

RADx-UP POLICY BRIEF:

Opportunities to Enhance Health Equity by Integrating Community Health Workers into Payment and Care Delivery Reforms



AUTHORS

Kamaria Kaalund, BA

Policy Analyst, Health Equity
Duke-Margolis Center for Health Policy

Ethan Phillips, BSPH

Research Assistant
UNC Center for Health Equity Research

Brandy Farrar, PhD, MS

Managing Director, Health Division
American Institutes for Research

Krista Perreira, PhD, MSPH

Professor, Social Medicine
UNC School of Medicine

Monica Taylor, PhD, MPH

Research Scientist
UNC Center for Health Equity Research

Magdalene Wellman, MPH, CHES

RADx-UP Program Manager (formerly)
Community – Campus Partnerships for Health

Gaurav Dave, MD, DrPH, MPH

Co-Director
UNC Center for Health Equity Research

Warren Kibbe, PhD, FACMI

Chief of Translational Biomedical Informatics
Duke Department of Biostatistics and Bioinformatics

Michael Cohen-Wolkowicz, MD, PhD

Head of Pediatric Research
Duke Clinical Research Institute

Andrea Thoumi, MPP, MSc

Health Equity Policy Fellow
Duke-Margolis Center for Health Policy

FUNDING

This study was funded by the NIH RADx® Underserved Populations (RADx-UP) Initiative (U24 MD016258)

ACKNOWLEDGMENTS

The authors thank members of the leadership team of the RADx-UP Coordination and Data Collection Center (CDCC) led by the Duke Clinical Research Institute (DCRI) and the UNC Center for Health Equity Research (CHER) for their thought leadership and guidance during the development of the paper. We thank the following colleagues at DCRI and Duke-Margolis Center for Health Policy (Duke-Margolis) for their review: Crystal Cannon, MA, MPH; Mark McClellan, PhD, MD; Robert Saunders, PhD; and Yolande Pokam Tchuisseu, MSc. In addition, we are grateful to the contributors across the RADx-UP consortium, including the Community Engagement Core, who provided feedback and insights during internal meetings, webinar presentations, and discussions of this work. We also thank members of the communications teams within RADx-UP and Duke-Margolis including Mary Lindsley, MA; Jeannine Sato, MA; Luke Durocher, BA; and Patricia Green, MA for their review, design conceptualization, and dissemination of this publication and the accompanying graphics. Lastly, we thank the National Institutes of Health (NIH) for their generous support for work on community-based care delivery and equity, including this publication. The contents of this publication are solely the responsibility of the authors and do not necessarily represent the official views of the NIH.

Magdalene Wellman contributed to this policy paper while at Community – Campus Partnerships for Health. Magdalene Wellman is currently Director of Health Systems Improvement at AcademyHealth.

Images in this report are courtesy of the RADx-UP Image Bank — a collection of more than 700 community-sourced images by RADx-UP projects. Image credits follow each photo.

RECOMMENDED CITATION FORMAT

Kaalund, K., Phillips, E., Farrar, B., Perreira, K., Taylor, M., Wellman, M., Dave, G., Kibbe, W., Cohen-Wolkowicz, M., Thoumi, A. (2023). Opportunities to Enhance Health Equity by Integrating Community Health Workers into Payment and Care Delivery Reforms. Durham, NC: Duke Clinical Research Institute, Duke-Margolis Center for Health Policy, UNC Center for Health Equity Research.

Table of Contents

Executive Summary	i
Introduction	1
Methods	3
Data Source and Screening	3
Community Health Workers Categorization	3
Policy Analysis	4
Limitations	4
Selected Terminology	4
Section 1: Who is a Community Health Worker?	5
Community Health Worker Roles Identified in RADx-UP Project Literature	6
Section 2: The Evidence from RADx-UP	8
Policy Levers: Resource Allocation, Payment, Access, Communication, and Data	8
Foundational Components: Community Engagement, Cross-sector Partnerships, and Regulatory Guidance	10
Population Health Improvements.....	11
Section 3: Policy Recommendations	14
Short-term Policy Recommendations for Health Care Delivery Reform	14
Long-term Policy Recommendations for Community-Engaged Research	18
Conclusion	20
Appendix Table 1. Descriptive Summary of Community Health Worker Models Across RADx-UP Projects	21
References	23

Opportunities to Enhance Health Equity by Integrating Community Health Workers into Payment and Care Delivery Reforms

Executive Summary

Growing interest in advancing health equity among health systems, payers, government agencies, and community-based organizations, and initiatives such as the Centers for Medicare & Medicaid Services' (CMS) [Framework for Health Equity](#) has created a window of opportunity to translate evidence gathered during the COVID-19 pandemic into broader, equity-focused health care transformation efforts. The COVID-19 pandemic has underscored the importance of developing and sustaining a robust health workforce at the community level. Community health workers (CHWs), also known as *promotoras* or *promotores de salud*, *lay health advisers*, or *health navigators* have served in critical roles to improve equitable access to COVID-19 testing, vaccination, and therapeutics. Community-based care delivery models can bridge systemic and cultural gaps in coverage, service delivery, and affordability, demonstrating potential to make meaningful improvements in health outcomes and reduce health disparities.

Evidence from a review of the initial publications generated by the [Rapid Acceleration of Diagnostics – Underserved Populations](#) (RADx-UP) initiative demonstrates that community-based care delivery models that prioritize CHWs in a health care workforce can not only respond during acute public health crises, but also be incorporated sustainably into existing infrastructure to support the design and implementation of equitable health policy and practice. 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 projects embedded CHWs as key partners in their programmatic infrastructure to reduce inequities in COVID-19 testing. In this policy brief, we have synthesized experiences from RADx-UP projects during

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

CHWs that collaborated with RADx-UP projects served in multiple roles on a continuum ranging from advisory to outreach to shared project leadership. In the majority of studies we reviewed, where the CHW role was defined, CHW roles included disseminating culturally and linguistically appropriate information about the COVID-19 pandemic, providing direct services such 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. As demonstrated through the RADx-UP initiative, the trust building and relationship development necessary for successful community-engaged interventions require time, organizational capacity, and financial resources dedicated to these activities. CHWs are essential links in community-based care delivery models and assume a variety of critical roles both within and outside of clinical settings. Therefore, policy efforts to sustain these models can focus on aligning lessons learned from the COVID-19 pandemic to broader health care transformation initiatives. Policy efforts to sustain CHW models include revising quality metrics to support CHW engagement in care delivery, expanding alternative payment models (APMs) to prioritize CHWs in transformation efforts, using existing competency frameworks to outline reimbursable CHW roles, and creating multi-year funding opportunities that support robust measurement and evaluation.

Key Takeaways for Policymakers, Payers, and Health Leaders

We identified 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 through expanded capacity for evaluation and increased multi-year funding mechanisms.

1. Revise federal quality measures to reflect the contributions of CHWs to community engagement and equitable access to care.
2. Expand sustainable alternative payment models to prioritize CHWs in health care transformation efforts.
3. Use existing competency frameworks to facilitate alignment of CHW roles and functions to reimbursement models.
4. Develop multi-year funding opportunities to increase the capacity of community-based interventions to evaluate outcomes.

5. Invest in research capacity and training to formally include CHWs in conception, design, implementation, and evaluation of interventions.

Policy makers, funders, and providers can advance strategies that recognize the contributions that CHWs make in promoting equitable, high-quality care through these key recommendations. Leaders in health care can apply lessons from RADx-UP to ongoing efforts to increase health equity among historically marginalized populations. Moreover, these recommendations require multi-sector engagement and collaboration with community-based organizations (CBOs) to address the different social determinants affecting community health. This engagement should not only amplify community voices but also incorporate bidirectional communication and shared leadership, such as projects demonstrated through the RADx-UP initiative.

