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Community Health Worker Integration with and Effectiveness in Health Care and Public Health in the United States

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Abstract

Community health workers (CHWs) have worked in a variety of settings in the United States for more than 70 years and are increasingly recognized as an essential health workforce. CHWs share life experience with the people they serve and have firsthand knowledge of the causes and impacts of health inequity. They provide a critical link between marginalized communities and health care and public health services. Several studies have demonstrated that CHWs can improve the management of chronic conditions, increase access to preventive care, improve patients' experience of care, and reduce health care costs. CHWs can also advance health equity by addressing social needs and advocating for systems and policy change. This review provides a history of CHW integration with health care in the United States; describes evidence of the impact of CHW programs on population health, experience, costs of care, and health equity; and identifies considerations for CHW program expansion.

INTRODUCTION

Community health workers (CHWs) are increasingly recognized as an essential part of the health workforce globally, and their presence has been growing steadily in high-income countries including the United States (92). In low- and middle-income countries, CHWs expand access to scarce health care resources. In higher-income countries, CHWs work to improve overall health in under-resourced communities by providing social support, care coordination, navigation, coaching, and advocacy. Despite having the highest per capita spending on health care of any country, the United States has poor health and health care outcomes relative to other high-income countries (117). The United States is also home to stark health inequities, which are driven largely by social determinants of health (SDOH)—the conditions in which people are born, grow, live, work, and age—and by structural determinants of health—cultural norms, policies, and practices that define the often inequitable distribution of SDOH (21, 79). In the United States, the majority of CHWs serve communities that have experienced structural oppression and who are marginalized by traditional health care systems, including Black, Latine, American Indian/Alaska Native, and Asian/Pacific Islander communities, as well as rural and low-income communities (15, 52). CHWs provide a critical link between these communities and the health care and public health services they need, improving access to care, cultural and linguistic competence of care, and health outcomes. Moreover, CHWs can improve well-being by addressing social and structural determinants of health, which often play a greater role in health outcomes than health care does (20). As the United States increases investments in the CHW workforce, it is important to understand the current state of evidence regarding CHW effectiveness in health care, public health, and community-based settings.

This article builds on a 2014 review (92) to summarize current evidence related to the integration of CHWs into health care and public health services and their effectiveness in the United States. We provide a brief history of CHW integration with health care in the United States, describe models of health care integration, and review and assess the evidence regarding the impact of CHW programs on population health, patients' experience of health care, health care costs, and measures of health equity. Finally, we present an overview of future directions in improving the integration of CHWs into US health care and public health.

COMMUNITY HEALTH WORKERS IN THE UNITED STATES: DEFINITIONS AND ROLES

CHWs, also known as *promotoras* or *promotores de salud*, Community Health Representatives, community health navigators, lay health workers, and community health advisors, among other terms, have been working in the United States for more than 70 years. There is no universal definition of a CHW (88, 105), but the 2009 American Public Health Association (APHA) definition (8) is the most widely accepted:

> A community health worker is 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 community health 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. A community health worker also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support, and advocacy.

CHWs operate in a range of settings and may perform many different roles. There have been multiple efforts to create a standardized definition of the CHW role and a comprehensive set of CHW core competencies. The 1998 National Community Health Advisory Study was the first

comprehensive workforce survey to characterize the diverse titles and roles performed by CHWs (66). In 2016, the same authors joined the Community Health Worker Core Consensus (C3) Project, using a participatory process to develop a single set of CHW roles and core competencies across all settings where CHWs work (103). The C3 Project solicited feedback from CHWs across the United States in health care, public health, and community settings. They identified 10 core CHW roles: cultural mediation, culturally appropriate health education, care coordination, coaching and social support, advocacy, individual and community capacity building, direct service, assessment, outreach, and support for evaluation and research.

