Title Page

**Community Health Workers: a Look at Effectiveness and Recommendations for Greater Utilization Success in a Value-Based World**

by

**Pia Nicole Blake**

BA, Duquesne University, 2015

Submitted to the Graduate Faculty of

Health Policy and Management

Graduate School of Public Health in partial fulfillment

of the requirements for the degree of

Master of Public Health

University of Pittsburgh

2019

Committee Membership Page

UNIVERSITY OF PITTSBURGH

Graduate School of Public Health

This essay was submitted

by

**Pia Nicole Blake**

on

April 24, 2019

and approved by

**Essay Advisor:** Eric T. Roberts, PhD, Assistant Professor, Health Policy and Management, Graduate School of Public Health, University of Pittsburgh

Essay Reader: Patricia I. Documet, MD, DrPH, Associate Professor, Behavioral and Community Health Sciences, Scientific Director, Center for Health Equity, Associate Director, Evaluation Institute, Graduate School of Public Health, University of Pittsburgh

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Abstract

Eric T. Roberts, PhD

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Pia Nicole Blake, MPH

University of Pittsburgh, 2019

**Abstract**

Numerous evaluations show that community health worker (CHW) programs yield success. While not originally used in the United States, CHW program achievements have deservedly garnered the attention of many for their ability to impact various costly and often preventable diseases/issues, while mobilizing a non-clinical lay workforce to deliver the interventions, thus illustrating their public health relevance. This paper aims to provide an overview of CHW program outcomes, challenges with incorporating utilization of CHW programs into health systems, and options for funding mechanisms for CHW programs.

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Preface

I would like to thank my essay advisor, Eric Roberts, PhD, and my essay reader, Patricia Documet, MD, DrPH for their time. Without their expertise, direction, and patience, this essay would not exist. I would also like to thank my residency preceptor, Thomas James, MD, for his flexibility as I completed my degree requirements. Lastly, I would be remiss if I did not acknowledge the support of my family and friends for which I am always grateful for.

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# Introduction

Initial utilization of community health workers (CHWs) started in low to middle income countries, and still is where these models are widely prevalent today. Nonetheless, once success from their original purpose was discovered, CHW programs began to be implemented all over the world. With a founding history of providing informal non-clinical care in a local setting, the CHW profession traditionally catered to, and remains focused on the community they serve. This philosophy has served the profession quite well, and is reflected in the literature with evaluations that illustrate CHW program success.

In the United States, CHWs work in a variety of settings, and are often funded through various mechanisms. This creates a sizable amount of diversity in the structure and characteristics of CHW programs that have been implemented. A CHW program funded by a university, with the CHWs working strictly in community settings such as homes and schools, may look and function very differently than a CHW program that is funded by a health system where the CHWs work in a hospital setting with occasional visits out into the community. Nonetheless, in all CHW programs, the emphasis is on the CHW’s connection to the community they serve.

 Value-based care models that aim to improve population health are starting to take precedence over fee-for-service models. This has created a desire by many to replicate CHW programs that have demonstrated success in prevention and management of chronic disease into their care plans. For a number of health systems and payer organizations, utilization of high-touch, community-based interventions, is a novel practice. As with the implementation of any unfamiliar programs, challenges will arise. This paper aims to provide an overview of the successes of CHW programs, with particular attention to cost-effectiveness that is correlated with improved health outcomes, as those factors provide evidence for funding and reimbursement opportunities, leading to a sustainable basis for wider utilization of CHWs.

## Public Health Relevance and Justification

The Centers for Disease Control and Prevention (CDC) states that ninety percent of annual healthcare expenditures are for people with chronic and mental health conditions. (CDC, 2019). The CDC also recommends that when prevention is not possible, chronic conditions should be managed in order to control costs. Nearly 860,000 Americans die of heart disease and stroke every year, equating to almost $200 billion in costs to the U.S. healthcare system. Over 1.5 million people each year are diagnosed with cancer in the U.S. alone, and more than 30 million Americans live with diabetes, accounting for $237 billion in costs to the healthcare system. (CDC, 2019). Community health workers have been known to have a positive impact on diabetes management, cancer, and cardiovascular risk reduction. This is evident in a systematic review published in the American Journal of Public Health in 2016, which found positive outcomes associated with the use of community behavioral health workers for diabetes management, cancer prevention, and cardiovascular risk reduction (Kim et al., 2016).

### Evidence of Cost Effectiveness in Community Health Worker Interventions

In their review, Kim and co-authors reported several United States based studies where costs analyses were reported.[[1]](#footnote-1) In a 24-month diabetes prevention program, total reported costs were higher by $1,569 when a registered dietician delivered the intervention ($7,596) compared to when a registered dietician was accompanied by a CHW ($6,027). Cost savings in this study were observed for the two-year study period, and can be attributed to savings in fewer days in the hospital per program participant, and lower costs per episode when health care was needed. (Lawlor et al., 2013). It should be noted that the CHWs used in this study were paid “nominally” ($100 per week in phase one and $200 per month in phase two) however, the researchers noted that the results illustrated that the program’s use of CHWs alongside registered dieticians could be translated to a community setting.