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

Introduction

The COVID-19 pandemic has underscored the importance of developing and sustaining a robust public health workforce at the community level. Community health workers (CHWs), also known as *promotoras* or *promotores de salud*, *lay health advisers*, or *health navigators* serve [multifaceted roles](#) in patient navigation, health promotion, health education, and case management. CHWs are individuals with personal connection who often live in and share sociodemographic characteristics with the community they serve. Throughout the COVID-19 pandemic, CHWs have served in critical roles to improve equitable access to testing, vaccination, and therapeutics. Evidence from the [Rapid Acceleration of Diagnostics – Underserved Populations](#) (RADx-UP) initiative demonstrates that community-based care delivery models that prioritize CHWs in their workforce can not only respond during acute public health crises, but also be incorporated sustainably into existing health infrastructure to support the design and implementation of equitable health policy and practice.

As [prior research](#) shows, CHW models can bridge systemic gaps in coverage, service delivery, and affordability, demonstrating potential to make meaningful progress in improving health outcomes and fostering health equity. In the United States (U.S.), health systems that have included CHWs in their programs have [reduced](#) 30-day readmission

rates, [increased](#) preventive screening, [increased](#) cost-effectiveness of clinical intervention, and [improved](#) access to preventative care for patients from culturally and linguistically diverse or disadvantaged backgrounds. Barriers to developing and sustaining CHW models have been well [cited](#) elsewhere. Some [challenges](#) include the [lack](#) of national standards for CHW models, [heterogeneity](#) in definitions of the CHW, workforce burnout, systemic undervaluation of the workforce, limited training and professional development opportunities, and notably, the [lack of sustainable funding](#) to support CHW models.

Growing interest in advancing health equity among health systems, payers, and community-based organizations, and initiatives such as the Centers for Medicare & Medicaid Services' (CMS) [Framework for Health Equity](#), has created a window of opportunity to translate evidence gathered during the COVID-19 pandemic into broader, equity-focused health care transformation efforts. Federal agencies, including the [Centers for Disease Control and Prevention](#) (CDC) and CMS, have [identified](#) CHWs as critical partners for engaging patients and reducing [long-standing](#) health disparities. In addition, in April 2022, the U.S. Department of Health and Human Services (HHS) allocated over \$200 million in American Rescue Plan funding to launch the [Community Health Worker Training Program](#). This program



PHOTO CREDIT: JOHNNY LOZOYA SUPER EVENTS SHOWS. COURTESY OF THE RADx-UP IMAGE BANK



PHOTO CREDIT: JOHNNY LOZOYA SUPER EVENTS SHOWS, COURTESY OF THE RADx-UP IMAGE BANK

demonstrates a significant investment from the federal government into community-based health care delivery. The multi-year program is focused on education and training to support development of a robust CHW workforce. Many states use state and federal grants through federally qualified health centers, departments of health, and federal agencies such as the CDC to fund CHW programs as well as create roles for program coordination within state Departments of Health and Human Services.

Since 2020, the National Institutes of Health (NIH) has invested over \$500 million in community-based COVID-19 testing and associated services through the RADx-UP initiative. Many of the 137 RADx-UP projects have embedded CHWs as key partners in their programmatic infrastructure to reduce inequities in COVID-19 testing. In this policy brief, we synthesized experiences from RADx-UP projects during the COVID-19 pandemic and identified additional policy

changes that are needed to enable CHW inclusion in health care transformation. In section 1, we describe definitions of CHWs utilized by RADx-UP awardees. In section 2, we summarize evidence from RADx-UP published articles using the [RADx-UP Health Equity Policy Framework](#), which identifies five key policy levers—access, resource allocation, data, communication, and payment—and foundational components to advancing health equity through health policy. In Section 3, we present key recommendations for policy makers, providers, payers, and other health leaders based on experiences from the RADx-UP initiative. These recommendations aim to align CHW programs with ongoing health care transformation efforts at national, state, and local levels.

Methods

We conducted a review of RADx-UP published articles with the aim of answering the following research question: What policy changes and payment model reforms are needed to better utilize CHWs to improve health equity?

DATA SOURCE AND SCREENING

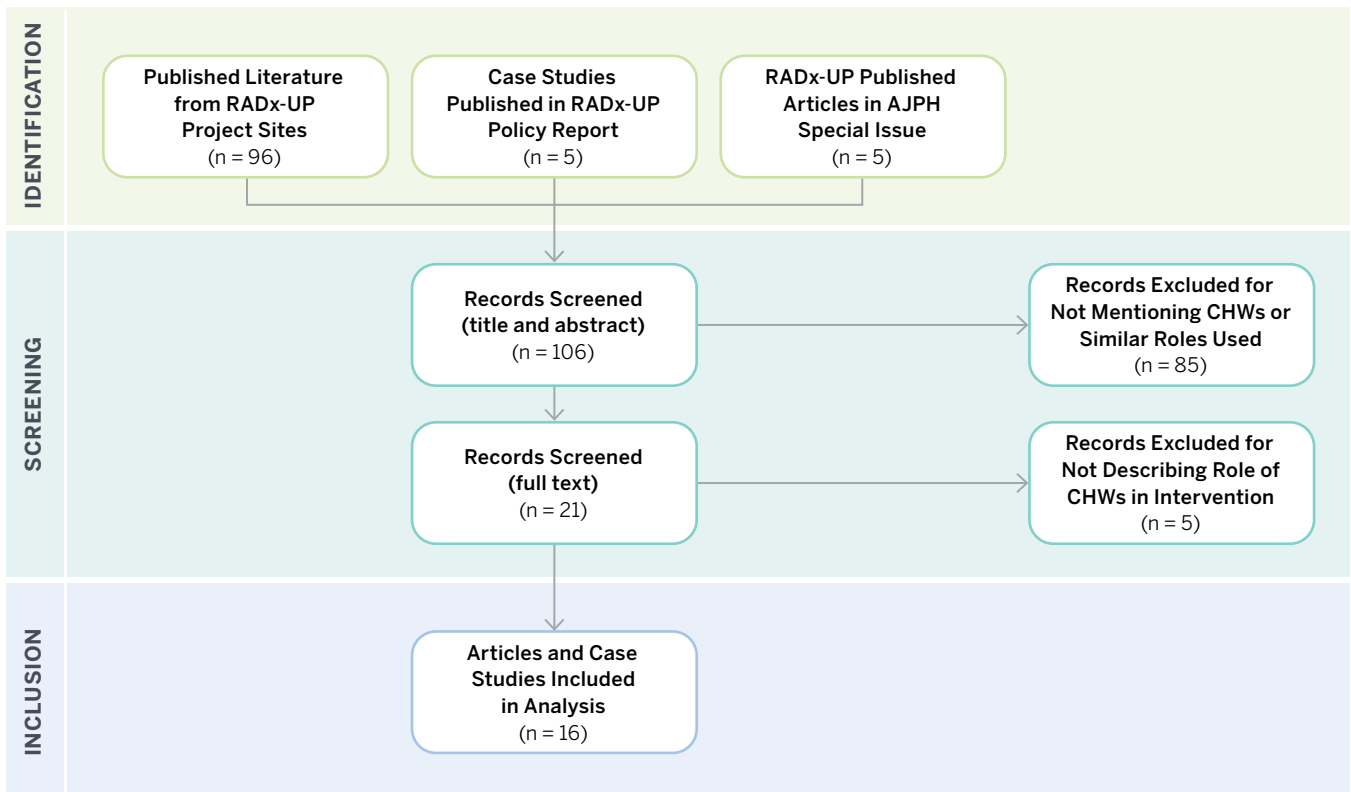
We screened 106 peer-reviewed articles or case studies published by RADx-UP projects between September 2020 and October 27, 2022 (**Figure 1**). Articles were included for full text review if they were published through collaboration with a RADx-UP project site and the title or abstract included some mention of CHWs involved in the project. We included various terms used to describe lay members of the community who serve as liaisons between health systems and the community. These terms included *community health worker(s)*, *promotoras or promotores de salud*, *community health advisors or advocates*, and *health navigators*. In total, 17 articles and four case studies were included for full text review. Two researchers independently screened the full-

text articles, and articles were included for extraction if they broadly included CHW perspectives or a description of how CHWs were utilized in an intervention. After full text review, 16 studies were included for extraction (**Appendix Table 1**).

