to implement, improve, and adapt research activities to community needs. These partnerships effectively promoted testing and vaccination uptake within underserved communities. Multi-sector partnerships were used to address vaccine hesitancy, adapt intervention strategies to community needs, and reduce infection transmission within schools ([Purvis et al., 2024](#), [Goldman et al., 2023](#); [Gillard et al., 2022](#)).
- **Strengthen recruitment and data collection.** Twelve publications described in detail how their community partnerships helped them identify and recruit eligible participants. Some studies specifically used targeted strategies such as recruiting from existing studies ([Strathdee et al., 2023a](#)) or engaging community health workers ([Barrett et al., 2022](#)), community-based organizations ([Xu et al., 2024](#); [Berkley-Patton et al., 2024](#); [Wang et al., 2023](#); [Barrett et al., 2022](#); [Rodriguez et al., 2022](#)), or trained faith leaders ([Berkley-Patton et al., 2022](#)) to achieve enrollment targets.
- **Improve community capacity for research and community workforce development.** Five publications described how they partnered with community-based organizations to improve community capacity for research by hiring and training trusted members already living within communities to implement research activities ([Begay et al., 2024](#); [Marzan-Rodríguez, 2023](#)).
- **Inform health messaging, outreach, and dissemination strategies.** Twenty-six publications described how community partnerships, trusted leaders, and local networks were used to disseminate culturally appropriate messages and other relevant information within communities. Feedback from these partners ensured culturally appropriate messaging, while investments in social marketing campaigns and multiple dissemination channels promoted testing and vaccination ([Berkley-Patton et al., 2024](#); [Meekers et al., 2024](#); [Dillard et al., 2022](#)).
- **Use community advisory boards and community-based participatory research to guide research implementation.** Eighteen publications employed a community-based participatory approach and developed community-based testing strategies (e.g., [D'Agostino et al., 2024](#); [Haroz et al., 2022](#)). Additionally, ten publications established or utilized community

advisory boards (CABs) to provide guidance on culturally appropriate study materials, address community priorities, discuss testing barriers and facilitators, and provide feedback on outreach strategies (e.g., [Bateman et al., 2024](#); [Strathdee et al., 2023a](#)).

- **Build sustainable trusted relationships within communities.** Ten publications emphasized the importance of building trusted partnerships by engaging partners with relevant lived experience or language skills, while another publication highlighted the role of serving as a COVID-19 information resource in establishing trust within underserved communities ([McClure et al. 2024](#); [Budd et al., 2022](#)).
- **Evaluate the impacts and strengths of community engagement.** Twelve publications evaluated community engagement strategies. For example, [Barrett et al. \(2022\)](#) highlighted the effectiveness of partnerships with community-based organizations in recruiting and retaining Black and Latino residents. [Stadnick et al. \(2022a\)](#) estimated the time commitment differences across phases of community engagement activities, showing that more time is spent during project startup and recruitment compared to the maintenance phase, and assessing CAB member engagement satisfaction and activities associated with a co-designed COVID-19 testing program in San Diego. [Maras et al. \(2024\)](#) evaluated community partnerships and identified two key results: 1) trust and relationship as foundational pieces of community engagement; 2) importance of implementing and adapting community-informed research strategies.

D. Lessons Learned from Implementation and Intervention Strategies

Intervention Implementation Successes

- **Community-driven partnerships and collaborations.** Positive outcomes in RADx-UP projects are attributed to robust community-academic partnerships (e.g., [Strathdee et al., 2023](#)), which enhanced research capacity and improving research design skills (e.g., [Ko et al., 2022](#)). Stakeholder involvement in intervention development resulted in more community-relevant findings and bidirectional learning (e.g., [Garibay et al., 2024](#)). Sustainable outcomes from community partnerships include community members becoming investigators and systemic changes,



The community partners stressed the benefits of honoring and creating a bilingual space. This theme highlights the importance of having a community and academic partner open to collaboration and can dedicate the staff, time, and financial resources to conducting bilingual activities.

– [Garibay et al., 2024](#)

such as integrating youth entrepreneurship education into high school curriculums ([Ko et al., 2022](#)).