In a cardiovascular disease risk reduction program where patients with diabetes, hypercholesterolemia, or hypertension, received an intervention delivered by a care team comprised of nurses and CHWs for one year, cost savings were estimated at upwards of $150 per 1% reduction of systolic and diastolic blood pressure. Similarly, cost savings were estimated at $149 for 1% reduction in HbA1C and $40 for 1% reduction in low-density lipoprotein cholesterol, a risk factor for coronary artery disease. The study concluded that CHW teams led by nurses are cost-effective for managing diabetes and reducing cardiovascular health disparities in minority groups. Their conclusion is supported by the results, which indicated that positive clinical outcomes were sufficiently large enough to offset the higher spending associated with greater medication adherence and additional laboratory tests. (Allen, Himmelfarb, & Szanton 2014). The CHW-NP intervention took place for a period of one year, with majority of the outcomes measured as differences from baseline to one-year follow-up.

In a cervical cancer prevention focused intervention among low income, majority racial minority women, CHWs were used for one year to improve follow-up among patients after an abnormal Pap smear. It was found that the intervention improved the rate of 6-month follow-up by 29% with an incremental cost of $959 per follow-up. An increase of 29% in the study population is particularly significant because in low income, diverse populations, loss to follow- up after an abnormal Pap smear can get as high as 64%. (Wagner, Engelstad, McPhee, & Pasick, 2006). While the researchers estimate that the cost per participant would be lower in areas of the U.S. outside of CA where labor costs were lower, it is worth mentioning that the researchers noted that additional evidence was needed before determining whether this program was transferrable to other settings, however the results remain promising.

A study where women of Mexican descent were given a CDC recommended outreach intervention by CHWs with the goal of increasing cervical cancer screenings found that the cost per additional woman screened was $980 when a CHW administered video was shown to participants, compared to the non CHW intervention. Furthermore, use of the video and a flipchart with additional materials provided by CHWs to reinforce the video message, resulted in 6.9% more women screened at an additional cost of $3.90 per participant, compared to when the outreach program was administered by CHWs using a flipchart only. (Lairson, Chang, Byrd, Smith, Fernandez, & Wilson 2014). The cost-effectiveness evaluation was done from the patient and provider perspectives, considering both funder and societal costs. Noteworthy limitations of this study include the fact that the screening outcome and personnel time were self-reported. The researchers did note however that the validity of the self-reported screening outcome was “comparable or better” than those used in other studies of self-reported screenings that were also validated by clinical record review. (Lairson et al., 2014).

A mixed methods study conducted by researchers at the Center for Medicare and Medicaid Innovation and the University of Chicago, found five of six CHW programs that were evaluated resulted in reduced utilization/spending in relation to the comparison group. Additionally, all the programs indicated positive qualitive findings regarding quality care, and half of the programs that were studied showed a reduction in the total cost of care. (Cross-Barnet et al., 2018). Researchers noted that CHW integration with the clinical care team is essential to CHW effectiveness. Additionally, in all programs that were shown to result in total cost of care savings, patients and caregivers reported improved healthcare access and reduced caregiver burden. (Cross-Barnet, et al., 2018).

As discussed above, there are multiple examples of CHW programs that have demonstrated costs savings. Furthermore, a 2016 article published in the American Journal of Public Health found that CHWs were as successful, or performed even better than nurses as counselors/ case managers in a self-help diabetes management program in both psycho-behavioral (self-efficacy, depression, quality of life) and physiological outcomes (such as A1C, blood glucose levels, cholesterol levels, etc.) (Kim et al., 2016). Although a cost comparison was not completed in this study, CHWs are almost exclusively non-clinical lay people, and therefore would be employed at a lower salary rate than a registered nurse or BSN. The findings of the Kim study warrant additional research into the potential to employ lay CHW persons to serve as case management support instead of people who are clinically trained.

The Institute for Healthcare Improvement’s (IHI) Triple Aim framework focuses on addressing the following simultaneously: improving the patient experience of care (including quality and satisfaction); improving the health of populations; and reducing the per capita cost of healthcare. Community health workers fit well into the Triple Aim framework, as there is existing evidence that the profession does indeed impact the three Triple Aim goals. A CHW model that was implemented between November 2004 – July 2015 in Chicago, with the objective of decreasing asthma morbidity and improving quality of life among the enrolled children, utilized CHWs to provide individualized asthma education during three to four home visits during a six-month period, and act as liaisons between families and the medical system. The findings from the evaluation illustrate that the Triple Aim was achieved in this project – parental quality of life was improved by clinically and statistically significant levels; improved asthma control was documented through reduced symptom prevalence and lower levels of “urgent health resource utilization”; [[2]](#footnote-2) and an estimated $5.58 was saved per dollar spent on the project. (Margellos-Anast, Gutierrez, & Whitman et al., 2012). Through a cost-savings analysis, researchers determined that the Illinois Department of Healthcare and Family Services (the Medicaid administrator where the study took place) saw a cost-savings of $2561.60/participant. (Margellos-Anast et al., 2012). The study did not look at whether cost-savings or utilization behavior were maintained over long time periods.