HISTORY OF CHW INTEGRATION IN US HEALTH CARE AND PUBLIC HEALTH

CHWs have worked in a variety of settings in the United States for at least 70 years. A 2007 Health Research and Services Administration report (45) provided one of the first comprehensive studies of the CHW workforce in the United States, detailing a history beginning in the 1950s with grassroots efforts conducted by Indigenous workers focused on outreach and education initiatives. CHWs were included in a few federal antipoverty programs and collaborations with public health departments in the 1960s, and, in 1968, the Indian Health Service established the Community Health Representative program to support American Indian and Alaska Native tribal members in meeting their health and health care needs (45, 51). CHW programs continued through the 1970s and 1980s primarily through disease-specific, short-term public and private grants (45). Although several national and state legislators introduced bills that proposed increases to federal and state funding for CHWs throughout the 1990s and early 2000s, none passed, despite calls to integrate CHWs as members of the health care delivery team (45, 113, 126). Throughout this period, CHWs continued to serve as leaders in social justice efforts, such as advising new immigrants on their rights, leading voter registration drives, and writing to and meeting with legislators to advocate for health care for all and for increased resources in disenfranchised communities (72, 77, 90).

The 2010 Patient Protection and Affordable Care Act (ACA) and the growth of value-based payment catalyzed expansion of CHW programs within health care (111). As health care systems became increasingly responsible for total costs of care through capitated payments, they sought strategies to reduce preventable or excessive utilization, particularly among patients with complex medical and social needs. Health systems simultaneously began to integrate strategies for addressing SDOH as evidence of their effects on health outcomes mounted and pressures for health systems to advance health equity intensified (48). Regulatory changes in 2014 improved pathways for financing CHW programs through state Medicaid plans (31), although many programs continued to rely on short-term grant funding (104).

More recently, the COVID-19 pandemic exposed gaps in public health infrastructure, galvanized attention to long-standing health inequities, and reinforced the importance of community knowledge in connecting marginalized communities with health care resources. Since the pandemic began, CHWs were on the front lines addressing social and financial hardship, providing linguistically and culturally relevant health information, and building trust in health providers and in health services, such as vaccinations (118). The Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 and Reconciliation Act (American Rescue Plan) of 2021 allocated funds to the Centers for Disease Control and Prevention (CDC) to expand CHW capacity to provide public health services and effectively integrate with state and local public health departments (30).

In 2021, a decade after "community health worker" was made an official employment designation, the US Bureau of Labor Statistics (BLS) estimated that more than 60,000 CHWs were employed in the United States, with the workforce expected to grow by 17% by 2029 (24). Given

the diversity of and inconsistency in titles used for roles under the community health worker umbrella, this figure may be an undercount, particularly for CHWs employed by community-based organizations (CBOs); the BLS estimate also excludes CHWs in the United States who are unpaid volunteers. According to the BLS, approximately one-third of CHWs employed in the United States work for health care or health insurance organizations, 22% work for government agencies, and 21% work for CBOs (24).

COMMON MODELS FOR INTEGRATING CHWS WITH PUBLIC HEALTH AND HEALTH CARE

In the United States, there are several models for integrating CHWs with health care and public health, as well as some cross-cutting challenges. Four overarching integration models emerged from the literature: community-clinical linkages, CHWs embedded in health care institutions, employment by payers, and employment through public health departments (**Table 1**).

Community-Clinical Linkages

Community-clinical linkages, or partnerships between CBOs and local health care institutions, are a key model for enabling CHWs to enhance health care delivery and access to services for individuals and communities. CHWs originated as a community-based workforce, although a growing share of CHWs are now employed in health-related settings (78). In community-clinical linkages, CHWs may conduct outreach to connect community members to primary or specialty care as part of a broader range of services, or they may receive referrals from health care providers for patients who can benefit from support for social needs, health coaching, or advocacy (73). CHWs may be employed by a CBO or a health system, and partnerships may be formal or informal (73, 78). This model has been evaluated primarily using observational methods, with study designs focused on description and pre-post comparisons, leading to gaps in evidence (73). The significant resources required for more rigorous study designs may be a barrier for smaller CBOs dependent on grant funding, especially without academic partnerships. However, a few randomized controlled trials have demonstrated that CBO-based CHWs who are integrated with health care teams—i.e., attending multidisciplinary care team meetings and clinic visits with patients—can improve health behaviors and clinical outcomes related to chronic diseases such as diabetes (64, 91).