COMMUNITY HEALTH WORKERS CATEGORIZATION

We mapped CHW roles identified within RADx-UP articles to 10 CHW core roles (**Table 1**) described by *The National Community Health Worker Core Consensus (C3) Project*. The C3 Project is a national initiative that offers a set of CHW roles and competencies that provide guidance for improving CHW practice and policies to scale CHW models. To our knowledge, the C3 Project represents the most comprehensive national consensus effort to identify the roles, skills, and qualities critical for CHWs. The roles were developed through a rigorous consensus building process that included CHWs, CHW field allies, and over 25 CHW networks across the U.S. The following core roles were

Figure 1. Prisma diagram summarizing literature review process



identified: (1) providing direct service; (2) coordinating care, managing cases, and navigating systems; (3) building individual and community capacity; (4) providing coaching and social support; (5) providing culturally appropriate health education and information; (6) performing cultural mediation among individuals, communities, and health and social service systems; (7) advocating for individuals and communities; (8) conducting outreach; (9) participating in evaluation and research; and (10) implementing individual and community assessments. The CHW role definitions included in this framework are overlapping and not mutually exclusive, therefore some activities may fall into multiple categories. For example, the implementing individual/community assessments and participating in evaluation and research categories may contain similar activities. Further definitions for each of the identified roles can be found at <https://www.c3project.org/resources>.

POLICY ANALYSIS

The RADx-UP [Health Equity Policy Framework](#) was developed in 2021 based on review of the literature and stakeholder interviews with RADx-UP awardees. This Health Equity Policy Framework identifies policy levers and foundational components that can address systemic barriers that prevent populations from accessing high-quality health services in a timely manner. The main objective of the Health Equity Policy Framework is to help health leaders—including policymakers, community organizers, and other health care practitioners— identify and use community-engaged policy strategies in decision-making processes. The five key policy levers are access, resource allocation, data, communication and messaging, and payment. The three foundational components are community engagement, cross-sector partnerships, and regulatory guidance. We used the RADx-UP Health Equity Policy Framework (published in the 2022 policy report) to guide data extraction from the identified articles and case studies, including categorization of barriers and strategies to overcome challenges. We extracted the definition of CHWs, funding type, and documented evidence or results if authors included these data in the article.

LIMITATIONS

Publications after October 2022 were not included, and any projects using CHWs who had not published their work by then are not represented in this analysis. It is likely that our review did not fully capture all cases of CHW utilization among RADx-UP projects. Further, our findings relating to the types of roles performed by CHWs within reviewed RADx-UP projects are limited to those roles described explicitly in the articles and may not necessarily reflect all the roles CHWs performed within the project. Future research could improve upon our methodology by including focus group or surveys to identify additional RADx-UP projects that included CHWs in their model and more completely capture the breadth of activities performed by CHWs

SELECTED TERMINOLOGY

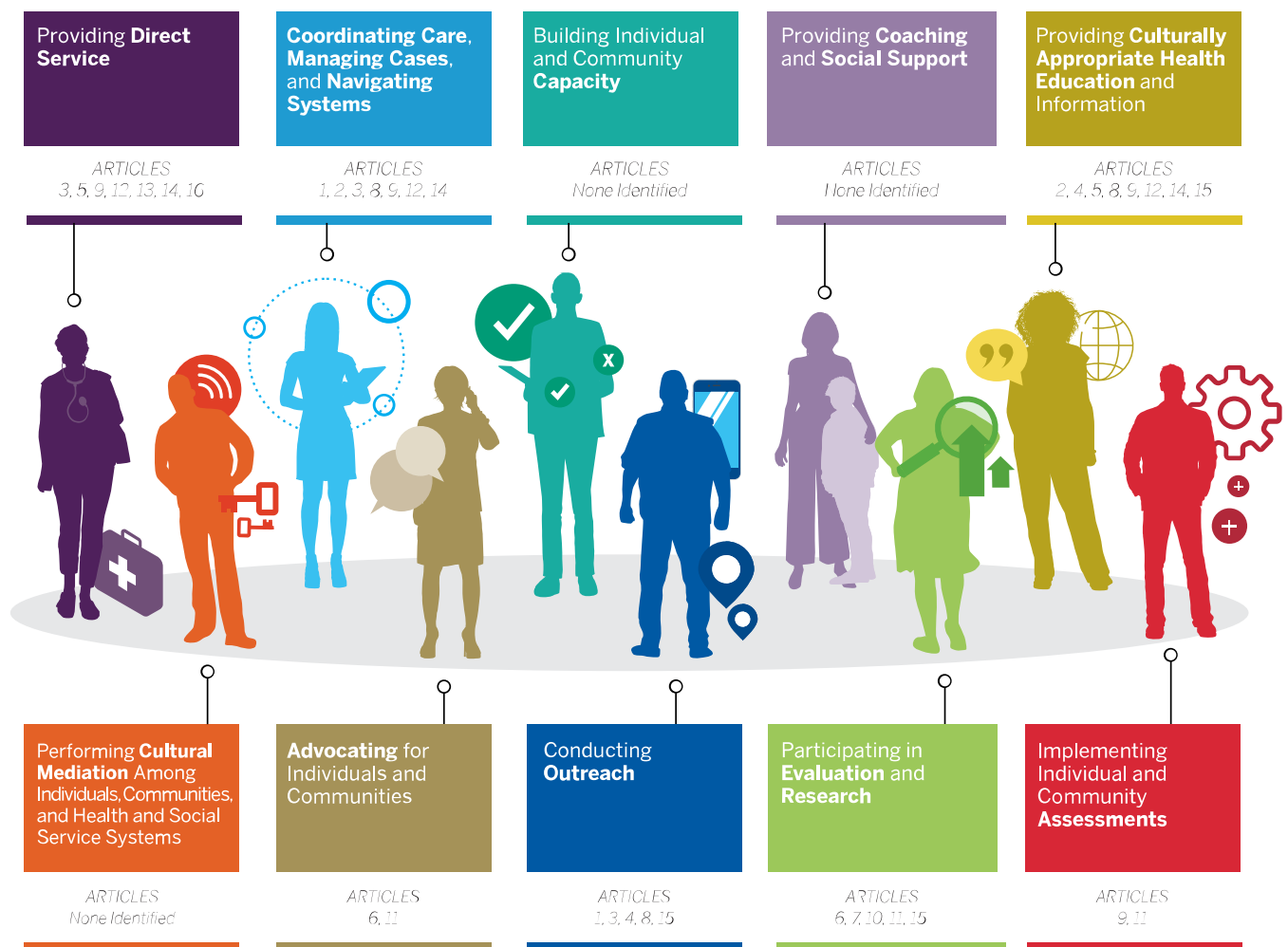
We recognize recent efforts to [limit](#) use of the term “stakeholder” as the term is often used to reflect power differentials between different groups and can connote negative meanings to different communities. However, we opted to use the term stakeholder in this paper to reify the policy perspective and to describe individuals or groups with particular interest and engagement in decision-making related to public health, CHW models, COVID-19 resource delivery and allocation, and related policy actions. We use this term broadly to describe many relevant groups interested in health policy, including but not limited to CHWs, community members, community leaders, policymakers, public health practitioners, providers, and payers.

Section 1: Who is a Community Health Worker?

The American Public Health Association [defines](#) a community health worker:

A frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the worker to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery.

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. Thoumi 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>

Prior [research](#) demonstrates the wide range of nomenclature used in the literature and the variable interpretations of the roles of CHWs. CHWs may work directly with community-based organizations (CBOs), on clinical care teams, in long-term care facilities, with social services, or even with local and state health departments. CHWs may serve in [many](#) roles, including interpretation and translation services, supporting community adherence to health recommendations, facilitating access to health care

services, providing routine or diagnostic health screening services, and helping to disseminate health information in a culturally and linguistically responsive way. Additionally, CHWs have assisted with improving community-engagement in research. Training for CHWs is also context dependent; some CHWs are trained through formal certificate programs and courses, while others may receive less-formal training from staff at CBOs or clinics.