A recently published analysis of literature through July 2016 (twenty-nine studies were ultimately included for the analysis) looked at economic value, and cost effectiveness of interventions that utilized CHWs with the goal of preventing heart disease, type two diabetes, and management of type 2 diabetes. The analysis revealed that interventions where CHWs were employed for prevention of cardiovascular disease and management of type two diabetes are cost-effective based on a $50,000 benchmark for cost per quality-adjusted life year gained (the $50,000 benchmark per quality was labeled as “conservative” in the analysis). (Chattopadhyay et al., 2019). The researchers found that the median cost to implement a CHW cardiovascular disease prevention intervention was $329 per patient per year (based on eight studies); $600 for prevention of type 2 diabetes CHW programs (based on seven studies); and $571 for CHW programs that focused on the management of type 2 diabetes (based on 13 studies). The researchers included outpatient visits, medications, labs, emergency department visits, and inpatient stays in their make-up of healthcare costs. They found the median change in healthcare costs per patient per year was -$82 for cardiovascular disease prevention, and -$72 for type 2 diabetes management. The time span for the cost-effectiveness assessments differed. The range was 6-month within-trial assessments to lifetime models covering 480 months, with 70% being 240 months or fewer. (Chattopadhyay et al., 2019).

## Public Health Priorities that Community Health Worker Programs Address

A literature review of sixty-seven articles conducted by Kyounghae Kim, and others, found that the two most common disease areas CHWs addressed were cancer prevention and cardiovascular risk reduction, followed by diabetes management and blood pressure control (Kim et al., 2016). Moreover, a 2015 CDC report acknowledges “extensive documentation” regarding the use of CHWs for asthma control, immunizations, maternal child health, nutrition, tuberculosis, and HIV/AIDS. (Brownstein & Allen, 2015).

CHW utilization in maternal child health, HIV/AIDS and nutrition contribute towards reaching Millennial Development Goals developed by the United Nations. Similarly, CHW interventions around cancer and cardiovascular risk prevention, as well as diabetes management and blood pressure control, align well with the CDC’s 2016-2020 second strategic priority goal of better preventing the leading causes of illness, injury, disability, and death. (CDC, 2019).

# Who are Community Health Workers

## Community Health Workers Defined

Community health workers, whom are sometimes given other titles such as Promotores de Salud in Spanish speaking communities; Peer Educators; Peer Support; Community Health Representatives; and Community Based Health Workers, are defined by the American Public Health Association (APHA) as “frontline public health workers who are trusted members of and/or have an unusually close understanding of the community served” (APHA, 2009). The 2014 Community Health Worker Core Consensus led by APHA identified ten CHW roles (Rosenthal, Rush, & Allen, 2016).:

1. Cultural mediation among individuals, communities, and health and social service systems
2. Providing culturally appropriate health education and information
3. Care coordination, case management, and system navigation
4. Providing coaching and social support
5. Advocating for individuals and communities
6. Building individual and community capacity
7. Providing direct service
8. Implementing individual and community assessments
9. Conducting outreach
10. Participating in education and research

The United States Department of Labor Standard Occupation Classification Report echoes the above roles. The report describes CHWs as persons who “assist individuals and communities to adopt healthy behaviors; [they are also known to] conduct outreach for medical personnel or health organizations to implement programs in the community that promote, maintain, and improve individual and community health.” (Bureau of Labor Statistics, 2017). CHWs heavily focus on meeting the needs of the individual populations in which they work in, therefore referring to an all-encompassing standard job description has proven to be difficult. With that being said, the landmark qualification of CHWs is that they share a defining characteristic and connection with their clients – often race/ethnicity, disease diagnosis, or neighborhood residency. These similarities facilitate the relationship between CHWs and patients in ways that are different than the relationships between patients and clinically trained healthcare providers.

## Make-up of CHW Workforce

Preferred qualifications for CHW professionals do not appear to be uniform. This is evident through CHW job description analyses that revealed a lack of consistency in job requirements for CHWs. (Malcarney, Pittman, Quigley, Horton, & Seiler, 2017). (O’Brien, Squires, Bixby, & Larson, 2009). A great deal of the lack of uniformity in CHW job descriptions is due to the fact that the CHW role can largely vary depending on the population they are serving. Unsurprisingly, in two reviews of CHW literature that were conducted, the most common preferred trait was some sort of shared/peer characteristic with the population that was going to be served, such as speaking the same language, diagnosis of the same disease, or ethnic/racial match. (Malcarney, et al., 2017) (O’Brien, et al., 2009). It is worth noting that in the review conducted by O’Brien and others, only a small number of the studies that were reviewed mentioned the criteria for CHW selection. Similarly, in the Malcarney review, researchers could not determine the hiring criteria for nearly twenty percent of the programs in their database that were reviewed. These revelations not only make it difficult to determine conclusions regarding job descriptions/hiring requirements for CHWs, they also underscore the need for a standard baseline CHW job description, while speaking to a central reason why development of one would be difficult, as a criterion to start from does not appear to currently exist.

Malcarney found that programs rarely established educational requirements, with only eight of the seventy-six listing out educational requirements – and of those eight, the required level of education was a high-school diploma or equivalent. This echoes an earlier published content analysis that evaluated the description of CHW selection and training in existing literature and found only nine percent (n=44) of the job descriptions examined stated the need for a high school diploma or equivalent as a stipulation of employment. (O’Brien et al., 2009).