Employment Within Health Care

In a second model that has expanded over the last two decades, CHWs are employed by health care institutions, including federally qualified health centers (FQHCs), hospitals, and health systems (24, 78). Employing CHWs as members of health care teams can promote interprofessional communication, allow CHWs to support care navigation more easily through access to electronic health records, increase patients' trust in health care providers, and enhance patients' experience of care (93). CHWs can provide key support as members of primary care teams, in the posthospital discharge period, and in outreach roles. This model is one of the most rigorously studied, with multiple reviews highlighting strong evidence for effectiveness in improving health outcomes, such as chronic disease control, when CHWs are engaged in team-based care (29, 34, 35).

Integration with Payers

Following the passage of the ACA, a third model emerged in which CHWs are integrated into payer arrangements. These have included accountable care organizations and other demonstration projects, with state Medicaid plans utilizing several different strategies for integrating CHWs with health care teams. In Oregon, one of the first states to use a section 1115 Medicaid waiver

Table 1 Models of community health worker integration with health care

Integration model	Example	Evidence
Community-clinical linkage	DIALBEST. A community-based participatory research coalition developed a CHW-led DSME program for Latine adults who attended a community-based primary care clinic in Hartford, Connecticut. CHWs were employed by a community-based nonprofit organization and attended weekly meetings with the primary care medical team. CHWs provided culturally tailored DSME classes over 17 home visits during a 12-month period and collaborated with participants to develop individually tailored type 2 diabetes self-management plans.	In a randomized controlled trial, participants in the CHW intervention group had greater reductions in HbA1c compared with participants who received usual care at 3, 6, 12, and 18 months (91).
Employment within health care	Transitions Clinic. Community health workers were embedded in a primary care–based complex care management program (Transitions Clinic), which provided expedited primary care for individuals recently released from California state prisons. CHWs provided resource connection, medical and social services navigation, and support with self-management of chronic diseases.	In a randomized controlled trial, participants in the CHW intervention had similar rates of primary care utilization and lower rates of ED utilization compared with participants who received expedited primary care only (122).
Integration with payers	Community Connector Program. Arkansas Medicaid funded the Tri-County Rural Health Network to implement the Community Connector Program, which employed CHWs to identify Medicaid-eligible adults with unmet long-term care needs and connect them to agencies offering needed services.	In a longitudinal quasi-experimental study, growth in Medicaid spending was 23.8% lower among the CHW intervention group compared with a propensity score–matched comparison group of Medicaid enrollees and produced net savings of $2.619 million to Arkansas Medicaid over 3 years (39).
Coordination by public health department	Seattle–King County Healthy Homes Project. The Seattle–King County Health Department coordinated a coalition-based CHW-led asthma intervention for children and families to reduce exposure to allergens and irritants in the home. CHWs employed by the health department conducted home environment assessments; developed individualized action plans; and provided education, materials, social support, and as-needed follow-up by phone and email.	In a randomized controlled trial, participants in the CHW intervention group had greater improvements in asthma symptom–free days and caregiver quality of life as well as use of fewer asthma-related urgent health services (ED, hospital, or unscheduled clinic visits) compared with participants who received education and materials only (26).

Abbreviations: CHW, community health worker; DSME, diabetes self-management education; ED, emergency department; HbA1c, glycated hemoglobin.

to fund CHW services, these strategies included employing CHWs directly to work with beneficiaries across multiple health systems, creating centralized hubs in which a managing agency coordinated a wide range of service providers, including CHWs, for health care and other partners, and providing funding for health systems to directly hire and embed CHWs in primary care and hospital-based teams (42). Studies of CHWs engaged by payers have shown evidence of effectiveness in reducing hospitalizations and emergency care visits and containing health care costs (53).

