The Center for Rural Pennsylvania
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Examination of Community Health Workers in Rural Pennsylvania

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EXECUTIVE SUMMARY

Community health workers (CHWs) play a vital role in the health care delivery system of rural Pennsylvania counties. With current shortages of health care professionals in rural Pennsylvania, CHWs may potentially play a significant role in the delivery of health services.

Currently, however, the role of CHWs is not well defined. This may be due to the lack of standard certification and training for CHWs. Efforts toward certification and training programs are evident throughout Pennsylvania, yet they lack consistency. This research, conducted in 2016 and 2017, was designed to gain an understanding of CHWs in rural Pennsylvania.

The researchers used the Human Resources and Services Administration's Community Health Worker National Workforce Study definition of CHWs as follows: "lay members of communities who work either for pay or as volunteers in association with local physical health and/or mental health care systems in rural environments, and usually share ethnicity, language, socio-economic status, and life experience with the community members they serve" (2007).

The research gathered information on CHWs in rural Pennsylvania through surveys, focus groups, and interviews. The surveys, one for CHWs and another for supervisors and administrators, collected information on: age, gender, educational background, type of employment, tasks and CHW work hours; current job descriptions; populations served; training; health issues of patients; and other pertinent factors. In addition, the researchers conducted 24 leadership phone interviews and seven focus groups in the six health districts of Pennsylvania.

According to the CHW survey, 89 percent of respondents received some type of training to be a CHW. It was evident from the leadership phone interviews and focus groups that there was a variety of training opportunities being offered to CHWs, depending on the work setting and volunteer or work status. On-the-job training, conference training, certificate programs, shadowing, and formal education were the predominant types of training.

There was a wide range of populations in CHW caseloads, and multiple health and mental health issues. The number of monthly caseloads varied, with the highest percentage being 31 or more cases a month for 39 percent of the respondents; the next highest response was for caseloads of 1 to 5 per month for 26 percent of the respondents.

According to the CHW survey results, 91 percent of CHWs are female workers or volunteers, with an average age of about 48. On average, CHWs have worked in the field for 9 years, with 76 percent of the respondents being paid workers. The educational background of CHWs was varied, and ranged from a high school education to a college degree.

Results from the surveys, interviews, and focus groups found that CHWs are used in a variety of agencies and contexts in rural Pennsylvania, with duties ranging from working with the elderly to working with infants and children. Depending on the agency and work status, CHW caseloads can be very different.

Twenty percent of CHWs earn between $20,000 and $30,000 per year. It was evident from the focus groups and leadership phone interviews that low pay, high turnover, and lack of adequate funding were significant issues for many agencies.

In addition, many agencies experienced large caseloads and lacked consistent CHW certification and training. A variety of educational backgrounds and training, as reported by the study participants, further complicates the consistency of CHW roles. In one focus group of CHWs, each worker had different educational and work experiences prior to being hired as a CHW.

Overall, the research provides an overview of CHWs in 37 rural Pennsylvania counties. The research was limited by the lack of a clear definition of CHWs, as perceived by the community of interest, and found that there is currently no official certification process for this job category or standardization of the position. Also, the number of CHWs is limited by a lack of funding sources. In the medical health care field, CHWs do not have a large source of funding, while in the mental health field peer specialists do receive Medicaid money and county/state funds.

In terms of policy considerations, the researchers found that decisions will need to be made on whether CHWs should be certified in Pennsylvania. The decision on certification and training needs to be made by the state legislature and the state Departments of Health and Human Services. The Pennsylvania Community Health Task Force (2016) has identified two paths to certification: a work experience track, and a training and work experience track in which accredited training and work experience would be required (Ferguson, 2016). The certification board would establish work requirements and training standards for accredited CHW training programs. It would consist of a public-private partnership and would be staffed by state agency

staff and CHW stakeholders. State legislation would be needed to authorize the certification board.

In 2016, the Pennsylvania Statewide Community Health Worker Training Subcommittee established a Pennsylvania Core Competency List in the following areas: “community and interpersonal skills; cultural competency; health literacy; health education; care coordination; and advocacy and community capacity building.” Core certification would result in the need for legislation to certify CHWs and create standards for a board and standards for CHW certification. If CHWs become certified, a policy decision would need to be made as to whether there will be state-regulated training and certification requirements for CHWs.