- **Culturally tailored outreach and intervention strategies.** Tailored intervention strategies, including engaging trusted peers and culturally specific outreach, improved vaccination and testing accessibility and uptake (e.g., [Compton et al., 2024](#); [Garibay et al., 2024](#); [Dillard et al., 2022](#)). Peer-led intervention sessions significantly increased testing rates and culturally tailored approaches resulted in higher testing numbers among specific communities (e.g., [Bazzi et al., 2023](#); [Strathdee et al., 2023a](#)). Multiple media and outreach strategies, such as flyers, radio announcements, and social media, were effective in promoting interventions and recruiting participants ([Budd et al., 2022](#)).
- **Evidence-based intervention design and implementation approaches.** Publications described interventions grounded in evidence-based behavioral and implementation science theories (e.g., [Bazzi et al., 2023](#); [Strathdee et al., 2023a](#)), addressing knowledge gaps and attitudinal barriers. Community-based participatory research principles guided intervention design, implementation, and community outreach, allowing flexibility and cultural tailoring (e.g., [Begay et al., 2024](#); [Dillard et al., 2022](#)). Adaptive approaches were used to optimize interventions based on ongoing feedback (e.g., [Windsor et al., 2022](#)).

Intervention Implementation Challenges

- **Community-academic partnership and engagement challenges.** Community-engaged research is acknowledged as transactional, demanding significant time, dedication, and patience. Challenges include difficulties in maintaining and strengthening community partnerships beyond the study duration and administrative obstacles, such as institutional review board (IRB) delays, affecting partner relationships.
- **Resource limitations.** RADx-UP publications highlighted resource limitations, such as time demands, funding constraints, and staffing shortages, for community-engaged research. Fast-paced project timelines, staff shortages, and regulatory hurdles affected intervention implementation and vaccination uptake.
- **Limitations of study implementation design.** Complexities of implementing randomized controlled trials in real-world settings are evident, with challenges such as ethical concerns, objections to randomization, and the need for responsiveness to establish trust. Implementing study design activities that rely on virtual communication channels may have introduced selection bias and excluded community members without internet access. Also, self-reporting for vaccine uptake behaviors could have introduced reporting bias.
- **Sampling, selection bias, and methodological limitations.** Despite multiple engagement strategies, publications identified trade-offs and limitations of sample size and representativeness. Specifically, a small sample size may limit the

ability to detect significant changes and recruiting from a specific target population may restrict the applicability of findings to the broader population or underrepresented groups.

Implications and Recommendations for Future Research

- **Need for rigorous studies.** RADx-UP projects emphasize the need for more rigorous comparative, longitudinal, and experimental studies to understand barriers and facilitators to successful implementation.
- **Prioritizing funding and addressing health disparities.** Future research should prioritize funding for community-engaged interventions beyond COVID-19 testing and vaccination to address health disparities in underserved populations.
- **Adaptability and flexibility in research.** Continuous adaptation of interventions, especially in response to SARS-CoV-2 variants and community priorities, is crucial for future research. Adopting flexible study designs aligned with community values and ethical considerations are emphasized for impactful health equity research interventions.
- **Building sustainable community-research partnerships.** Sustained community engagement is essential, and establishing mechanisms for ongoing feedback from community partners ensures interventions remain relevant and effective over time.



SECTION FOUR

APPENDIX I

Positioned for Sustainability

I1: A Strategic Roadmap: Advancing Health Equity through Community-engaged Research

I2: Strategic Roadmap Process

Advancing Health Equity through Community-engaged Research

The RADx-UP Coordination and Data Collection Center (CDCC) asked members of the RADx-UP consortium how we can expand the communityengaged work of the RADx-UP program to address health disparities research in the U.S. beyond the COVID-19 pandemic.

More than 100 members of the consortium shared valuable insights and experiences that inform the following strategic directions and themes.

Direction A.

Disrupt the research paradigm to ensure that the communities most impacted are able to drive the research

Goal

We will work to upend the research paradigm to ensure that the community is a trusted and equal partner at every point of the research process.

Why

Community-engaged research is often conducted with the intention of including community representation in the process, but power remains with the researchers as the ones asking the questions, analyzing the meaning of data, and disseminating findings.

How

A1. Develop inclusive, trustworthy research teams that center the perspectives of communities

Our strategy is to ensure that research teams include community members with a range of experiences, and that community voices influence and steer the research cycle. We intend to demonstrate our trustworthiness and will develop stronger solutions through better representation of the communities with whom we partner for research.

A2. Redesign the research ecosystem to shift resources, process and power toward communities

Our strategy is to create a new paradigm for research development. This includes embracing flexible, action oriented approaches that respect the expertise of the communities impacted by health inequities.