Table 1. Community Health Worker Core Consensus Project Core Roles Across RADx-UP Literature

C3 Core CHW Roles*	Studies
Providing Direct Service	[3], [5], [9], [12], [13], [14], [16]
Coordinating Care, Managing Cases, and Navigating Systems	[1], [2], [3], [8], [9], [12], [14]
Building Individual and Community Capacity	No articles identified
Providing Coaching and Social Support	No articles identified
Providing Culturally Appropriate Health Education and Information	[2], [4], [5], [8], [9], [12], [14], [15]
Performing Cultural Mediation Among Individuals, Communities, and Health and Social Service Systems	No articles identified
Advocating for Individuals and Communities	[6], [11]
Conducting Outreach	[1], [3], [4], [8], [15]
Participating in Evaluation and Research	[6], [7], [10], [11], [15]
Implementing Individual and Community Assessments	[9], [11]

*To read more about each role type refer to the C3 Project Resource Page at <https://www.c3project.org/resources>

COMMUNITY HEALTH WORKER ROLES IDENTIFIED IN RADx-UP PROJECT LITERATURE

Given the differences in definitions and training of CHWs, their roles and responsibilities are context-dependent and often vary across projects. Along with this heterogeneity, our review of RADx-UP literature revealed that CHWs function on a continuum ranging from advisory to outreach to shared project leadership. Across publications there were repeated themes regarding the types of activities CHWs conducted including assisting patients with self-administered COVID-19 tests, spreading awareness of disease prevention strategies and available resources, delivering health education sessions, and promoting testing within their communities. Many articles included CHWs with multiple or overlapping roles. The majority of reviewed studies utilized CHWs that fell within the category of providing culturally appropriate health education and information, with eight studies discussing how CHWs

disseminated health information and education using culturally and linguistically responsive approaches [2, 4, 5, 8, 9, 12, 14, 15]. Other commonly represented CHW roles across articles were care coordination and providing direct services. Seven studies described how CHWs helped community members navigate testing settings and connect with the health system [1, 2, 3, 8, 9, 12, 14]. For example, CHWs assisted community members with finding testing resources, connecting with social support services (e.g., food delivery, bill assistance, housing support), and getting referrals for further care or resources. Likewise, seven studies described direct services CHWs provided such as administering COVID-19 tests, delivering testing results, or directly supplying community members with resources (e.g., food services) [3, 5, 9, 12, 13, 14, 16].



PHOTO CREDIT: MARK McDONALD PHOTOGRAPHY, COURTESY OF THE RADx-UP IMAGE BANK

Five studies discussed how CHWs were utilized to conduct outreach within their communities [1, 3, 4, 8, 15]. Outreach ranged from recruiting community members to joining focus group discussions about COVID-19 testing barriers to promoting at-home testing options through tailored communication strategies (e.g., phone calls sharing testing resources and faith-based testing promotion). Finally, another repeated theme across studies included roles related to evaluation and research. Five articles discussed ways CHWs were engaged to survey community members about barriers to COVID-19 testing, participate in priority setting activities with researchers and intervention leaders, or were directly involved in research activities as participants in focus groups or surveys [6, 7, 10, 11, 15].

In two studies, CHWs served in advocacy roles (i.e., advocating for individuals and communities) by participating on community advisory boards to advise on testing plans and share community experiences [6, 11]. Two studies described roles related to implementing individual and community health assessments [9, 11]. In the first study

[9], bilingual CHWs delivered a culturally and linguistically responsive needs assessment tool to inform and implement a no-contact resource delivery service. In the second study [11], *promotores de salud* served on a community advisory board to identify common themes, necessary conditions, actions, measures, and indicators of success to equitable COVID-19 testing and vaccination. None of the reviewed studies explicitly or implicitly discussed CHW roles related to cultural mediation, providing coaching and social support (e.g., motivating care management and care seeking behaviors), or building individual and community capacity. However, this does not necessarily imply that such roles were not performed by CHWs in some RADx-UP projects. Some roles filled by CHWs may have been omitted from published literature or were not captured by researchers due to the inherent difficulty of accounting for some CHW activities. For example, CHWs may automatically perform cultural mediation or provide emotional support to patients in the course of performing other activities, leading to these roles being absent from the reviewed literature.

Section 2: The Evidence from RADx-UP

We applied the aforementioned Health Equity Policy Framework to organize strategies for CHW models from the RADx-UP literature (**Table 2**). Below we describe the importance of CHW involvement across the five policy levers and three foundational components.

POLICY LEVERS: RESOURCE ALLOCATION, PAYMENT, ACCESS, COMMUNICATION, AND DATA

Resource Allocation

Embedding community-based decision-making in public health resource allocation can advance health equity in health care delivery and fill gaps in public health infrastructure. CHWs can serve as important liaisons for translating community concerns, identifying community needs, and advocating for equitable allocation of resources. In one RADx-UP project, CHWs implemented a community needs assessment tool during regular patient outreach in areas where risk of COVID-19 exposure was greater than in other areas [9]. In another project [11], CHWs participated in a community advisory board process to identify needed resources to improve testing and vaccine uptake among community members. These activities were designed with cultural and linguistic needs of the communities in mind and were used to align resources to address gaps in COVID-19 testing and vaccine administration.

Payment

Identifying key community assets to incorporate into innovative payment models can support equitable care management and address root causes of health inequities. Alternative payment models (APMs) are tools for paying providers that can be designed to place value at the center of care. APMs that include provisions to cover the time of CHWs as part of the care delivery teams can help achieve equity goals. As noted previously, CHWs can serve as critical members of care delivery teams, reaching community members in the places that are convenient, relevant, and accessible to them. Two RADx-UP articles established payment strategies that are not often used. For example, in these two articles, CHWs were contracted as employees to

support more sustainable community-based care delivery [8, 14].

Access

CHWs are often trusted members of the community themselves and therefore help other community members navigate access barriers associated with geographic availability, lack of health insurance coverage, socioeconomic position, and lack of cultural and linguistic accessible public health resources/services. Across several RADx-UP articles, CHWs expanded access through community-based care settings. In two articles [3, 9], CHWs connected patients with resources to support them during isolation for positive COVID-19 test results and, in one of these articles, CHWs directly delivered food to community members isolating through an established no-contact delivery workflow [9]. In two other articles, CHWs administered COVID-19 tests and vaccines to community members during regular church services and community events [2, 13]. In these examples, CHWs provide health services beyond traditional clinical settings, resulting in expanded access for community members who are not connected to the health system or experience access barriers.

Communication

Public health messages that are clear, trustworthy, and culturally and linguistically responsive can address health literacy gaps. CHWs are often effective communicators of health messages because they have built trust with community members and understand the cultural norms within the communities they serve. Most articles discussed CHW strategies related to communication and messaging. Several articles explicitly described how CHWs conducted community outreach, shared COVID-19 information, translated COVID-19 guidance, and educated community members about different pandemic precautions [1, 2, 3, 4, 5, 8, 9, 15]. For example, in one article [4], promotores de salud conducted outreach to share information about COVID-19 testing that highlighted cultural values (e.g., collective welfare) prominent in communities with individuals

identifying as Latino, Latinx, Latine, and/or Hispanic. Additionally, promotores de salud disseminated information through popular and convenient community communication channels such as at Spanish-language churches or on local Spanish-language radio stations. In another article, CHWs developed a comic book to communicate the importance of testing and other pandemic safety measures [5].

Data

Public health data are integral for understanding which health disparities exist, where health disparities and inequities are most pronounced, what populations are most affected by different public health issues, and what health policy areas should be prioritized. To achieve responsible and equitable policy decisions, data collection efforts must be rooted in principles of community engagement. A growing body of [evidence](#) illustrates the importance of including CHWs in data collection and reporting processes. For example, including CHWs in data collection and reporting processes can help reflect community values and cultural humility, thereby building trust in public health and clinical research spaces that have historically harmed marginalized and minoritized communities. CHWs often have established trust and rapport with community

members which makes data collection and reporting less transactional. CHWs are well-equipped to collect patient data across different settings and may also have a better understanding of which questions to ask to gather data on the unique needs of patients based on their contextualized knowledge of the community. Including CHWs in the design, implementation, evaluation, and interpretation of data can lead to a deeper, more informed understanding of health disparities and improved utilization of primary care supports. These strategies incorporate principles from community-engaged research and [community-based participatory research](#) practices where those impacted by research outcomes play prominent roles in informing or leading the research process, placing emphasis on trust and bidirectional communication. CHWs were included in one RADx-UP article to identify patients at greatest risk for COVID-19 exposure and related vulnerabilities using a data registry. CHWs administered a needs assessment tool based on patients identified through the data registry and collected data to inform a resource delivery program [9].