## Community Health Worker Roles

Generally, the literature suggests that CHWs perform a wide variety of tasks. Kim et al. found that CHWs fulfilled the role of “educator” in over seventy percent of the studies they reviewed. Kim et al. also found that in over thirty percent of the studies they looked at, CHWs were serving as navigators – assisting clients with accessing preventative care services and chronic disease management. The review conducted by Kim and others also noted that case management services, social services and social support were also provided by CHWs in the studies they examined (Kim et al., 2016).

 Although a study by Mayer and others represents a small sample size, the roles identified in their review echoed the Kim study with references made to education; social and emotional support; and connecting patients to additional resources (similar to the role classified as “navigator” by Kim). (Mayer, et al., 2016).

## Where are Community Health Workers Utilized

Community Health Workers are utilized in a variety of settings. A 2018 Ohio Department of Health, community health worker statewide assessment, found that the top five types of organizations that the survey respondents reported working for were as follows: community-based organizations (CBOs), local health departments, hospitals, and federally qualified health centers (FQHCs) (Smith, Robinson, Carter, & Kirkland, 2018).

Malcarney found that of the seventy-six programs reviewed, fifty-seven provided services in home and community settings. Community settings mentioned in the referenced article were churches, schools, and community centers. Thirteen programs identified their primary intervention location as a “non-hospital clinical setting such as a physician office or school-based health center”; and six listed the hospital setting as the primary intervention site. (Malcarney, et al., 2017). The researchers also found that forty-four programs were led by clinical providers or insurers such as hospitals, health systems, FQHCs and payers (both public and private). CBOs and other non-profits (such as academic institutions and community coalitions) were the lead for twenty-nine programs. Health/social agencies (such as local health departments) were identified as the lead for seven of the seventy-six programs from the researcher’s database.

## Facilitating Community Health Worker Integration

An evaluation by Payne and others, described successful increases in organizational capacity as CHWs fulfill roles that clinical providers were unable to serve in due to high patient volume; competing priorities; and lack of knowledge about the community. (Payne, Razi, Emery, Quattrone, & Tardif-Douglin, 2017). The evaluation noted that support for CHWs seemed to manifest through appropriate supervision of CHWs; availability of tools for newly hired CHWs; and matching CHWs with responsibilities that fit their skillset and/or placement into a community where they had an existing relationship. Relatedly, clear, defined roles, that were understood by all, helped empower CHWs to feel as though they were an integral unique team member whose job was different than their colleagues. The study conducted by Mayer echoed findings by Payne and colleagues, for both studies mentioned the need for efficient care coordination templates in electronic health records; both highlighted the need for a distinction between the roles and responsibilities of everyone on the care team; lastly, the two similarly described the need for CHWs to be visible among the staff in order to facilitate a trusting relationship between clinical and CHW staff. (Mayer et al., 2016) (Payne, Razi, Emery, Quattrone, & Tardif-Douglin, 2017).

# Training of Community Health Workers

In the systematic review by Kim and others that examined 67 studies; eighty-eight percent of them mentioned training in some capacity, however there was little consensus among the studies. Twenty-four studies documented the length of CHW trainings that were utilized, which ranged from 4 hours to 240 hours (median was 16.5 hours). Kim found that those CHW programs that incorporated more training hours tended to also have their CHWs perform a greater number of roles. (Kim et al., 2016). The Kim findings echo research completed by O’Brien and colleagues at the University of Pennsylvania, where they also discovered a large range for CHW training length of 5 hours to 6 months, and also saw that training length depended upon the duties of the CHW. (O’Brien et al., 2009).

# Current Policy Landscape

Thus far this paper has justified utilization of community health workers for numerous public health purposes, ranging from disease management to prevention. The attention will now switch to policy, approaches to sustainability, and recommendations for CHWs.

## State Certifications

In the 1990s, Texas was the first state to establish training and certification standards for CHWs. Since then, other states have followed suit, and have also figured out how to get reimbursement for CHW programs. Implementation and funding challenges still exist, largely due to lack of standardization of the CHW field. As mentioned previously, there is a lack of standardization of CHW job descriptions, which translates into an extensive, and often variable set of roles and responsibilities for CHWs. On the national level, the Bureau of Labor Statistics does recognize CHWs as a profession, and offers a broad description of CHW job functions. Similarly, APHA has devised a list of ten CHW roles (which can be found in the introduction section of this paper) however, existing literature does not indicate that adoption of the ten roles has been widespread, as CHW job descriptions remain inconsistent.

There are pros and cons to the flexibility of the CHW role. For one, the absence of rigidity allows for CHWs to adapt to the needs of the community and clients they are serving – if a finite list of duties were to be established, it would obviously condense their purview of what was in scope, which could result in fewer services being provided to communities and individuals. Adding certification requirements into the mix in order to become a CHW creates a barrier to entry that may alienate a subset a people from becoming a CHW, which could result in losses of potential valuable additions to the workforce. With that being said, the literature overwhelmingly supports the notion of professionalizing the CHW field.

A number of individual states have taken it upon themselves to mandate CHW trainings and or certifications. Similarly, other states have made the CHW certification process optional for now, but at least have some sort of training and/or certifications available.