Coordination by Public Health Departments

A fourth model is for public health departments to provide CHW services to patients from multiple health care entities, including public and private health care providers, as well as to the

community at large. CHWs have long been embedded in public health departments in response to specific public health crises; for instance, in a 1997 survey of health care service providers in the San Francisco Bay Area, 44% of CHWs were employed by county health departments; many of these workers focused on care for people with HIV/AIDS (74). The recent influx of grant funding from the CDC in response to the COVID-19 pandemic has temporarily expanded the CHW workforce within state and local public health departments. CHWs have partnered with or acted as contact tracers; provided health education and navigation to individuals diagnosed with COVID-19 and their households; and promoted access to testing, treatment, and vaccination (118).

Across all models of integration, there are two common challenges. First, CHWs often work in more than one setting to bridge gaps between health care, public health, and social service organizations. As a result, CHWs may be employed by one entity, funded by another, and work in a third. The models of integration described above are not mutually exclusive and reflect the fragmentation of the US health care system. Multiple models and strategies may be needed to support CHWs' ability to break down barriers between systems of care. Second, although CHWs' integration with health care can lead to greater recognition of the profession and enhanced quality of care, their roles may be in danger of becoming coopted. CHWs are part of a grassroots workforce with strong ties to the community and a tradition of advocacy and pursuit of social justice (15). Not all individuals who perform CHW functions, such as care coordination or connection to resources, are true community health workers; CHWs are defined not only by what they do, but also by shared lived experience and close connection to the communities they serve. Health care institutions' standard recruitment strategies are often ill-suited to the CHW workforce, relying on Web-based application portals that require technological literacy and Internet access and overemphasizing educational background or prior health care experience, while overlooking essential qualities such as empathy, active listening skills, and knowledge of the community (25, 50). Clinicians and health system leaders may also discount CHWs' expertise and unique patient-centered role, focusing instead on their ability to convince patients to accept medical advice, reduce costly hospitalizations, or complete administrative tasks at a lower cost than when performed by other clinical team members (15). Qualitative interviews with CHWs and with health care organizations employing CHWs emphasized the importance of educating clinical care team members on the unique contributions and value of CHWs in improving health outcomes for patients, clearly outlining a defined scope of work, and ensuring that CHWs can continue to stay connected to the community (4, 6).

EVIDENCE FOR CHW EFFECTIVENESS

Evidence for the effectiveness of CHW interventions in the United States has grown substantially over the last 20 years. Multiple systematic reviews have characterized the state of CHW evidence (44, 53, 92, 93, 121). Historically, two key challenges were highlighted in these systematic reviews. First, study designs tended to be of lower quality, such as pre-post assessments; and second, CHW programs vary widely in terms of their disease focus, program design, and approach to CHW hiring and supervision, making it difficult to compare evaluation results across interventions (93). However, more recently, the state of evidence has evolved on both fronts. Dozens of CHW interventions in the United States have been tested through randomized controlled trials (RCTs) and other stronger quasi-experimental methods such as propensity score–matched cohort studies. There are also a growing number of evaluations of disease-agnostic CHW interventions that address upstream causes of poor health across varying populations (59, 97, 116). These studies have demonstrated that CHW interventions can lead to improvements across the "triple aim" of health care (18)—improved population health, improved patient experience of care, and reduced costs—and hold promise for advancing health equity.