A3: Change the rules and incentives of academia to reward and value community-based research

The current models for professional advancement as an academic researcher seldom incentivize community driven research. Our strategy is to invest in, and advocate for, academic rewards that encourage and value community partnerships and community-based research activities.

Direction B.

Develop a sustainable, accessible, research-ready infrastructure to enable rapid response to emerging needs

Goal

We will build relationships of mutual understanding between communities and academic researchers before the need for research arises.

We will establish integrated data systems, refine our approaches to sharing results, and invest in research supports (e.g., staff, systems, and training) that last beyond single projects.

Why

The research ecosystem must support the ability of community members and researchers to immediately and effectively collaborate, lead, and participate in research whenever it is needed.

How

B4: Create and institutionalize opportunities for bidirectional learning, co-learning, and connection between academic researchers and community members

Our strategy is to intentionally create meaningful, equitable relationships between academic researchers and community members. We seek to build trust and facilitate understanding of each other's needs in order to enable more effective responses to the next research opportunities. This work must include intentionally building a stronger pipeline for new talent in the field of research.

B5: Create a transparent, accessible and compatible data system, and invest in training and infrastructure to ensure its sustainability

Our strategy is to develop standards and systems that ensure integrated and accessible data across research projects. We will build capacity around data systems at the community level through investments in infrastructure, staff, tools, and training.

B6: Support knowledge sharing in a way that is clear, accessible, and actionable for communities

Our strategy is to create a more robust system for disseminating research findings throughout communities in meaningful ways. This means shifting expectations for how findings are documented and shared, to include immediately usable information and more diversified outlets.

B7: Fund and improve sustained infrastructure to support the longevity of community-driven research

Our strategy is to invest in staffing, training, communication tools, data systems, and other key research supports that will last beyond single research projects. Because this infrastructure will not have to be rebuilt with each new effort, we can build on prior learnings and respond to emerging research opportunities more quickly.

Direction C.

Leverage RADx UP influence to cultivate funding mechanisms (within and beyond NIH) that respect community needs and voices

Goal

We will encourage grants with realistic timeframes and adequate funds to enable the work that will be necessary at the community level for success and impact.

We will leverage the influence of the RADx-UP program to advocate for and develop more responsive planning and design processes and more comprehensive funding mechanisms, which may include diversifying our funding sources beyond the NIH.

Why

Funding structures need to embrace a more holistic perspective that sees communities as essential partners – not just in execution but also in planning and design.

How

C8: Advocate for a redesign of funding mechanisms to be more responsive to community needs

Our strategy is to leverage our strength as an academic community partnership to encourage adjustments to current funding mechanisms that will better accommodate the challenges and constraints faced by community partners. This will allow for creativity, flexibility and human engagement that existing systems and structures inhibit.

C9: Expand capacity-building opportunities and resources available to communities

Our strategy is to broaden funding parameters in order to provide resources directly to communities to strengthen their community-engaged research infrastructure. We will train and retain the people beyond specific research projects.

C10: Cultivate new funding streams for community driven health disparities research

Our strategy is to identify, engage, or develop a wider range of funding sources that allow for greater flexibility and sustainability.

Direction D.

Bridge research and policy to drive systemic change toward health equity

Goal

We will ensure that our research is positioned to help shape the policies that shape health outcomes. This means ensuring our data is meaningful and usable and strengthening relationships with policymakers who can help interpret and champion it.

Why

Ultimately, this work needs to impact the way that people receive health care and it must contribute to greater equity in health outcomes overall.

How

D11: Strengthen integration between policy and community-driven research

Our strategy is to plan ahead to ensure that research findings are useful and usable by decision makers and to build the relationships needed to carry this strategy forward.

D12: Make health care accessible, culturally competent, and driven by community needs

Our strategy is to advocate for more affordable, patient centered health care and health information, as well as funding of services that contribute to positive health outcomes. We will ensure that care gets to patients in the way they need. We cannot do this alone; we intend to partner with those who can.

Strategic Roadmap Development & Discussion

Micky Cohen Wolkowicz
Kathleen Brandert
Kim Howe



Why we initiated a strategic road mapping process

- RADx-UP exists to understand and alleviate the barriers to COVID-19 testing across the nation.
- The nation's focus has been moving from COVID-19 testing to vaccine uptake, safety surveillance, long-term outcomes, and **preparedness for the next public health threat**.
- We believe there is **enormous future potential** for the research-ready infrastructure and community partnerships in the RADx-UP consortium.
- So, we engaged RADx-UP projects, community partners, and other stakeholders in a series of **visioning and strategic thinking sessions** to help set a roadmap for the future.