## Funding Community Health Worker Programs

In the past, most CHW programs have been funded via philanthropic funds, self-funded by the hosting organization or through specific grants. Examples of federal level organizations and grants that have historically funded CHW programs include but is not limited to the following:

* CDC;
* CMS ’Hispanic Health Services Research Grant and on the state level the CMS funds the State Innovation Model Initiative grant which has been used to finance CHW programs;
* The Health Resources and Service Administration (HRSA) via the following bureaus: Health Workforce, Primary Health Care, HIV/AIDS, Maternal/Child Health, Office of Rural Health Policy;
* Indian Health Service;
* National Institutes of Health (NIH)

Due to the unpredictable nature of grants in regard to consecutive award offerings, grants should not be considered a long-term sustainable funding source for CHW programs. A more sustainable funding option that should be considered for CHW programs is reimbursement through Medicaid. Since 2013, preventative services can be reimbursed through Medicaid if a clinically licensed healthcare provider recommends services, even when non-licensed public health practitioners such as CHWs provide the services (Albritton, 2016). The preventative services must involve direct patient care, and have to directly address a patient’s physical or mental health.

 States also have the option to obtain Medicaid reimbursement for CHW programs by adding additional services to their state’s State Plan Amendments (SPA) that a CHW would provide. If legislation passes that changes a state’s SPA, and CMS approves it, the new services will be reimbursed by Medicaid (Albritton, 2016). Lastly, if states utilize managed care organizations (MCOs) for their Medicaid program, they can require MCOs to implement CHW programs, and dictate program specifics.

# A Look at Funding Community Health Worker Interventions in Value-Based Reimbursement Models

Various mechanisms for provider payment for rendered healthcare services exist. Arguably, the most common mechanism employed in the U.S. is a fee-for-service model where providers are paid on a volume basis. Much of the debate around inefficiencies, and over-spending in healthcare, center around the pitfalls of the fee-for-service model, and the fact that its inherent structure does not incentivize lower levels of utilization. Calls for greater applications of payment models that tie reimbursement rates to the actual value or impact of rendered services has been made by experts in the healthcare field. Existing evidence suggests that CHW programs would fit well into value-based reimbursement models for as it is discussed above, CHW programs have been shown to improve population health.

## Vision for Utilizing Community Health Workers in Accountable Care Organizations

Accountable Care Organizations (ACOs) are a network of physicians, other types of clinicians and hospitals, with an agreement to provide coordinated, high quality care. Through membership in the Medicare Shared Savings Program, ACOs are financially incentivized to reduce over utilization of services, and meet established quality goals. (Gould, 2016). ACOs can earn quality points in the following spheres: patient/caregiver experience; preventative health; at-risk population; and care coordination/patient safety. (CMS, 2019). The domains of patient/caregiver experience; preventative health; and at-risk population present an opportunity for CHW programs to earn ACOs possible points – in other words CHW programs could serve as a fruitful investment for ACOs as they are likely to earn them points in the domains referred to above.

## Utilizing Community Health Workers in a Patient Centered Medical Home Model

Mirroring the focus that ACOs place on coordination, the Patient Centered Medical Home (PCMH) model is built around the idea that a patient’s entire team needs to effectively collaborate in order to provide the highest quality care. ACO members may use PCMH in their practice to guide their staff towards that central tenant of efficient coordination. With implementation of a PCMH model, payers may offer financial incentives for successful adherence. According to The National Committee for Quality Assurance (NCQA) more than 100 payers provide financial incentives or additional benefits for successfully following the PCMH model.

 A program in Vermont that focuses on chronic care delivery, mandates that participating providers introduce the PCMH model into their practices. If performance targets are met, providers will receive per-patient-per-month enhanced payments. Funds awarded for completing targets can be used to further advance care coordination efforts. In Vermont, numerous practices that utilized the PCMH model used resources to establish a CHW program that resulted in growth rate in total expenditures that was $322 lower over a period of 8 years compared to patients who were given care at practices that did not follow a PCMH model. (Albritton, Sanchez, 2018).

CHWs would fit well into an organization that wishes to follow the goals of the PCMH model. All of the ten CHW roles closely align with the desired elements of a PCMH model. The PCMH fundamental principles of partnership with the patient and their family, treating the patient with respect, and providing culturally competent care, fully embrace the ideal of why CHWs were first utilized, and why they are successful.

# Conclusion

It is overwhelmingly clear that CHW programs result in positive outcomes. While additional research and policy development is needed around sustaining their use in health systems, the evidence exists in the literature to suggest a need for a centralized movement at the federal level to at the very least mandate certification programs with a set of minimum requirements that can be modified for additions at the state level. While there may be a small loss of eligible workforce due to setting forth certification requirements, there are a number of states that already do so, demonstrating the ability for CHWs to remain effective even with having to complete a certificate program. Moreover, the creation of any certification requirements should be informed by the ten CHW roles developed by APHA, which should incorporate most of what CHWs already accomplish. Implementation of required elements of a certificate program introduces standardizations that open the door for greater ease in advocating for reimbursement, (which is arguably the most sustainable way to fund CHW programs) without over formalizing the profession and losing sight of what makes a CHW unique – which is their ability to connect with patients.