The research also identified possible funding sources (which would require approval of the state and federal governments) that include:

1. Using Medical Assistance money to pay for CHWs conducting outreach and Medicaid enrollment.
2. Expanding the Medicaid Fee for Service to allow CHWs to assist people with accessing care and providing follow-up for medication, diet requirements, and other aspects of care.
3. Providing Medicaid and Medicaid Managed Care to community health centers to provide education, follow-up, and coordination of services using CHWs.
4. Providing Medicaid waivers for CHW services. This would involve using the 1115 waiver clause in the Medicaid plan. A Medicaid waiver in the Affordable Health Care Act allows state health systems to use funds for creative and innovative purposes, such as funding CHWs.

Lastly, if Pennsylvania is going to expand the use CHWs, it should support research that evaluates the health outcomes of CHW patients, looks at gender issues associated with CHWs, and provides more details about the work of CHWs.

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The Center for Rural Pennsylvania is a bipartisan, bicameral legislative agency that serves as a resource for rural policy within the Pennsylvania General Assembly. It was created in 1987 under Act 16, the Rural Revitalization Act, to promote and sustain the vitality of Pennsylvania's rural and small communities.

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Introduction

According to the World Health Organization (2007), community health workers (CHWs), are used worldwide to improve health outcomes by reducing barriers to health care. In the United States, these barriers include a lack of insurance coverage, poor access to services, and unaffordable costs (Alfaro-Trujillo,Valles-Medina, & Vargas-Ojeda, 2012; DeVoe, Baez, Anger, Krois, Edlund, & Carney, 2007). These barriers are often particularly acute in rural areas where poverty is more prevalent, health care providers are more limited, and public transportation is poor or nonexistent. There is a body of research that establishes the links between these barriers and higher morbidity and mortality rates.

This study assessed the extent to which CHWs are used in rural Pennsylvania to address the health care needs of underserved populations. The themes for this research included salaries of CHWs, barriers to using CHWs, roles of CHWs, health outcomes with CHWs, demographic characteristics, training and certification, competencies of CHWs, role of mental health peer specialists, effective models for CHWs, various populations served, and increased need for CHWs.

Public policy makers face the dilemma of trying to contain health care costs and improve health outcomes in this age of health care reform. In 2014, the U.S. Department of Labor estimated that there were about 48,000 community health workers nationwide, with a mean annual income of around $38,000 per year (Bureau of Labor Statistics, 2014). The Department of Labor estimated that there were 1,130 CHWs in urban and rural Pennsylvania in 2014; the annual mean income was around $38,000, which was consistent with the national average. However, these statistics were based on paid CHWs and excluded volunteer CHWs.

There are documented barriers to using CHWs, which include problems with work conditions, standards, and adequate funding. Kangovi, Grande, and Trinh-Shevrin (2015) see

five implementation barriers to providing effective CHW services: “insufficient integration with formal health care providers, fragmented and disease specific interventions, lack of clear work protocols, high turnover and variable performance of the workforce, and a history of low-quality evidence” (p. 2278). Snyder (2016) states, “The short-term grants and contracts that currently support most CHW programs potentially create unstable work prospects because funding streams are vulnerable to changes in economics, politics, and agency strategies” (p. 8). Furthermore, Johnson et al. (2012) elaborate on the difficulties of CHWs; salaries and finances are challenging issues because expenses for CHWs are currently not reimbursable expenses by either private or public health insurance programs, including Medicare and Medicaid. The absence of clear standards for CHWs was also noted by the Maryland Department of Health and Mental Hygiene and Maryland Insurance Administration (2015). They find that the lack of clear standards for CHWs is a barrier to developing the workforce.

Roles of CHWs can vary dramatically. Enard and Ganelin (2013) identified the use of CHWs as patient navigators to prevent emergency room visits; whereas, in other fields of healthcare, CHWs have been reported to provide cultural mediation, counseling and support, health education, advocacy, and screening services (Goodwin and Tobler, 2008). Malcarney et al. (2017) see the roles of CHWs changing with their place of work, such as hospital/health systems, clinical providers, including federally qualified health centers, public or private health plans, non-profit entities, and health/social agencies. These researchers did not find educational requirements to be critical in hiring CHWs; however, language fluency was found to be an important criterion for many programs, as well as peer status, such as the hiring of a diabetic for a diabetic program. Findings from another study (Snyder, 2016) identified primary roles of CHWs to “increase access, deliver screening and preventive services, and improve system navigation, care coordination and disease management through education and other approaches”

(p. 2). CHWs may obtain candid health information from patients, which can be relayed to other members of the healthcare team and aid in promoting more comprehensive health care. Another role identified by Snyder (2016) emphasizes the importance of CHWs in addressing the needs of the chronically ill. With 81 million people experiencing multiple chronic conditions, and the reported projection of 157 million by 2020 in the U.S. (Bodenheimer, Chen, and Bennett, 2009), the need for CHWs may increase dramatically. Lopez (2015) sees a future need for a variety of job titles for CHWs in Nebraska, including case coordinator, community liaison, community outreach worker, and many other titles. This vision is also reported by the Universal Health Care Action Network Report (UHCAN, 2015), which projects future needs of CHWs in Ohio, to cover a variety of services being performed in different organizations by CHWs.