Visualizing the Strategic Planning Process



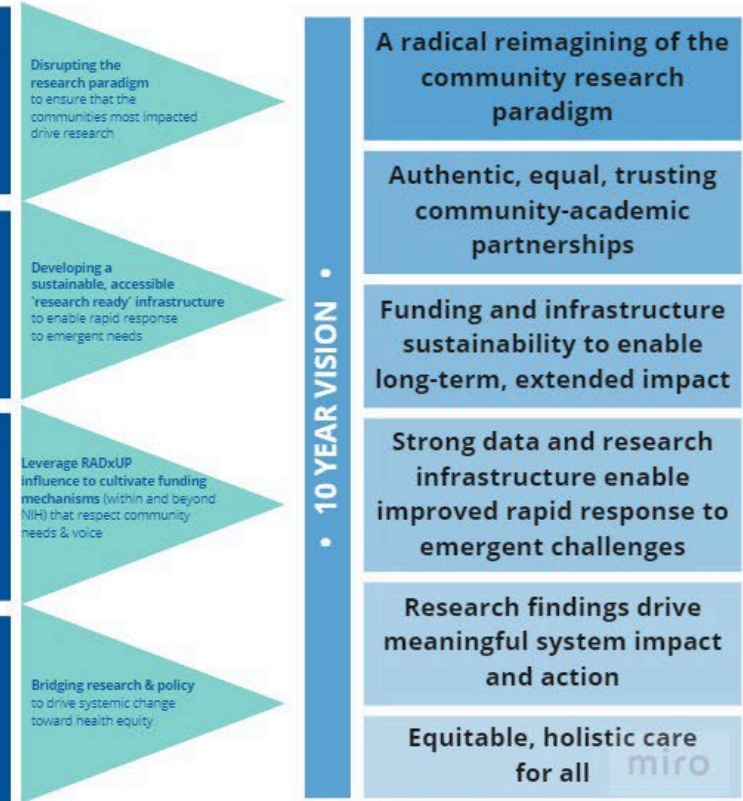
What we will do to build on the research infrastructure, partnerships, and best practices developed in the RADx-UP program to address health disparities in the US over the next 10 years (both COVID-19 and beyond)?

How will we nurture and evolve the national infrastructure and community-academic partnerships we've created?

What will we do as a program to enhance our ability to deliver community-engaged research?

How will we move evidence to action that advances health equity?

How will we create a system that is "research ready" to alleviate health disparities? To address the next public health crisis? To respond to research questions arising from communities?



5 Starting Questions...



What we will do to build on the research infrastructure, partnerships, and best practices developed in the RADx-UP program to address health disparities in the US over the next 10 years (both COVID-19 and beyond)?

How will we nurture and evolve the national infrastructure and community-academic partnerships we've created?

What will we do as a program to enhance our ability to deliver community-engaged research?

How will we move evidence to action that advances health equity?

How will we create a system that is "research ready" to alleviate health disparities? To address the next public health crisis? To respond to research questions arising from communities?

What will we do to build on the research infrastructure, partnerships, and best practices developed in the RADx- UP program to address health disparities in the US over the next 10 years (both COVID-19 and beyond)?

- How will we nurture and evolve the national infrastructure and community- academic partnerships we've created?
- What will we do as a program to enhance our ability to deliver community- engaged research?
- How will we move evidence to action that advances health equity?
- How will we create a system that is "research ready" to alleviate health disparities? To address the next public health crisis? To respond to research questions arising from communities?