Improved Population Health

In the United States, most CHW interventions have focused on people with chronic health conditions, and there is strong evidence for CHW effectiveness in improving both health behaviors and health outcomes related to chronic disease (34, 35, 63). The majority of CHW programs are disease specific, with systematic reviews demonstrating strong evidence for improvements in the management of diabetes (85), hypertension (23), HIV (61), and pediatric asthma (96). CHW programs focused on diabetes have been some of the most rigorously studied; several RCTs demonstrated improvements in glycated hemoglobin (HbA1c) levels (28, 64, 91, 98, 115). In patients with cardiovascular disease (CVD) and CVD risk factors, RCT-tested CHW interventions have shown improved lipid profiles (7) and reductions in blood pressure (7, 16, 47). CHW interventions have also improved antiretroviral medication adherence among people with HIV, as measured by reduced HIV viral load and increased CD4 cell count (62, 76). One review found that positive effects were more common among HIV interventions in which CHWs provided more frequent contact over a duration of at least 24 weeks (61); some studies of shorter interventions found no significant results (99, 112). CHW interventions with families of children with asthma have also shown improvements in asthma symptoms (26, 89). Emerging evidence, primarily from propensity score–matched cohort studies, also suggests that US-based CHW interventions can improve pregnancy and perinatal outcomes, including reductions in low-birthweight births and increases in prenatal and postnatal care (37, 100, 107, 108). Studies have also found improvements in patient and caregiver quality of life for individuals with chronic health conditions. Several RCTs have demonstrated improvements in participant self-efficacy (63), depressive symptoms (95, 102), and caregiver quality of life (68).

CHWs often provide culturally relevant and nonjudgmental support regarding health behavior change for a range of health conditions. A systematic review of CHW interventions with adults with diabetes found that several studies demonstrated increased patient knowledge of diabetes and self-care, as well as improvements in diet, physical activity, and self-monitoring of blood glucose (85). Several RCTs have demonstrated increased appointment-keeping and medication adherence among patients with hypertension (23), and one RCT demonstrated increased rates of smoking cessation (9). A Cochrane meta-analysis also found evidence for increased initiation and duration of breastfeeding (71).

Improved Patient Experience of Care

CHWs' lived experiences and trust-building qualities make them uniquely equipped to improve access to care and increase uptake of preventive services, particularly among communities who have been harmed by the health care system or who have systematic barriers to care, such as limited insurance access or language barriers. Several systematic reviews established CHW effectiveness at increasing cancer screening rates (12, 17, 75, 80, 82, 123): CHW interventions have demonstrated improvements in screening rates for breast cancer (83), cervical cancer (86) and colorectal cancer (32). Other systematic reviews have shown some effectiveness in increasing access to primary care services (82). In several RCTs, CHWs increased access to primary care, including timely posthospital follow-up care (120), follow-up care for pediatric asthma (84), and follow-up care after identification of risk factors such as hypertension (67).

Some evidence indicates that CHWs can also improve patients' experience of care, with RCT-tested CHW interventions demonstrating improvements in patient-reported quality of hospital discharge communication (58), patient-reported quality of primary care (56, 59), and patient satisfaction with breast cancer screening (114). However, a systematic review showed mixed evidence for improvements in patient satisfaction (82).

Reduced Cost of Care

Reduction in health care utilization is one mechanism by which CHW interventions may reduce the cost of care. A 2017 systematic review of US-based studies evaluating CHW interventions among patients with chronic health conditions found that many, but not all, demonstrated reductions in emergency department (ED) and hospital utilization, with significant heterogeneity in the quality of evidence and with positive results being more common in nonrandomized studies (53). A pooled analysis from three RCTs of a CHW intervention with low-income adults in Philadelphia demonstrated a 34% reduction in total hospital days and shorter mean length of stay (120). Other RCTs found that participants who received CHW support had lower rates of ED utilization, including one with individuals with chronic conditions who were recently released from California state prisons (122) and two with adults with type 2 diabetes (13, 41). Among children with asthma, CHW interventions have reduced hospitalizations and unscheduled health care utilization (40, 60, 89), although some have shown improvements only in symptoms, knowledge, and behavior without showing significant reductions in ED visits or hospitalizations (54).