CHWs may impact health outcomes of those with chronic conditions. As the population ages, chronic conditions increase. The potential impact of CHWs on health outcomes is an important area about which to obtain further knowledge. In the U.S., Goodwin and Tobler (2008) found that CHWs play a critical role in preventing expensive hospitalizations and reducing costs. In addition, an experimental program in New Mexico showed that the use of community health workers who receive Medicaid reimbursement results in a reduction of emergency room and inpatient visits (Johnson et al., 2012).

Snyder (2016) discusses the effectiveness of CHWs depending on the context of practice, with the greatest results reported in the area of providing preventative services to low-income, minority, and underserved patients. The Columbia University Mailman School of Public Health (2010) report on the CHW initiative in New York State says that CHWs reduce health care costs and unnecessary emergency room visits and hospitalizations.

Another area of limited investigation has been the demographic characteristics of CHWs. A National Community Health Worker Advocacy Survey (Zuckerman and Zuckerman, 2014)

studied 45 states and four territories. It found that CHWs worked 7 years, on average, and were 45 years old, on average. Eighty-nine percent of workers were female, with a variety of races, ethnicities, and educational backgrounds represented. On average, paid CHWs worked 37 hours per week and volunteers worked 12 hours per week. Individual incomes varied, as did ethnicities served. Zuckerman and Zuckerman (2014) found that CHWs encountered a variety of diseases in their work. Wilder Research (2012) studied the characteristics and roles of CHWs in the Midwest. It found that 87 percent of workers were female, with a diversity of races and ethnicities. Twenty-five percent had 10 years of work experience, with a diversity of educational backgrounds, and 86 percent were working in paid positions. Formal training and education were found to be an important component of a CHW's job.

Currently, there is a movement in Pennsylvania advocating statewide training and certification of CHWs.

Related to understanding training and certification of CHWs is investigating the skills that CHWs need on the job. Snyder (2016) reports that, nationwide, CHWs can be certified, not certified, and volunteers. The Pennsylvania Community Health Worker Policy Task Force (2016) that met at the CHW Forum in November 2016 advocated for the establishment of a certification board for CHWs and the need for accredited CHW training programs. The certification process after 5 years would require completion of an accredited CHW training program. The Pennsylvania Community Health Worker Policy Task Force is one of three task forces that was launched in September 2015 by the Jewish Healthcare Foundation, working with the Pennsylvania Department of Health (PADOH), the Pennsylvania Office of Rural Health, and the East Central Pennsylvania Area Health Education Center to study and develop policies on financing, training, and competencies of CHWs in Pennsylvania.(Pennsylvania Area Health Education Center, East Central District, 2017) The three task forces and steering committee

involve stakeholders who are interested in having credentialed and certified CHWs in Pennsylvania, and they are working on establishing guidelines and proposals for CHWs in Pennsylvania. A forum was held in Harrisburg in November 2016 to discuss issues surrounding CHWs, such as funding, employment, training, and certification. Many states do not have certification processes.

The Pennsylvania Department of Health (2014) reported the pros and cons of certification. The pros include a common knowledge base, acknowledgement of training and work standards, increased chances of third party reimbursement, and standardized research to test outcomes of CHW work. Concerns about certification include costs, eliminating people who are qualified but do not meet certification standards, not linking compensation to certification, and issues of administering this program. As of January 2017, 29 states do not have any certification process for CHWs, including Pennsylvania. The Association of State and Territorial Health Officials (ASTHO) Community Health Worker Call Series (2016) describes similar pros and cons of certifying CHWs, but there are no scientific studies on the results of establishing credentialing for CHWs. There are numerous states that have certification and training programs, but there is no study that can be found in the literature. Following is a sample of CHW certification and training programs in various states: Illinois established a CHW Advisory Board by law; Massachusetts established a Board of Certification of CHWs by law; Minnesota allows CHWs to participate in the Medicaid program; Mississippi and Nebraska established CHW-credentialing programs, not a law; New York created a Community Health Worker program, not a law; Ohio legally mandated CHW certification programs; Oregon established training requirements for CHWs by law; Texas certifies community health workers by law; and Washington has a CHW training program, but not by law (Association of State and Territorial Health Officials, ASTHO, 2016).