PHOTO CREDIT: MELISSA POFFEL, COURTESY OF THE RADx-UP IMAGE BANK



PHOTO CREDIT: LANCE OMAR THURMAN PHOTOGRAPHY, COURTESY OF THE RADx-UP IMAGE BANK

FOUNDATIONAL COMPONENTS: COMMUNITY ENGAGEMENT, CROSS- SECTOR PARTNERSHIPS, AND REGULATORY GUIDANCE

Community Engagement

Developing health policy solutions that are sustainable, transparent, and equitable requires incorporating community engaged practices in decision-making. Incorporating community voices in design and implementation of public health and policy actions can more holistically support efforts to reduce gaps in health service delivery. CHWs are well positioned to facilitate community-engaged decision-making by elevating the needs of community members through assessment approaches, conducting outreach to engage community members in focus group sessions or surveys, and by serving on community advisory boards to share insights. Across the RADx-UP articles reviewed, several discussed strategies focused on CHW led community engagement initiatives [9, 11, 15]. RADx-UP projects partnered with CBOs that hired CHWs or directly contracted CHWs to support engagement activities that centered community voices.

Cross-sector Partnerships

Strategies that boost multisector engagement will be important for sustaining public health infrastructure. Addressing health inequities through policy action requires a multi-pronged approach that engages many relevant

stakeholder institutions across the structural and social determinants of health (e.g., housing, transportation, education). Cross-sector partnerships that include different perspectives reflect the fact that one's health is impacted by multitude of intersectional factors that need to be addressed in relation to each other. Cross-sector partnerships require building coalition mindsets and supporting shared accountability measures. These coalitions can be more successful than any one stakeholder group acting in isolation. CHWs can be included as stakeholders on community advisory boards and in policy decision-making processes to elucidate community factors outside of the health system that may drive health inequities. Further, CHWs can identify whether any critical stakeholders are missing from the dialogue. Three RADx-UP articles described CHWs participating in community advisory boards or focus groups to identify major barriers to testing in their communities and in turn inform appropriate intervention strategies [6, 7, 10]. Such barriers went beyond health care and included the following: employment insecurity, geographic inaccessibility, limited transportation, limited sick time/pay, fears about documentation, and weak social safety nets. Highlighted barriers demonstrated the need for multipronged approaches and engagement from different sectors.

Regulatory Guidance

Regulatory gaps and barriers continue to place strain on efforts to develop and scale community-based public health

interventions that address equity issues. For example, Clinical Laboratory Improvement Amendments made it difficult to provide routine COVID-19 testing in non-medical settings (e.g., workplaces, businesses). Community-based decision makers, such as CHWs, can review regulatory reforms to elucidate strategies to streamline patient access, resource allocation, and public health data sharing. CHWs can help reduce the burden of regulatory barriers and facilitate quality care. Further, CHWs can help alleviate workforce shortages and challenges that exacerbate regulatory barriers. Conversely, some regulations, such as those around training and certification requirements, can make it harder to effectively integrate CHWs into care delivery. Two RADx-UP articles explored employment strategies that allowed CHWs to expand testing capacity and support administrative, logistical, or care delivery efforts in response to staff shortages [12, 16].

POPULATION HEALTH IMPROVEMENTS

Notably, only three of the reviewed articles reported results related to the effect of CHWs on intervention success or patient health outcomes. One study detected a 31.5% COVID-19 positivity rate within the Latinx community in Baltimore, MD, from June to October of 2020, compared to a





<5% positivity rate in the general population [3]. This result affirmed the importance of CHW utilization in promoting community-based testing to identify at-risk populations and higher incidence of disease among marginalized communities. Another study found that community-based testing sites where promotores de salud were present resulted in roughly 3.5 times higher testing uptake among Latinx patients in Oregon when compared to testing sites without CHWs present in the same community [4]. This result underscores the impact of CHWs on community trust and intervention success. Finally, a third study compared outreach efforts between a health care organization (HCO) and a CBO for at-home testing in Black and Latino communities [1]. In this study, the odds of completing at-home tests were significantly higher in the HCO arm than in the CBO arm, yet more participants were recruited through CBOs than HCOs at each stage of the recruitment process. These findings suggest, that CBO engagement plays a critical role in community engagement. Findings also affirmed challenges related to at-home testing promotion and barriers to uptake or completion at large.



PHOTO CREDIT: YVONNE KEMP PHOTOGRAPHY, COURTESY OF THE RADx-UP IMAGE BANK

Table 2: CHW Strategies Mapped to the Health Equity Policy Framework for Community-Based COVID-19 Testing

Health Equity Policy Framework Components	Adapted Policy Strategies for CHW Model	Illustrative Strategies from Reviewed Literature
 <p>Resource Allocation: Adopt strategies that align funding toward need and impact</p>	<p>Engage CHWs in decision-making processes about the alignment of resources and funding to address community needs</p>	<ul style="list-style-type: none"> • CHWs implemented a culturally and linguistically appropriate needs assessment tool during COVID-19 outreach [9] • CHWs delivered a culturally and linguistically responsive needs assessment tool to inform no-contact resource delivery service [11]
 <p>Payment: Facilitate care delivery beyond traditional clinical setting by creating provider payments for equitable allocation</p>	<p>Establish payment models to support CHW care delivery</p>	<ul style="list-style-type: none"> • CHW-led programs for contact tracing, communication, and outreach were funded and expanded [8] • Promotores de salud were employed on 2-year contracts [14]
 <p>Access: Create models that account for barriers due to geographic availability, insurance coverage, socioeconomic position, and cultural and linguistic accessibility</p>	<p>Facilitate access through expanded care delivery settings and collaborate with CHWs to deliver services and resources to meet community needs</p>	<ul style="list-style-type: none"> • CHWs connected COVID-19-positive patients with safe isolation resources (e.g., food delivery services) [3] • CHWs delivered food and COVID-19 resources to patients with COVID-19 or awaiting COVID-19 test results [9] • CHWs delivered testing and vaccination services at churches and other community-based sites [13] • Church health workers supported the local health department in hosting church-based testing events in African American communities [2]
 <p>Communication & Messaging: Account for lived experience through cultural humility</p>	<p>Consult CHWs on proper messaging for different communities and recruit CHWs to disseminate culturally and linguistically appropriate public health messages</p>	<ul style="list-style-type: none"> • CBOs conducted community-engaged outreach to promote at-home COVID-19 testing among community members [1] • Church health workers disseminated a culturally and religiously tailored COVID-19 toolkit that included digital tools and education materials [2] • CHWs wrote work letters for patients following CDC guidelines [3] • CHWs performed patient outreach for positive test results [3] • Promotores de salud conducted outreach and disseminated public health information that highlighted Latinx cultural values [4] • CHWs and testing teams developed comic books to communicate the importance of testing, social distancing, and future vaccination to children [5] • CHWs led communication and outreach initiatives within communities in San Diego identifying as Hispanic, Latino, or Latinx [8] • CHWs were involved in communication campaigns to translate new guidance (e.g., state and federal travel safety in response to upcoming holiday travels) and answered community questions [9] • Promotores de salud helped develop culturally tailored communication materials and marketing strategies to increase vaccine uptake [15]