A 10-year Vision

• 10 YEAR VISION •

A radical reimagining of the community research paradigm

Authentic, equal, trusting community-academic partnerships

Funding and infrastructure sustainability to enable long-term, extended impact

Strong data and research infrastructure enable improved rapid response to emergent challenges

Research findings drive meaningful system impact and action

Equitable, holistic care for all

- A radical reimagining of the community research paradigm
- Authentic, equal, trusting community- academic partnerships
- Funding and infrastructure sustainability to enable long-term, extended impact
- Strong data and research infrastructure enable improved rapid response to emergent challenges
- Research findings drive meaningful system impact and action
- Equitable, holistic care for all

12 Strategies Identified to Achieve the Vision

Strategy 3: Change the rules and incentives of academia to reward and value community-based research

Change the rules of academia to reward and value community-based research

Strategy 2: Redesign the research ecosystem to shift resources, process and power toward communities

Reexamine the burden of dissemination and implementation research
Shift focus from a goal of dissemination to a goal of engagement
Reduce research process barriers to community-based research
Invest in more nimble, community-engaged processes
Build community-based research infrastructure that is sustainable and relevant to the community
Prioritize the process of a community-based research partnership

Strategy 1: Develop inclusive, trustworthy research teams that center the perspectives of communities

Build trust with the community through real representation
Secure people who are outside mainstream systems in a bidirectional way
Recruit community members to research teams to address research potential solutions

Disrupting the research paradigm to ensure that the communities most impacted drive research

Strategy 7: Fund and improve sustained infrastructure to support the longevity of community-driven research

Communicate our vision and frame the value proposition
Secure the partnership, particularly through sustained academic or community-based policy funding
Establish a centralized, national data + research system for all RADxUP projects
Communicate the benefits and relevance of research

Strategy 6: Support knowledge sharing in a way that is clear, accessible, and actionable for communities

Ensure the conditions are in place for meaningful partnership
Build an already existing community infrastructure and network
Embed an adaptive learning cycle to detect existing systems
Improve and fund infrastructure (not just project specific)

Strategy 5: Create a transparent, accessible, and compatible data system, and invest in training and infrastructure to ensure its sustainability

Enable exchange through data standards driven by community needs
Create networks of community researchers to build and support projects, mentorship/jointly developed infrastructure
Build capacity to share data through easily accessible data systems
Enable data to work for us

Strategy 4: Create and institutionalize opportunities for bi-directional learning, co-learning, and connection between academic researchers and community members

Prioritize active learning + mutual education of stakeholders (community and academic researchers)
Build capacity of CBOs through training to quickly respond to urgent challenges + opportunities
Build empathy and develop action-oriented researchers

Developing a sustainable, accessible 'research ready' infrastructure to enable rapid response to emergent needs

Strategy 10: Cultivate new funding streams for community-driven health disparities research

Pursue a diverse portfolio of funding (beyond NIH)
Identify new, sustainable funding models beyond the traditional NIH approach

Strategy 9: Expand capacity building opportunities and resources available to communities

Engage in evidence-based research to support marginalized communities
Support communities with resources
Award grants to community rather than academic institutions
Expand funding opportunities to more diverse institutions and researchers
Ensure adequate resourcing of CBOs and partners included in all grants

Strategy 8: Advocate for a redesign of funding mechanisms to be more responsive to community needs

Identify the need for funding mechanisms to support community-driven research
Build capacity to develop evidence-based research to inform policy change

Leverage RADxUP influence to cultivate funding mechanisms (within and beyond NIH) that respect community needs & voice

Strategy 12: Make health care accessible, culturally competent, and driven by community needs

Advocate for and fund social determinants of health
Reach people in the way they need
Bring healthcare TO the patient in a culturally responsive manner

Strategy 11: Strengthen integration between policy and community-driven research

Strengthen integration between policy and research
Advocate for high level federal policy change
Engage policymakers as partners
Create a bridge from community research to policy change to drive change in health care system
Build relationships with elected officials and state legislators to address health disparities

Bridging research & policy to drive systemic change toward health equity

Over the next 8-10 years, we will work on...

Disrupting the research paradigm to ensure the communities most impacted drive research

Community-engaged research is often conducted with the intention of including community representation in the process, but power remains with the researchers as the ones asking the questions, analyzing the meaning of data, and disseminating findings.

We will work to upend that research paradigm to ensure that the community is a trusted and equal partner at every point of the research process.

As part of this, we intend to...

- ❖ Develop inclusive, trustworthy research teams that center the perspectives of communities
- ❖ Redesign the research ecosystem to shift resources, process, and power toward communities
- ❖ Change the rules and incentives of academia to reward and value community-based research

Over the next 8-10 years, we will work on...

Developing a sustainable, accessible, research-ready infrastructure to enable rapid response to emerging needs

The research ecosystem must support the ability of community members and researchers to immediately and effectively collaborate, lead and participate in research whenever it is needed.

We will build relationships of mutual understanding between communities and academic researchers before the need for research arises, and we will establish integrated data systems, refine our approaches to sharing results, and invest in research supports such as staff, systems, and training that last beyond single projects.