Relatively fewer studies have included evaluations of cost savings or cost-effectiveness of CHW interventions, and systematic reviews have not found sufficient evidence to consistently demonstrate cost savings primarily due to the heterogeneity of effects across different interventions (53, 82, 121). However, recent evidence indicates that some CHW programs can result in cost savings. Among low-income adults with multiple chronic health conditions, one CHW intervention demonstrated a return on investment of $2.47 to the average Medicaid payer within the fiscal year (57). An RCT of a pediatric community-based asthma management initiative showed an adjusted return on investment of $1.33 after controlling for changes in a comparison population (19), and other pediatric asthma-related CHW interventions have also demonstrated cost savings (26, 68). A study of Hispanic adults in Texas with type 2 diabetes projected that CHW support led to gains in quality-adjusted life years for costs lower than the typical cost-effectiveness threshold of $50,000 (22). Several studies of CHW interventions with Medicaid and Medicare beneficiaries have demonstrated cost savings relative to propensity score–matched controls. In a study of Arkansas adults with unmet long-term care needs, CHW support led to a 23.8% reduction in annual Medicaid spending compared with a propensity score–matched cohort (39). Another study evaluating six CHW programs found that five reduced utilization and three resulted in significant reductions in cost of care based on Medicare and Medicaid claims (36). However, a randomized program evaluation of a CHW intervention with Medicaid recipients in Detroit found that reductions in costs related to ED utilization were offset by increases in ambulatory care use, resulting in more setting-appropriate care but no net cost savings (46).

Advancing Health Equity

The Institute of Medicine's 2003 report *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* (113) highlighted CHWs' ability to reduce racial and ethnic inequities in health care through increasing access to care for marginalized groups and acting as a liaison between communities of color and the health care system. CHWs both serve disadvantaged communities and are members of those communities themselves. In a 2014 workforce survey, 65% of CHWs were Hispanic or Latine, 41% were Black or African American, and 16% were American Indian or Alaska Native (10). CHWs overwhelmingly work with racial and ethnic minority groups who are disproportionately affected by most leading causes of morbidity and mortality, receive poorer quality medical care compared with white patients, and experience barriers to optimal health as a result of structural racism (2, 14).

Conceptually, CHWs' ability to advance health equity stems from their work on multiple levels: individual, institutional, and societal (72, 90, 106). At the individual level, CHWs advocate for and with their clients to ensure access to resources and health care, such as fighting an eviction notice and building capacity for self-advocacy. At the institutional level, CHWs improve cultural and structural competence and quality of care through strategies such as providing antiracism education to health system leaders (119) and changing hospital policies to include routine translation of patient-facing materials (72). Finally, CHWs advocate for social justice at a community and societal level. In one example from the early days of the COVID-19 pandemic, a CHW worked with predominantly Latine employees of a fruit-packing warehouse that was experiencing an outbreak related to poor working conditions (27). The CHW supported workers in advocating for their rights, eventually requiring the owner to improve COVID procedures and pay for testing for all employees. Despite the centrality of advocacy and social justice efforts to CHWs' work, few evaluations to date have assessed CHW interventions' ability to address structural factors or reduce health inequities, for instance, between patients of color and white patients. This is an important direction for future research.

FUTURE DIRECTIONS AND CONSIDERATIONS FOR IMPROVING CHW INTEGRATION IN HEALTH CARE

Community health workers are at a crossroads in the United States. With growing evidence of effectiveness and increasing interest in expanding the workforce, several key challenges have emerged along with opportunities to support effective integration with health care.

Expanding Sustainable Financing Opportunities

Lack of sustainable financing is consistently identified as one of the most significant barriers to CHW expansion and integration with health care (38). Until recently, there was little federal investment in CHW programs, with most programs being funded through short-term grants, hindering CHW workforce expansion (38, 104). State and local agencies have typically used federal or state grants to fund salaried CHW positions. Some health care payers and providers have opted to internally finance CHW programs from core operating budgets based on pilots or other evidence showing return on investment; this approach is often dependent on leadership support and institutional financial health (3). Thus, CHW programs are often precarious, resulting in the loss of skilled CHWs, higher turnover, and interrupted services for marginalized communities when grants end (93).