Health Equity Policy Framework Components	Adapted Policy Strategies for CHW Model	Illustrative Strategies from Reviewed Literature
 <p>Data: Reduce differential access through data and improve interoperability</p>	<p>Involve CHWs in data collection, analysis and reporting to inform needs assessments and evidence-based interventions</p>	<ul style="list-style-type: none"> • CHWs used data registry to identify patients at greatest risk for COVID-19 [9]
 <p>Community Engagement: Center marginalized and minoritized voices to identify strengths, build trust and resilience, and support community-led strategies</p>	<p>Partner with CHWs to center community voices in decision-making and support community-led strategies</p>	<ul style="list-style-type: none"> • CHWs conducted community needs assessments with patients to identify clinic priorities [9] • CHWs participated in community advisory board theory of change processes to identify barriers to COVID-19 testing [11] • Promotores de salud enrolled and engaged community members to participate in focus groups and surveys about barriers to COVID-19 testing and vaccine uptake [15]
 <p>Cross-Sector Partnerships: Develop coalition mindsets and support change agents</p>	<p>Include CHWs and CBOs on advisory boards and as part of decision-making processes</p>	<ul style="list-style-type: none"> • Community health center staff were recruited to participate in semi-structured qualitative interviews [7] • Black and Latinx health care workers were interviewed about the impact of the COVID-19 pandemic on their frontline roles [10] • CHWs served on community advisory boards to advise on COVID-19 testing acceleration and expansion plans [6]
 <p>Regulatory Guidance: Streamline and reduce regulatory barriers that create logistical burden</p>	<p>Employ CHW workforce to help reduce regulatory barriers that create logistical burden</p>	<ul style="list-style-type: none"> • Task-shifting workflow was adopted where non-clinical CHWs were trained to deliver health education and provide COVID-19 testing referrals [12] • “Flex agents” were hired to expand testing capacity and supported administrative and logistical efforts at clinical sites [16]

Section 3: Policy Recommendations

Policy makers, funders, and providers can advance strategies that recognize the contributions CHWs make in promoting equitable, high-quality care through the following key recommendations. Policy recommendations 1–3 highlight specific near-term steps to prioritize CHWs into existing health care transformation reforms, including through performance measures, APMs, and certifications. Policy recommendations 4–5 focus on long-term steps to promote the use of community-engaged interventions through expanded research capacity for evaluation and increased multi-year funding mechanisms. All health leaders can apply lessons from RADx-UP to ongoing efforts to increase health equity among historically marginalized populations. Moreover, all of these recommendations require multi-sector engagement and collaboration with CBOs to address the different social determinants affecting community health. This engagement should not only amplify community voices but also incorporate bidirectional communication and shared leadership, such as projects demonstrated through the RADx-UP initiative.

SHORT-TERM POLICY RECOMMENDATIONS FOR HEALTH CARE DELIVERY REFORM

Despite increased funding and resources from both federal and state agencies during the COVID-19 pandemic, there are several strategies that can overcome remaining barriers to implementation and evaluation of community-engaged interventions. Care delivery models that include CHWs are most commonly funded through project grants, such as those within the RADx-UP initiative. These time-limited funding sources lead to CHWs being employed on short-term contracts and leave CHWs without long-term, stable employment opportunities. Others have noted the potential [benefits](#) of health care systems serving as anchor institutions in the community that employ CHWs long-term to improve quality and access to health care. Low wages and job insecurity negatively [affect](#) CHW workforce retention, thereby hindering effective community-engaged

health promotion. Many payment barriers underly this issue including a lack of CHW inclusion in performance metrics, payment models which exclude services provided by CHWs, and lack of consensus around certification and training for CHWs. Policy and payment related challenges include the following:

- Performance metrics create the incentive structure within which health care organizations operate and thereby drive many of the decision-making processes within the health care market. Prior editions of federal quality measures failed to recognize the importance of community engagement and equitable access to care, in turn disincentivizing CHW utilization.
- Traditional fee-for-service (FFS) funding models have proved insufficient in facilitating sustainable payment for the services provided by CHWs. Diagnosis and service codes, which allow health care organizations to bill insurers and patients for care provided, are centered around medical procedures and often do not provide a direct reimbursement pathway for CHW-provided services. This lack of CHW recognition within the fee-for-service framework prevents many health care provider organizations from including CHWs in their care delivery models. While APMs may offer additional opportunities, increased attention to payment reforms that incorporate CHWs into value-based care transformation efforts is needed.
- CHW certification is often a requirement for hiring within health care organizations. Without a standardized framework for training or certification, CHWs have remained largely excluded from professionalized health care settings. Certification and training requirements present additional challenges for CHWs who share marginalized identities with the communities they serve. Tensions exist between facilitating hiring of CHWs while maintaining the community-focused nature of CHWs and preventing over-professionalization of their roles.

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.

Recommendation 1: Revise federal quality measures to reflect the contributions of CHWs to community engagement and equitable access to care.

Recent federal action to reform quality measurement presents an opportunity for the contributions of CHWs to be better recognized in health care transformation priorities. The evidence presented by CHW utilization in RADx-UP projects can help inform a more streamlined, patient-centered, and community-oriented framework for equity and quality in patient care. Currently, the Centers for Medicare & Medicaid Services (CMS) is updating performance measures for accountable care organization (ACO) quality. CMS's Meaningful Measures 2.0 initiative builds on CMS's prior measure reduction goals by seeking to modernize measure collection, support value-based care models, and promote health equity goals. The strategies used by RADx-UP projects (**Table 2**) demonstrate how the contributions of CHWs are vital to advancing CMS's [Meaningful Measures 2.0](#) goals of promoting health equity, closing gaps in care, and engaging patient perspectives. Federal priority setting and reform around quality measurement can therefore account for the contributions of CHWs to reflect more equitable, patient-centered care in federal quality measures. There is open debate on whether payers should pay for CHWs directly or pay for outcomes that CHWs can influence; however, current quality measures do not specifically integrate performance measures

that capture the range of outcomes CHWs influence. For example, no measure exists to capture the benefit and added quality CHWs provide by helping patients navigate the health system when their primary language is not English. To that end, additional or improved quality measures that reflect outcomes that CHWs can modulate are needed. Rather than forcing fit-for-purpose with existing measures, revised quality measures can include outcomes that address [structural racism and discrimination](#). Further, CHWs should be involved in revision processes to identify alignment of quality measures with duties performed. Correspondingly, health care providers can use evidence and strategies from RADx-UP to better address new quality measures related to equity and community engagement through utilization of CHWs.

Recommendation 2: Expand sustainable APMs to prioritize CHWs in health care transformation efforts.

Based on experience from RADx-UP, CHW payments should be stable and predictable to ensure that CHWs can devote their time to engaging in community-based interventions effectively. For health systems and payers operating within traditional FFS reimbursement models, new billing codes can be created to allow provider organizations to be paid for services performed by CHWs. Billing for CHW services can be further facilitated by recognizing CHWs as independent providers. This can open new avenues for CHWs to be



PHOTO CREDIT: YVONNE KEMP PHOTOGRAPHY, COURTESY OF THE RADx-UP IMAGE BANK



PHOTO CREDIT: YVONNE KEMP PHOTOGRAPHY, COURTESY OF THE RADx-UP IMAGE BANK

sustainably incorporated into care delivery through permanent hiring, rather than project-dependent contract work. In cases where new billing codes are infeasible, health care systems can use existing care management and coordination codes to bill for CHW services, but additional barriers exist. For example, since CHWs are not considered independent providers in most states, all FFS billing is conditional upon the hiring of CHWs by a traditional provider organization and supervision by an eligible clinician. Therefore, more creative solutions may be required to facilitate payment of CHWs in a greater range of care delivery models.

Recent health care transformation efforts offer new opportunities to develop long-term payment models for the integration of CHWs into health care services. With the launch of the [ACO REACH](#) model by the CMS Center for Medicare and Medicaid Innovation in January 2023, participating health care organizations now have increased cost-sharing incentives to advance health equity. Health systems participating in advanced APMs, such as ACO REACH, could use shared savings, or net savings passed on from the payer to the provider to fund better-coordinated and higher quality care provided by CHWs at lower costs. In addition, ACO REACH requires a mandatory health equity plan, outlining the provider's proposal to address health disparities among their patient population. As noted by the work of RADx-UP projects, the Center for Medicare and Medicaid Innovation and providers participating in

the new model can collaborate with CHWs to effectively reach historically marginalized populations and reduce disparities in health outcomes. CMS can encourage the incorporation of CHWs in providers' health equity plans. Providers operating within the ACO REACH model can examine how the CHW strategies outlined in this paper can be used to support their health equity plan and meet new quality requirements for community engagement. Further, as inclusion of health equity plans in APMs and value-based payment models is relatively new and will develop gradually over time, there is a more immediate opportunity to explicitly prioritize and codify the inclusion of the CHW workforce through requests for proposals and contracting processes as highlighted in [previous](#) work.