As part of this, we intend to...

- ❖ Create and institutionalize opportunities for bi-directional learning, co-learning, and connection between academic researchers and community members.
- ❖ Create a transparent, accessible, and compatible data system, and invest in training and infrastructure to ensure its sustainability
- ❖ Support knowledge sharing in a way that is clear, accessible, and actionable for communities
- ❖ Fund and improve sustained infrastructure to support the longevity of community-driven research

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Leverage RADx-UP influence to cultivate funding mechanisms (within and beyond NIH) that respect community needs & voice

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- ❖ Cultivate new funding streams for community-driven health disparities research

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Bridging research and policy to drive systemic change toward health equity

We will ensure that our research is positioned to help shape the policies that shape health outcomes. This means ensuring our data is meaningful and usable and strengthening relationships with policymakers who can help interpret and champion it.

Ultimately, this work needs to impact the way that people receive health care and it must contribute to greater equity in health outcomes overall.

As part of this, we intend to...

- ❖ Strengthen integration between policy and community-driven research
- ❖ Make health care accessible, culturally competent, and driven by community needs

4 Directions • 12 Strategic Themes • 45 Strategies • 200+ Tactics

Over the next 8-10 years, we will advance the following directives:	As part of this, we intend to...
Direction A: Disrupt the research paradigm to ensure the communities most impacted drive research	Strategy 1: Develop inclusive, trustworthy research teams that center the perspectives of communities
	Strategy 2: Redesign the research ecosystem to shift resources, <u>process</u> and power toward communities
	Strategy 3: Change the rules and incentives of academia to reward and value community-based research
Direction B: Develop a sustainable, accessible, research-ready infrastructure to enable rapid response to emerging needs	Strategy 4: Create and institutionalize opportunities for bi-directional learning, co-learning, and connection between academic researchers and community members.
	Strategy 5: Create a transparent, accessible, and compatible data system, and invest in training and infrastructure to ensure its sustainability
	Strategy 6: Support knowledge sharing in a way that is clear, accessible, and actionable for communities
	Strategy 7: Fund and improve sustained infrastructure to support the longevity of community-driven research
Direction C: Leverage <u>RADx-UP</u> influence to cultivate funding mechanisms (within and beyond NIH) that respect community needs and voices	Strategy 8: Advocate for a redesign of funding mechanisms to be more responsive to community needs
	Strategy 9: Expand capacity building opportunities and resources available to communities
	Strategy 10: Cultivate new funding streams for community-driven health disparities research
Direction D: Bridge research and policy to drive systemic change toward health equity	Strategy 11: Strengthen integration between policy and community-driven research
	Strategy 12: Make health care accessible, culturally competent, and driven by community needs



SECTION FOUR

APPENDIX J

How to Share the Playbook

J1: Outreach Flyers

ENGAGEMENT FOUNDATIONS & BEST PRACTICES



Who? Audience: public health agencies, CBOs, nonprofits



Why? Meaningful involvement builds equity, resilience

Effective community engagement fosters trust, ensures inclusivity, and leads to sustainable, community-driven solutions. Equitable engagement requires listening, collaboration, and shared decision making.



How? Key principles of authentic engagement

Trust-Building

Engage early, consistently, and transparently to establish credibility.

Equity-Centered Outreach

Recognize and address systemic barriers to participation.

Cultural Humility

Value lived experiences and co-create solutions with the community.

Accessibility & Inclusion

Ensure materials and meetings are accessible (language, format, location).



What? Strategies for success:

Meet Communities Where They Are

Host events in familiar spaces such as churches, libraries, or community centers.

Use Asset-Based Approaches

Recognize and uplift existing community strengths rather than focusing solely on deficits.

Engage Beyond Surveys

Utilize focus groups, listening sessions, and participatory decision-making.

Use the playbook to further develop best practices and engagement strategies and examples.



FOR A DEEPER DIVE

- **Chapter 5:** [Best Practices for Conducting Community Engaged Research](#)
- **Chapter 2:** [Strengthening Partnerships to Reach Communities](#)



ACTION STEPS

- Identify key stakeholders and trusted community leaders.
- Develop engagement activities that prioritize two-way communication.
- Use a trauma-informed approach to acknowledge past harms and build trust.