Shifts to value-based payment have created incentives for health systems to fund CHW programs, given their demonstrated or potential ability to reduce costs of care and improve health outcomes for patients who face structural barriers to optimal health (69). As interest in increasing this workforce has grown, states have implemented new mechanisms to support the expansion of CHW programs, particularly after the passage of the ACA (111). A 2014 rule authorized state Medicaid providers to fund CHW services through 1115 waivers or state plan amendments that allow CHWs to deliver preventive care, provide supports for specific populations, or be included in patient-centered medical homes (31). As of April 2022, half of US states had some form of Medicaid financing for CHWs (81). Some states have also created arrangements with managed care organizations to allow them to bill for care provided by CHWs as part of administrative costs or include CHWs as part of care coordination services (81). However, these mechanisms are limited and inconsistent across states and may fund only highly specific CHW functions rather than the broader scope of CHW activities (109). Several organizations, including the APHA, the National Academy of Medicine, and the National Association for Community Health Workers,

have advocated for long-term, sustainable payment for care provided by CHWs (8, 94, 104). Despite recognition of CHWs as critical members of health care teams, there are currently no consistent federal Medicaid or Medicare billing codes that fund CHWs in a predominantly fee-for-service environment, even as other similar workforces such as peer mentors for substance use disorders have expanded through billable services (69). Legislation authorizing CHWs to bill for services through Medicaid or other public benefits offers a pathway to clearer and more sustainable financing for CHWs (109).

Ensuring Rigorous, High-Quality Evaluations of CHW Programs

The strength of evidence for CHW effectiveness has grown significantly in recent years; however, key challenges still remain. Although the number of RCTs testing CHW interventions has grown, many studies and evaluations are of moderate or low quality, relying on observational methods without a comparison group (53, 121). Reliance on these observational studies can be misleading, potentially elevating models that may not truly be effective. Given the advancing state of research in this space, common frameworks for evaluation are critical. One promising initiative is the Community Health Worker Common Indicators (CI) Project, a collaborative of CHW and non-CHW researchers from five states, which aimed to promote CHW-led development and adoption of standardized measures to assess CHW practice (101). The CI Project conducted a literature review and comprehensive stakeholder engagement process to generate consensus on 10 core process and outcome constructs, including participant-level, program- and institutional-level, and societal-level domains. Constructs include level of CHW compensation, enactment of the 10 roles identified by the C3 Project, CHW involvement in decision-making, and participant health and social outcomes, among others. These can be used to assess individual interventions, support comparability of data across programs and regions, and provide evidence to support sustainable financing.

There continues to be substantial variation in the qualifications, roles, compensation, and training of CHWs as well as in the duration and structure of the intervention, frequency of contact, supervision, and level of clinical integration (1, 63, 87, 110). In many ways, this flexibility is a strength of the CHW model, reflecting its ability to tailor to specific communities and institutional settings. However, an important future direction for research is to understand which components of CHW programs are essential to success across variation in contexts and structures. In addition to the use of common evaluation metrics, such as those identified in the CI Project, the continued use of implementation science methods offers a valuable way forward (5).

There are also gaps in specific types of evidence. Few studies incorporate CHWs' roles as change agents or examine effects on community- or societal-level outcomes (101, 110). An important consideration in evaluating CHW programs is to consider metrics of success beyond individual-level health outcomes or cost reductions for health systems and payers. CHWs' roles in increasing access to resources, developing community capacity and building trust, and advocating for changes to power relationships that promote health equity are equally important and must also be considered when determining whether a CHW program is effective and should be sustained or scaled (15). And although some qualitative studies have examined patient and provider satisfaction and experience of care (43), there are still gaps in evidence related to CHW interventions' effects on patient satisfaction with care and health care providers' experience of delivering care.

Finally, although CHWs have regularly been involved in research and evaluation of both CHW intervention effectiveness and other community-focused projects, their roles have often been limited to participant recruitment and data collection (101). CHWs should be directly involved in research and evaluation at all stages, from design through dissemination, and participate in the development of assessment and evaluation metrics.