Different approaches to certification and training in the U.S. have been attempted by the Jewish Health Care Foundation (2015). This organization reports that "While many (states) have largely left CHWs unregulated, others…have elected to promulgate statutes, regulations and/or policies as a means of more clearly identifying and codifying the role of CHWs in their respective state healthcare systems" (p. 15). The Jewish Health Care Foundation report (2015) has documented the history of regulation and state policy in Massachusetts, Minnesota, New Mexico, and Texas. Massachusetts has used CHWs for the past 50 years, and, in 2010, the Board of Certification of Community Health created a requirement of certification for CHWs. This certification exam is administered by the Massachusetts Department of Health. CHWs working prior to this requirement have been grandfathered in to certification or can achieve certification by completing state-regulated CHW training and 2,000 hours of work experience. Massachusetts certifies both paid and volunteer CHWs. Minnesota has a state agency that monitors the competency-based curriculum of CHWs at state community colleges, and New Mexico has an Office of Community Health Workers. In 2014, New Mexico passed a Community Health Worker Act, which established a CHW certification program for CHW generalists and specialists. Oregon passed a law in 2011 mandating the Oregon Health Authority to initiate CHW training and certification. Texas also requires certification of CHWs by law (Jewish Health Care Foundation, 2015). Interestingly, the actual hours of training vary state by state. For example: Massachusetts - 80 hours plus 15 hours of continuing education every 2 years; Minnesota - 14 hours of online/in class coursework and 90 hours of supervised clinical work; New Mexico - 100 hours of coursework and 100 hours of field experience; Oregon - 80 hours of training and 20 hours of CEU's every 3 years; and Texas - 160 hours of coursework in eight competency areas (Jewish Health Care Foundation, 2015).

Background checks are part of the certification process for CHWs. In New Mexico, for example, a $44 fee is required for a background check for certification (New Mexico Department of Health, 2017). In Oregon, there is a background check for CHWs who are applying for certification (Oregon Health Authority, 2017). It is evident that standardization of CHW requirements is lacking across the states.

In Pennsylvania, at the CHW forum in November 2016, competencies for CHWs were presented as important, based on a review of competencies of other states. These competencies included: 1. Communication and Interpersonal Skills; 2. Cultural Competency; 3. Health Literacy; 4. Health Education; 5. Case Coordination; and 6. Advocacy and Community Capacity Building (Pennsylvania Statewide Community Health Worker Training Subcommittee, 2016).

Carney (2016) discusses in a PowerPoint for the Community Care Behavioral Health Organization the different training and certification processes for certified peer specialists who work for mental health centers in Pennsylvania. In every county in Pennsylvania, certified peer specialists are required to provide peer support services to persons with mental health issues through support, advocacy, self-help, and social networking. These peer specialists have to receive training through one of two providers in Pennsylvania.

An important area requiring further investigation includes effective models of service delivery. The CDC (2014) sponsored an investigation of state programs using CHWs. They found the following sources of funding available for CHWs: “government agencies, charitable foundations, general funds from governments, hospitals, managed care organizations, employers, and public insurance programs” (CDC, 2014, p. 15). A major barrier identified to establishing a sustainable CHW program was the use of soft money (money that is not a steady stream) as noted by interviewees in the CDC study (CDC, 2014). Lack of stable funding for CHWs in Ohio was identified as a barrier to recruit CHWs (UHCAN Report, 2015). The Texas Department of

State Health Services and Health and Human Services Commission (2012) confirms similar funding issues for Texas CHWs, citing grant funding as the predominant form of funding. Overall, there are very few programs nationwide that have sustained long-term funding. The National Association of Community Health Centers (2015) reports that Medicaid and other payers have been traditionally resistant to pay for CHW services. In Ohio, participants in a study saw a lack of stable funding as a barrier to retention of CHWs in agencies (UHCAN Report, 2015)

Various health conditions are treated by CHWs as indicated in the Snyder (2013) study, which sees behavioral health disorders, diabetes, heart disease and high blood pressure as well as high cholesterol, HIV, cancer, and asthma as the most frequent conditions. Understanding the health conditions that CHWs work with is important. In a workgroup report, the Maryland Department of Health and Mental Hygiene and Maryland Insurance Administration (2015) described the variety of populations, health issues, and communities where CHWs work often focused on communities where there are underserved populations.