TAILORING OUTREACH FOR DIFFERENT STAKEHOLDERS



Who? Audience: local and state government, policymakers, funders



Why? Customizing engagement matters

Different stakeholders have different priorities, communication styles, and levels of influence. Tailoring outreach ensures messages resonate and drive action.

Key considerations for tailored outreach

Understand Audience Priorities

Align engagement approaches with stakeholder interests.

Cultural Competency

Adapt materials and language to be inclusive and accessible.

Power Dynamics Awareness

Ensure communities have meaningful roles in decision-making.



What? Outreach Strategies by Stakeholder Type

Policymakers & Government Agencies

- Present data-driven narratives with personal stories for impact.
- Engage through advisory boards and legislative roundtables.

Funders & Philanthropic Organizations

- Showcase measurable impact and community success stories.
- Invite funders to community-led events to witness engagement firsthand.

Business & Private Sector

- Highlight economic benefits of equity-focused policies.
- Foster corporate-community partnerships that align with CSR goals.



FOR A DEEPER DIVE

- **Chapter 1:** [Establishing & Mobilizing an Effective Community-Engaged Program](#)
- **Chapter 7:** [Policy and Practice](#)



ACTION STEPS

- Map stakeholders and tailor messaging accordingly
- Use storytelling to humanize data and research

BUILDING & SUSTAINING COMMUNITY PARTNERSHIPS



Who? Audience:
Healthcare
Organizations,
Advocacy
Groups, Research
Institutions



Why? Long-Term
Partnerships
Matter

Sustainable partnerships create lasting impact, ensuring that engagement is not transactional but transformative.



How? Key Elements of Strong Partnerships

Reciprocity

Partnerships should benefit both the community and the organization.

Shared Leadership

Community partners should have a seat at decision-making tables.

Transparency

Clearly define roles, expectations, and long-term commitments.

Best Practices for Establishing Partnerships

Co-Design Programs

Work with—not for—communities to shape initiatives.

Invest in Relationship-Building

Engage outside of project cycles to foster trust.

Compensate Community Partners

Value their expertise and time.



FOR A DEEPER DIVE

• **Chapter 2:**
[Strengthening Partnerships to Reach Communities](#)

• **Chapter 5:**
[Best Practices for Conducting Community Engaged Research](#)

• **Chapter 9:**
[Positioned for Sustainability](#)



ACTION STEPS

• Identify shared goals and co-create initiatives

• Develop a memorandum of understanding (MOU) outlining partnership terms.

• Build feedback loops to refine and improve collaboration

EFFECTIVE COMMUNICATION & MESSAGING STRATEGIES



Who? Audience:
Communications
Teams, Media,
Social Impact
Groups



Why? Clear Messaging is Essential

Compelling, culturally relevant communication ensures messages resonate with diverse audiences and inspire action.

Key Principles for Effective Messaging

Clarity & Simplicity

Avoid jargon; use language that is accessible and relatable.

Cultural Relevance

Adapt messaging to reflect community values and experiences.

Authenticity & Trust

Center community voices and real-life stories.

Communication Strategies

Storytelling for Impact

Use personal narratives to humanize data.

Multilingual & Multimedia Messaging

Adapt materials to various languages and formats.

Two-Way Communication

Encourage dialogue rather than one-way messaging.

ACTION STEPS

- Identify key messages and tailor them to audience needs
- Use social media and multimedia formats to enhance reach
- Leverage community influencers and trusted messengers
- See chapter 6: Sharing Information and Communicating Clearly

EVALUATION & IMPACT MEASUREMENT



Who? Audience:
Program
Managers, Grant
Administrators,
Funders



Why? Measuring Engagement Matters

Tracking engagement effectiveness helps improve strategies, secure funding, and demonstrate impact.

Key Metrics for Success

Process Metrics

Number of participants, meeting attendance, engagement activities.

Outcome Metrics

Behavior change, policy shifts, increased community trust.

Equity Indicators

Representation of marginalized voices in decision-making.

Evaluation Methods

Qualitative Approaches

Conduct focus groups, interviews, and case studies.

Quantitative Data

Track survey responses, participation rates, and engagement levels.

Community-Led Assessment

Involve community members in defining success metrics.

ACTION STEPS

- Define clear goals and success indicators.
- Utilize both qualitative and quantitative evaluation tools.
- Share findings with stakeholders and adapt strategies accordingly.
- See chapter 8: Program Evaluation, see chapter 9: Positioned for Sustainability