Translating Evidence Into Best Practices

Thanks to decades of implementation science focused on CHW programs, particularly internationally, clarity is emerging on best practices for CHW programs, including which implementation factors and frameworks contribute to strong outcomes. Much of this implementation science has occurred in a global context, summarized by the World Health Organization in their published guidelines for health policy and system supports for CHW programs (125). Recommendations included selection of CHWs based on membership in the community served; combining theoretical and practical training; adopting supportive supervision practices; providing financial compensation, clear scope of work, and pathways for career progression; integrating with primary health care teams and services; and supporting CHWs in engaging communities. In the United States, growing consensus from groups including the National Center for Quality Assurance and the Community-Based Workforce has identified best practices, including community-based recruitment and hiring, engagement of CHWs in planning and implementation, clear yet flexible role definition, sustainable financing, and effective supervision (33, 70).

There is an opportunity for health systems and payers to create quality guardrails for CHW programs that align with these evidence-informed best practices. Individual CHW training and certification were historically viewed as indications of quality for CHW programs. As of September 2022, 19 US states require formal certification of CHWs for Medicaid reimbursement, and 17 have certifications in development or under consideration. Certifications are typically based on completion of an accredited training program and a minimum number of work or volunteer hours. Advocates for certification believe that this effort may (*a*) help to standardize the training and certification of CHWs across the country, which are currently quite varied; (*b*) legitimize CHWs in the health care space; and (*c*) facilitate reimbursement by Medicare and Medicaid (65, 78). However, others have expressed concerns that certification may exclude CHWs who may not be able to afford credentialing and those who have key experiences and traits that cannot be captured in the credentialing process, including empathy, deep knowledge of their communities, and shared lived experience (11, 49, 65, 124). Moreover, a review found little evidence that CHW certification improves quality (49). Certification may also result in entrenching pay inequities. A recent study of the effects of state-level certification requirements found that CHW certification increased wages among men and white CHWs, with no significant effect for women or nonwhite CHWs, who make up the majority of the workforce (55). Credentialing at the individual level also does not ensure that CHW programs are set up for sustainability or are effectively integrated with health systems where appropriate.

An alternative path that is gaining traction is program-level standards that align with evidence-informed best practices for implementation factors such as hiring, compensation, caseloads, work practice, and supervision. Program-level standards hold health systems, payers, and public health departments accountable for creating environments where CHWs can thrive and may be tied to funding through Medicaid and Medicare (70). This approach would help to ensure that as CHWs become integrated within health care, their roles, identity, and scope of work are protected. As Pérez & Martinez (90, p. 13) cautioned, "The history and underlying purposes of [community health workers] should not be lost in translation in the midst of efforts to institutionalize their role. Our nation will equally benefit from a cost-efficient health care system as much as it would from working to change the root causes of illness."

CONCLUSION

CHWs have emerged as an essential health workforce in the United States, with renewed attention in the wake of the COVID-19 pandemic, which crystallized the need to address social and

structural determinants of health in health care and beyond. CHWs are a critical link between communities, health systems, and public health, and strong evidence demonstrates that they are effective in improving health and well-being, enhancing the experience of care, containing costs, and advancing health equity. They offer a significant opportunity for the US health care system, which has historically paid scant attention to upstream and structural factors that affect health and its distribution among the population. CHWs' ability to promote public health and well-being has thus far been hindered by inadequate, piecemeal funding and limited understanding of their roles. With growing support from US legislators and health system and public health leaders, a future in which CHWs are recognized as key members of the health workforce and have sustainable funding streams is on the horizon. Translating the evidence base on best practices related to intervention structure, supervision, and training into practice will help to ensure that CHWs are supported in their roles and are able to exercise the full extent of their capabilities. As health care systems and policy makers explore ways to expand the workforce and integrate CHWs more fully into health care teams, ensuring that CHWs' roots in community and social justice efforts are preserved is essential to fulfilling their promise: optimal health for all.

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