Recommendation 3: Use existing competency frameworks to facilitate alignment of CHW roles and functions to reimbursement models.

As health systems or states increasingly build CHWs into care delivery models, policy makers and health leaders can use existing competency frameworks to establish a flexible set of guidelines for CHW training and certification. For example, policymakers can use existing competency frameworks such as those developed by the C3 Project to identify key tenets for assessing CHW skills in certification and training programs. These competencies allow for flexible adaptation and application given a particular locale or state's existing context including financing, leadership,

and politics. In addition, health leaders should include CHWs in decision-making processes about the professionalization of the workforce. To navigate the benefits and challenges presented by certification (detailed in the box below), it is important to elevate CHW voices and experiences. CHWs should be included as key decision-makers in determining

Benefits and Challenges to CHW Certification

In the dialogue surrounding the professionalization of the CHW workforce, several benefits and challenges emerge. Notable [benefits](#) include: streamlined integration into care delivery teams, enhanced professional credibility, role standardization, competency standardization, and professional advancement (through expanded career pathways). However, the potential impact of certification on the community-focused nature of CHW roles presents a challenge. For example, key characteristics of an effective CHW are the often-intangible interpersonal skills that allow members of this workforce to understand community needs, and maintain trustworthy relationships with community members. Certification may threaten these characteristics by creating a competency evaluation that rewards alignment to criteria that is inconsistent with the values, lived experiences, and cultural norms important to particular communities. To that end, certification could entitle trainees to call themselves certified CHWs even if they are not from the community. Further, certification and training can be cost prohibitive, making it difficult for people who have the necessary qualities and skills but not the financial means or ability to take time off from their regular employment to become certified. Lastly, there is [variation](#) in state-based credentialing bodies, with each state having different requirements for CHWs and different training or certificate program opportunities.

the policy implications of more standardized certification programs.

LONG-TERM POLICY RECOMMENDATIONS FOR COMMUNITY-ENGAGED RESEARCH

Community-based programs need increased time, funding, and capacity to conduct rigorous evaluations. [Heterogeneity](#) of study designs [precludes](#) quantitative synthesis of different CHW models and makes it challenging to draw conclusions about the factors associated with changes in health outcomes, access, or utilization. Within the reviewed RADx-UP studies, two key challenges associated with establishing monitoring and evaluation processes may have contributed to the minimal reporting regarding CHW impact on intervention outcomes. First, although many funding organizations view evaluation as a priority of grant-funded projects, evaluation activities are often not fully accounted for in programmatic design. This occurs more frequently if projects are focused on implementation. The trust-building and relationship-development necessary for successful community-engaged interventions requires increased time and financial resources. Second, limited community-based research capacity hinders the uptake of community perspectives into opportunities to evaluate programs and inform future care delivery or public health interventions.

Recommendation 4: Develop multi-year funding opportunities to increase the capacity of community-based interventions to evaluate outcomes.

In research contexts, multi-year grants that extend beyond two to five years could be utilized to create more predictable sources of funding to support measurement and evaluation initiatives. These evaluation initiatives could include evaluation of the intervention itself, the impact of community engagement on the intervention, or the impact of community engagement on the health equity improvement of the communities in question. These extended grant cycles could alleviate capacity challenges associated with limited time for CHW evaluation and community outcomes assessment. Funders could allocate specific funding and support grantees in developing feasible evaluation timelines that align with program goals and incorporate community feedback (e.g., requiring grantees to specify how they will incorporate community feedback into



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

evaluation processes). Additionally, funders could consider expanding specific funding opportunities for measurement and evaluation that run in parallel to funding opportunities for implementation. Other [literature](#) has highlighted the importance of streamlining evaluation efforts with an organization's existing evaluation system. This could include adding additional measures in tracking processes or CHW model-specific questions in surveys.

Recommendation 5: Invest in research capacity and training to formally include CHWs in conception, design, implementation, and evaluation of interventions.

The traditional paradigm of public health research, intervention, and evaluation has often left CHWs out of the decision-making processes and leadership roles which

influence the future of health care delivery. CHWs, as members of the marginalized communities they serve, hold less power than academic researchers or health system leaders in shaping the direction of research and evaluation. This power differential acts as a barrier to systemic change and hinders the development of community-engaged projects. Academic institutions and funding organizations can begin to shift this dynamic by investing in research and evaluation training for CHWs, thereby enabling CHWs to take on greater roles in directing and shaping future projects. These investments could also lead to increased evaluation of community-engaged interventions by centering the evaluation expertise within the community rather than within the grant-dependent academic institutions.

Conclusion

Community health workers that collaborated with RADx-UP projects served multiple or overlapping functions on a continuum ranging from advisory to outreach to shared project leadership. The majority of reviewed studies included CHWs whose roles related to disseminating culturally and linguistically appropriate information about the COVID-19 pandemic, providing direct service, or coordinating care and health system navigation. Additional CHW roles reported by RADx-UP projects included conducting patient outreach, research and evaluation, community assessments, and community advocacy. As demonstrated through the RADx-UP initiative, the trust-building and relationship-development necessary for successful community-engaged interventions require increased time, organizational capacity, and financial resources. CHWs are essential links in community-based care delivery models and assume critical roles both within and outside of clinical settings.

Therefore, policy efforts to sustain these models can focus on aligning lessons learned from the COVID-19 pandemic to broader health care transformation initiatives. Policy efforts to sustain CHW models include revising quality metrics to support CHW engagement in care delivery, expanding APMs to prioritize CHWs in transformation efforts, using existing competency frameworks to outline reimbursable CHW roles, creating multi-year funding opportunities that support robust measurement and evaluation, and investing in research and training capacity to formally include CHWs in the intervention design and implementation process.



Appendix Table 1.

Descriptive Summary of Community Health Worker Models Across RADx-UP Projects

Study Number	Study Team	Location	CHW Description in Study	C3 Roles
[1]	Barrett et al. 2022	New Jersey	Traditional CBO outreach approach to promote at-home COVID-19 testing among community members. Testing uptake in this arm was compared with uptake involving a health care organization approach, where health care workers constituted a health care organization arm as “ambassadors” for at-home COVID-19 testing promotion.	Coordination & navigation; Outreach
[2]	Berkley-Patton et al. 2022	Kansas City, Missouri	Trained church health workers supported COVID-19 testing in African American communities and led implementation of culturally and religiously tailored interventions during existing church activities.	Culturally appropriate information; Coordination & navigation
[3]	Bigelow et al. 2021	Baltimore, Maryland	Bilingual CHWs delivered health care results and collected data. CHWs assessed patient needs for safe isolation such as need for food delivery programs, hotel isolation, or cash assistance. CHWs also provided work letters for patients following CDC guidelines and referred patients with moderate-to-severe symptoms to resources including follow-up appointments and telemedicine.	Coordination & navigation; Direct service
[4]	DeGarmo et al. 2022	Oregon (nine counties)	Promotores de salud were bilingual and bicultural community members recruited through close partnerships with and hired by CBOs. Promotores de salud were trained to conduct outreach that was culturally responsive (highlighted common Latinx cultural values); share information in Spanish; mitigate misinformation; increase trust; and facilitate community access to testing events and COVID-19 related resources. Promotores de salud were included in meetings with the state health authority, county agencies, and CBOs.	Providing culturally appropriate information; Outreach
[5]	Ko et al. 2022	Yakima Valley Community, Washington state	Trained CHWs implemented symptomatic and weekly asymptomatic testing of students. School-based testing program leveraged established school-academic partnerships and community-based participatory approaches implemented within the community before the pandemic.	Culturally appropriate information; Direct service
[6]	Kruse et al. 2022	Massachusetts (six community health centers)	CHWs served on a center-wide community advisory board that met quarterly to advise on COVID-19 testing acceleration plans and to implement expanded testing services both on and offsite of community health centers.	Advocacy; Evaluation & research
[7]	Lee et al. 2022	Massachusetts	Staff at community health centers and their partners participated in semi-structured qualitative interviews to explore the perceptions of COVID-19 testing barriers in six predominantly low-income communities in Massachusetts.	Evaluation & research
[8]	Martinez et al. 2022	San Diego County and Imperial County, California	County health department funded development and expansion of CHW-led programs. CHWs helped with contract tracing, communications and outreach, and setting up vaccine appointments for impacted communities.	Providing culturally appropriate information; Coordination & navigation; Outreach