* + - * 1. Supplemental Information

Table 1 Roles of Community Health Workers as Determined by the Community Health Worker Core Consensus Project (Rosenthal, Rush, & Allen, 2016)

|  |
| --- |
| Cultural mediation among individuals, communities, and health and social service systems |
| Providing culturally appropriate health education and information |
| Care coordination, case management, and system navigation |
| Providing coaching and social support |
| Advocating for individuals and communities |
| Building individual and community capacity |
| Providing direct service |
| Implementing individual and community assessments |
| Conducting outreach |
| Participating in education and research |

Table 2 Community Health Worker Certificate and Training Information by State

|  |  |
| --- | --- |
| **State**  | **Community Health Worker Certification and Training Information** |
| Alabama  | Not required by state |
| Alaska | Optional certificate programs available; certification required for Medicaid reimbursement  |
| Arizona | Optional certificate programs available  |
| Arkansas | Not required by state |
| California | Not required by state  |
| Colorado | Optional certificate available  |
| Connecticut  | Not yet required by state, optional program in development  |
| District of Columbia | Not required  |
| Delaware | Not required  |
| Florida | Optional certificate programs available  |
| Georgia | Not required |
| Hawaii | Not required |
| **Table 2 Continued** |
| Iowa | Not required  |
| Idaho | Not required  |
| Illinois | Not required  |
| Indiana | Optional certificate programs available; certification required for Medicaid reimbursement  |
| Kansas | Not required |
| Kentucky | Optional certificate programs available |
| Louisiana | Not required by state |
| Maine | Not required by state |
| Maryland | Optional certificate programs available |
| Massachusetts | Optional certificate programs available |
| Michigan | Not required by state |
| Minnesota | Optional certificate programs available; certification required for Medicaid reimbursement |
| Mississippi | Optional certificate programs available  |
| Missouri  | Not required by state  |
| Montana  | Optional certificate programs available |
| North Carolina | Not required by state |
| North Dakota  | Not required by state |
| Nebraska | Not required by state. Optional trainings available  |
| New Hampshire  | Not required by state |
| New Jersey | Not required by state |
| New Mexico | Optional training available |
| Nevada | Not required by state |
| New York | Optional certificate program available |
| Ohio | Required by state  |
| Oklahoma | Not required by sate |
| Oregon | Required for home health care. Optional for other settings |
| Pennsylvania | Not required by state |
| Rhode Island | Optional certificate program available |
| South Carolina | Optional certificate program available |
| Tennessee | Not required by state  |
| **Table 2 Continued** |
| South Dakota | Optional certificate program available |
| Texas | Required by state |
| Utah | Not required by state  |
| Vermont | Not required by state |
| Virginia | Not required by state |
| Washington | Not required by state |
| Wisconsin | Not required by state |
| West Virginia  | Not required by state |
| Wyoming  | Not require by state |

Literature Review: Search Methods

A literature search was completed on PubMed and Google Scholar in order to obtain a sense of the following: the current evidence that illustrates the successes and challenges that have been documented regarding community health worker implementation; health outcomes data associated with CHW utilization; and cost-savings that have resulted from CHW programs. Key phrases such as “community health worker(s)” and “Peer Educators” were searched, and also at times combined with the following: “asthma”; “diabetes”; “cancer”; “disease management” “cost-effectiveness”; “reimbursement”. This paper focuses on CHW utilization within the United States, therefore any results focused on CHW use outside of the U.S. were excluded from review, with the exception of one article that was selected for where only four of sixty-seven CHW studies took place out of the U.S.

 Although additional references are made throughout this paper, four articles were selected for a focused review in this essay, and were utilized for the development of numerous sections of this essay. The first selection, “Effects of Community-Based Health Worker Interventions to Improve Chronic Disease Management and Care Among Vulnerable Populations: A Systematic Review” (Kim et al., 2016) was made based upon breadth of the literature that was examined by the authors – 934 unique citations were considered which the authors eventually narrowed down to sixty-seven relevant studies. The authors limited their study to a review of randomized control trials (RCTs).

“The Changing Roles of Community Health Workers” (Malcarney et al., 2017) was also selected due to its relatively large sample size of seventy-six programs, and its utilization of a mixed methods approach. The remaining two articles that were reviewed, “Integrating Community Health Workers into Health Care Organizations” (Payne et al., 2017) and “They’re Doing Something That Actually No One Else Can Do” A Qualitative Study of Peer Support and Primary Care Integration” (Mayer et al., 2016) were chosen because of their focus on determining what leads to success when integrating CHWs into a health system/primary care setting, and what challenges have been faced by health care organizations that employ CHWs into their care practice.

 This essay examined articles that at times refer to CHWs by other titles they are known to have such as “community-based health worker” and “peer support”. In all of the reviewed articles, APHA’s definition for CHWs, or one that closely aligned with APHA’s definition was utilized. Two of the four articles (Malcarney and Kim) developed lists of CHW programs that were included for their analyses based on a literature review with specific search terms and exclusion/inclusion criteria, whereas the Payne and Mayer studies utilized qualitative data in the form of interviews, progress reports, and site visits. Malcarney also conducted interviews with organizations that employ CHWs and a range of experts in the CHW field from academic to practice-based CHW thought leaders. Three studies were identified as having been included in the sample size for both the Malcarney and Kim articles.

 A major gap in the spread of research is that the existing evidence does not look at whether or not the outcomes from CHW programs will remain for prolonged periods. (Margellos-Anast, Gutierrez, & Whitman et al., 2012).

Table 3 Major Articles Reviewed

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Authors** | **Methods** | **Sample Size** | **Objectives** | **Inclusion Criteria** | **Exclusion Criteria** | **Conclusions** |
| Kim et al. | Electronic database search; standardized data extraction; quality evaluation  | Sixty-seven articles  | Review existing evidence on CHW interventions with a focus on the type of intervention, characteristics of CHWs, and patient outcomes | Randomized controlled trials published in peer-reviewedjournals written in English; studies testing interventions led by CHWs; studies focused on adults; studies focused on chronic conditions | Studies focusedon children; articles that were not based on data such as editorials; studies focused on non-vulnerable populations | Interventions by CHWs appear to be effective and cost-effective for some health conditions, especially when implemented among low-income and racial and ethnic minority groups |
| Malcarney et al.**Table 3 Continued** | Literature review; semi-structured interviews; qualitative analysis  | Seventy-six programs; twenty-four interviews | Determine where CHWs work, and what the employer is looking for in a CHW; what processes constitute successful integration of CHWs into health systems | Not strictly defined | Titles of Health Educator” and “Patient Navigator”; programs that implemented CHW activities with employers other than CHWs | Health care providers value training and education of CHWs more so than the landmark CHW characteristics such as peer status; further development of competencies for CHWs needed that focus on CHW integration into healthcare organizations |
| Payne et al. | Qualitative analysis of program evaluation data  | Thirteen programs  | Identify what facilitates and hinders the integration of the CHWs into health care organizations; identify how staff work around impediments to integration  | Implementation of a CHW program funded by Centers for Medicare and Medicaid Services (CMS) Health Care Innovation Award | Not defined | Identified organizational capacity; support for CHWs; clarity about healthcare roles and clinical workflow as essential for integration of CHWs |
| Mayer et al. | Semi-structured interviews; analysis of codebook | Four practices (eighteen staff members) | Gain insight as to why CHWs are useful and what is needed for successful integration of CHWs into primary care focused organizations  | Not strictly defined | Not strictly defined | Benefits of peer support were described, as were challenges and ways to address identified challenges |

Bibliography

Albritton, E. (2016). *How States Can Fund Community Health Workers through Medicaid to Improve People’s Health, Decrease Costs, and Reduce Disparities* (Issue brief). Families USA.

Albritton, E., & Sanchez, D. (2018). *Community Health Workers in Delivery and Payment Transformation: How New Delivery and Payment Models Can Incentivize and Support the Use of CHWs* (Issue brief). Families USA.

Allen, J. K., Himmelfarb, C. R., Szanton, S. L., & Frick, K. D. (2014). Cost-effectiveness of Nurse Practitioner/Community Health Worker Care to Reduce Cardiovascular Health Disparities. *The Journal of Cardiovascular Nursing,* *29*(4). doi:10.1097/jcn.0b013e3182945243

Berwick, D. M., Nolan, T. W., & Hittington, J. (2008). The Triple Aim: Care, Health, And Cost. *Health Affairs,27*(3). Retrieved from https://doi.org/10.1377/hlthaff.27.3.759.

Brownstein, J. N., & Allen, C. (2015). *Addressing Chronic Disease through Community Health Workers* (2nd ed., Issue brief). National Center for Chronic Disease Prevention and Health Promotion.

CDC Strategic Framework. Centers for Disease Control and Prevention. (2019). Retrieved from https://www.cdc.gov/about/organization/strategic-framework/index.html

*Community Health Workers (CHWs) Training/Certification Standards* (Rep.). (2017). Association Of State And Territorial Health Officials.

Cross-Barnet, C., Ruiz, S., Skillman, M., Dhopeshwarkar, R., Singer, R. F., Carpenter, R., . . . Colligan, E. (2018). Higher Quality at Lower Cost: Community Health Worker Interventions in the Health Care Innovation Awards. *Journal of Health Disparities Research and Practice,11*(2). Retrieved from http://digitalscholarship.unlv.edu/jhdrp/

Defining the PCMH. Agency for Healthcare Research and Quality. (n.d.). Retrieved from https://pcmh.ahrq.gov/page/defining-pcmh

Gold, J. (2016, July 13). Accountable Care Organizations, Explained. Retrieved from https://khn.org/news/aco-accountable-care-organization-faq/

Health and Economic Costs of Chronic Disease. Centers for Disease Control and Prevention. (2019, February 11). Retrieved from https://www.cdc.gov/chronicdisease/about/costs/index.htm

*Incorporating Community Health Workers into State Health Care Systems: Options for Policymakers* (Issue brief). (2015). National Conference of State Legislatures.