Study Number	Study Team	Location	CHW Description in Study	C3 Roles
[9]	Pirraglia et al. 2021	Springfield, Massachusetts	Bilingual CHWs from community health centers were integrated into care management teams. They used a data registry to identify high-risk patients and leveraged a culturally and linguistically responsive needs assessment tool to inform and implement a no-contact resource delivery service. CHWs utilized a case management system to track referrals and log information including patients' contacts, needs, and delivery of resources (materials, food, and services). CHWs also documented actions in the electronic medical record.	Assessments; Providing culturally appropriate information; Coordination & navigation; Direct Service
[10]	Rivera-Núñez et al. 2022	New Jersey (four counties with high numbers of Black/Latinx populations and COVID-19 burden)	Black and Latinx health care workers were interviewed for their perspectives on the impact of the COVID-19 pandemic on their role in the essential health care workforce.	Evaluation & research
[11]	Stadnick et al. 2022	South Central San Diego, California	Nine promotores de salud participated as members on a Community Advisory Board in a seven-session Theory of Change process which included a consensus-building design workshop to identify common themes, necessary conditions, actions, measures and indicators of success to mitigate barriers to equitable COVID-19 testing and vaccination.	Advocacy; Assessments; Evaluation & research
[12]	Thoumi et al. 2022*	Piedmont region, North Carolina	Non-clinical CHWs were hired through community partners to implement COVID-19 testing and vaccination services. CHWs helped community members set up testing appointments and navigate language and technology barriers.	Providing culturally appropriate information; Coordination & navigation; Direct service
[13]	Thoumi et al. 2022*	Chicago, Illinois	Church-based testing was implemented with a community health workforce in predominantly Black communities. CHWs hired as employees were contracted on a month-to-month basis.	Direct service
[14]	Thoumi et al. 2022*	Rhode Island	Promotoras were employed on 2-year contracts and worked as linkages between Latinx and immigrant community members and the health system partner, including three free clinics.	Providing culturally appropriate information; Coordination & navigation; Direct service
[15]	Thoumi et al. 2022*	Southwest Florida	Promotoras were recruited from local rural Latinx communities in Florida. Promotoras were key to enrolling and engaging community members in focus group discussions and surveys regarding barriers to COVID-19 testing and vaccine uptake. Promotoras worked with research investigators to develop culturally tailored communication materials and marketing strategies to increase vaccine uptake. Promotoras were provided training certificates (e.g., Collaborative Institutional Training Initiative certification) and support from partner CBOs to obtain future work.	Providing culturally appropriate information; Outreach; Evaluation & research
[16]	Whanger et al. 2022	Rural West Virginia	Eleven regionally located "flex agents" were hired to expand testing capacity across the state of West Virginia. Flex agents were placed in clinic sites to help conduct SARS-CoV-2 polymerase chain reaction tests. Flex agents also helped complete paperwork, prepare test kits, and support drive-through testing. Flex agents helped mitigate the barrier of limited testing staff within clinical sites.	Direct service

*Read [Case Examples](#) from the *Health Equity Policy Framework* report for more information.

References

1. [Barrett ES, Andrews TR, Roy J, et al. Community- versus health care organization-based approaches to expanding at-home COVID-19 testing in Black and Latino communities, New Jersey, 2021. Am J Public Health. 2022;112\(S9\):S918-S922.](#)
2. [Berkley-Patton J, Thompson CB, Templeton T, et al. COVID-19 testing in African American churches using a faith-health-academic partnership. Am J Public Health. 2022;112\(S9\):S887-S891.](#)
3. [Bigelow BF, Saxton RE, Flores-Miller A, et al. Community testing and SARS-CoV-2 rates for Latinxs in Baltimore. Am J Prev Med. 2021;60\(6\):e281-e286.](#)
4. [DeGarmo DS, De Anda S, Cioffi CC, et al. Effectiveness of a COVID-19 testing outreach intervention for Latinx communities: A cluster randomized trial. JAMA Netw Open. 2022;5\(6\):e2216796.](#)
5. [Ko LK, Tingey L, Ramirez M, et al. Mobilizing established school partnerships to reach underserved children during a global pandemic. Pediatrics. 2022;149\(12 Suppl 2\).](#)
6. [Kruse GR, Pelton-Cairns L, Taveras EM, et al. Implementing expanded COVID-19 testing in Massachusetts community health centers through community partnerships: Protocol for an interrupted time series and stepped wedge study design. Contemp Clin Trials. 2022;118:106783.](#)
7. [Lee RM, Handunge VL, Augenbraun SL, et al. Addressing COVID-19 testing inequities among underserved populations in Massachusetts: A rapid qualitative exploration of health center staff, partner, and resident perceptions. Front Public Health. 2022;10:838544.](#)
8. [Martinez ME, Nodora JN, McDaniels-Davidson C, Crespo NC, Edward AA. Equitable COVID-19 vaccination for Hispanics in the United States: A success story from California border communities. Int J Environ Res Public Health. 2022;19\(1\).](#)
9. [Pirraglia PA, Torres CH, Collins J, et al. COVID-19 mitigation for high-risk populations in Springfield Massachusetts USA: A health systems approach. Int J Equity Health. 2021;20\(1\):230.](#)
10. [Rivera-Nunez Z, Jimenez ME, Crabtree BF, et al. Experiences of Black and Latinx health care workers in support roles during the COVID-19 pandemic: A qualitative study. PLoS One. 2022;17\(1\):e0262606.](#)
11. [Stadnick NA, Cain KL, Oswald W, et al. Co-creating a theory of change to advance COVID-19 testing and vaccine uptake in underserved communities. Health Serv Res. 2022;57 Suppl 1\(Suppl 1\):149-157.](#)
- 12-15 [Thoumi A, Kaalund K BS, Mason G, et al. Scaling up equitable access to community-based COVID-19 testing: Strategies from the RADx-UP initiative. Durham, NC: Duke Clinical Research Institute, Duke-Margolis Center for Health Policy, UNC Center for Health Equity Research. 2022.](#)
16. [Whanger S, Davis SK, Kemper E, Heath-Granger J, Hodder SL. Novel strategies to increase COVID-19 testing among underserved and vulnerable populations in West Virginia. Am J Public Health. 2022;112\(S9\):S892-S895.](#)

Disclosures

The authors have no financial interests related to testing or other content included in this report to disclose.

About the Duke Clinical Research Institute (DCRI)

Part of the Duke University School of Medicine, DCRI is the world's largest academic clinical research organization. They conduct innovative research to deliver on their mission to share knowledge that improves the care of patients around the world. DCRI projects are led by physician scientists whose grounding in patient care helps to inform their research, and supported by staff who have deep expertise in operationalizing global studies. For more information, visit dcri.org.

About the UNC Center for Health Equity Research (CHER)

Part of the UNC School of Medicine, CHER brings together collaborative, multidisciplinary teams of stakeholders to improve health in North Carolina communities, with a shared commitment to innovation, collaboration, and health equity. This shared commitment serves as a bridge among their disciplines and levels of experience. CHER members generate new knowledge and contribute to the science of health equity research and implementations, thus driving innovation in collaboration with communities to improve well-being. For more information, visit med.unc.edu/cher.

About the Duke-Margolis Center for Health Policy

The Robert J. Margolis, MD, Center for Health Policy at Duke University is directed by Mark McClellan, MD, PhD, and brings together expertise from the Washington, DC, policy community, Duke University, and Duke Health to address the most pressing issues in health policy. The mission of Duke-Margolis is to improve health, health equity, and the value of health care through practical, innovative, and evidence-based policy solutions. Duke-Margolis catalyzes Duke University's leading capabilities, including interdisciplinary academic research and capacity for education and engagement, to inform policy making and implementation for better health and health care. For more information, visit healthpolicy.duke.edu.

RAD~~X~~UP 

Duke | **MARGOLIS CENTER**
for Health Policy



SCHOOL OF MEDICINE
Center for Health Equity Research



Duke Clinical Research Institute