Jacob, V., Chattopadhyay, S. K., Hopkins, D. P., Reynolds, J. A., Xiong, K. Z., Jones, C. D., . . . Goetzel, R. Z. (2019). Economics of Community Health Workers for Chronic Disease: Findings From Community Guide Systematic Reviews. *American Journal of Preventive Medicine,56*(3). doi:10.1016/j.amepre.2018.10.009

Kim, K. B., Kim, M. T., Lee, H. B., Nguyen, T., Bone, L. R., & Levine, D. (2016). Community Health Workers Versus Nurses as Counselors or Case Managers in a Self-Help Diabetes Management Program. *American Journal of Public Health,106*(6), 10. doi:10.2105/ajph.2016.303054

Kim, K., Choi, J. S., Choi, E., Nieman, C. L., Joo, J. H., Lin, F. R., . . . Han, H. (2016). Effects of Community-Based Health Worker Interventions to Improve Chronic Disease Management and Care Among Vulnerable Populations: A Systematic Review. *American Journal of Public Health,106*(4). doi:10.2105/ajph.2015.302987

Lairson, D. R., Chang, Y. C., Byrd, T. L., Lee Smith, J., Fernandez, M. E., & Wilson, K. M. (2014). Cervical cancer screening with AMIGAS: a cost-effectiveness analysis. *American journal of preventive medicine*, *46*(6), 617–623. doi:10.1016/j.amepre.2014.01.020

Lawlor, M. S., Blackwell, C. S., Isom, S. P., Katula, J. A., Vitolins, M. Z., Morgan, T. M., & Goff, D. C. (2013). Cost of a Group Translation of the Diabetes Prevention Program. *American Journal of Preventive Medicine,* *44*(4). doi:10.1016/j.amepre.2012.12.016

Malcarney, M., Pittman, P., Quigley, L., Horton, K., & Seiler, N. (2017). The Changing Roles of Community Health Workers. *Health Services Research,52*. doi:10.1111/1475-6773.12657

Margellos-Anast, H., Gutierrez, M. A., & Whitman, S. (2012). Improving Asthma Management among African-American Children via a Community Health Worker Model: Findings from a Chicago-Based Pilot Intervention. *Journal of Asthma,49*(4), 380-389. doi:10.3109/02770903.2012.660295

Mayer, M. K., Urlaub, D. M., Guzman-Corrales, L. M., Kowitt, S. D., Shea, C. M., & Fisher, E. B. (2016). “They’re Doing Something That Actually No One Else Can Do”. *Journal of Ambulatory Care Management,39*(1). doi:10.1097/jac.0000000000000079

*Medicare Shared Savings Program: Quality Measure Benchmarks For The 2018 And 2019 Reporting Years, Guidance Document* (2nd ed., Publication). (2019). Centers for Medicare and Medicaid Services.

Obrien, M. J., Squires, A. P., Bixby, R. A., & Larson, S. C. (2009). Role Development of Community Health Workers. *American Journal of Preventive Medicine,37*(6). doi:10.1016/j.amepre.2009.08.011

Patient-Centered Medical Home (PCMH). National Committee for Quality Assurance. (n.d.). Retrieved from https://www.ncqa.org/programs/health-care-providers-practices/patient-centered-medical-home-pcmh/

Payne, J., Razi, S., Emery, K., Quattrone, W., & Tardif-Douglin, M. (2017). Integrating Community Health Workers (CHWs) into Health Care Organizations. *Journal of Community Health,42*(5). doi:10.1007/s10900-017-0345-4

Rosenthal, E. L., Rush, C. H., & Allen, C. G. (2016). *Understanding Scope and Competencies: A Contemporary Look at the United States Community Health Worker Field* (Issue brief). Houston: The University of Texas.

Scoggins, J. F., Ramsey, S. D., Jackson, J. C., & Taylor, V. M. (2010). Cost effectiveness of a program to promote screening for cervical cancer in the Vietnamese-American population. *Asian Pacific journal of cancer prevention: APJCP*, *11*(3).

Smith, C., Robinson, H., Carter, N., & Kirkland, C. (2018). *The 2018 Ohio Community Health Worker Statewide Assessment: Key Findings* (Rep.). Ohio Department of Health.

State Community Health Worker Models. (2018, November 02). Retrieved from https://nashp.org/state-community-health-worker-models/

Summary Report for Community Health Workers. Bureau of Labor Statistics. (2017). Retrieved from https://www.onetonline.org/link/summary/21-1094.00

Support for Community Health Workers to Increase Health Access and to Reduce Health Inequities. (2009, November). Retrieved from https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/09/14/19/support-for-community-health-workers-to-increase-health-access-and-to-reduce-health-inequities

United Nations Millennium Development Goals. United Nations. (n.d.). Retrieved from https://www.un.org/millenniumgoals/bkgd.shtml

Wagner, T. H., Engelstad, L. P., McPhee, S. J., & Pasick, R. J. (2006). The costs of an outreach intervention for low-income women with abnormal Pap smears. *Preventing chronic disease*, *4*(1), A11.

1. Kim et al. reported eight studies (10.45% of those that were reviewed by the authors) where cost analyses were reported. One study was outside of the U.S. [↑](#footnote-ref-1)
2. Authors note that a validated measure to assess health resource utilization does not exist. In this study, urgent resource utilization includes: ED visits, hospitalizations, and urgent clinic visits. [↑](#footnote-ref-2)