Bovbjerg et al. (2013) discuss the Affordable Care Act as an impetus for the use of CHWs because the law wants to expand the use of CHWs. They further discuss the importance of CHWs to work with patients with chronic diseases to prevent severe disruptions in their lives. The Texas Department of State Health Services and Health and Human Services Commission (2012) emphasized the importance of the employer perspective on CHWs. In their report on Texas, they stated that a substantial majority of employers wanted to increase the number of CHWs in their organization. The Maryland Department of Health and Mental Hygiene and Maryland Insurance Administration (2015) see the expansion of CHWs in Maryland as based on the changes in the health care system.

In Pennsylvania, there has been only one environmental scan (a comprehensive survey assessment of CHWs and their roles) completed that covered rural and urban areas; the major emphasis in this study, however, was on urban areas (Snyder, 2013). Snyder (2013) used a mail and online survey to explore organizations that used CHWs in urban and rural Pennsylvania. Key findings included types of organizations where CHWs work, roles CHWs played in organizations, specific populations and conditions served, geographic areas served, and CHW functions/roles and activities. Snyder's (2013) policy recommendations included: 1. Review of Medical Assistance funds to pay for CHWs; 2. Expansion of Medicaid Fee for Service for CHW services; 3. Securing of Section 1115 and/or Section 1915 Medicaid waivers for CHWs; 4. Agreement on a more concrete definition of CHWs; 5. Examination of potential liability issues with health screenings and care management; and 6. Development of the CHW movement to be based on evaluation research. Previous research has focused mostly on CHWs in urban areas, leaving a gap in the knowledge related to CHWs in rural Pennsylvania.

This study explores CHWs working in rural Pennsylvania and their roles and responsibilities in agencies, their demographic characteristics, and other important factors relevant to defining their role in rural Pennsylvania health care. This study is very important because it fills a gap in knowledge of CHWs in rural areas.

For this study, CHWs in rural Pennsylvania are defined as "lay members of communities who work either for pay or as volunteers in association with local physical health and/or mental health care systems in rural environments and usually share ethnicity, language, socio-economic status, and life experience with the community members they serve" (U.S. Department of Health and Human Services Human Resources and Services Administration's Community Health Worker National Workforce Study, 2007, p. 2).

The term CHW denotes many different work titles, such as lay health worker, health advocate, and promoters of health (National Health Care for the Homeless Council, 2011).

Overall, this study, using surveys, focus groups and interviews, identified important policy issues such as certification, training, funding, health outcomes, volunteer versus professional issues, salaries, and implications of demographics.

Goals and Objectives

The goal of this research was to gain an understanding of community health workers (CHWs) in rural Pennsylvania counties. This included identifying various types of organizations that use CHWs and how CHWs are used in rural counties. Objectives of the research included understanding the growth and labor market for CHWs, examining various models of using CHWs, and addressing barriers and opportunities. An operational definition of CHWs was developed for the two surveys.

Methodology

Research Design

The research included leadership phone interviews, focus groups, and quantitative surveys. The leadership interview and focus group questions were developed from research questions in the literature. The surveys for CHWs and CHW supervisor/administrators, as well as leadership interviews and focus group protocols, were based on existing literature and a previous environmental scan conducted by Snyder (2013). Many of the questions in the CHW supervisor/administrator survey were similar to the environmental scan. The researchers received permission from Dr. Snyder to use her survey as a basis for the supervisor/administrator survey.

Surveys

The research used the definition of CHW, formulated by the Community Health Worker National Workforce Study (2007), in the CHW and supervisor/administrator surveys. This definition was chosen because it most reflects what CHWs do nationwide and takes into account paid and volunteer workers. The Community Health Worker National Workforce Study (2007) developed the definition of CHW based on "The common traits among these diverse roles [which] have been found to be the commitment of these health workers to both the communities they assisted and the organizations for which they worked, their skill of interacting effectively with both, and their ability to motivate clients" (p. 20).

The CHW survey used general ideas from surveys completed in different states (Michigan Department of Community Health, 2011; Wilder Research, 2012; Well Share International, 2014; Lopez, 2015; UHCAN Report, 2015; Illinois Department of Public Health, 2016). The supervisor/administrator survey was adapted from the Pennsylvania environmental scan (Snyder, 2013).

The CHW survey collected information on the following: current job title, CHW tasks in the community, type of organization, training, populations and ethnic groups served, agency funding, types of mental health and health issues served, annual income, and demographic information about the CHWs. The supervisor/administrator survey questions included: primary role in organization, type of organization, average caseloads of CHW workers, types of CHWs employed or volunteering, populations and health/mental health groups served, level of education, and counties served.

CHWs and supervisors/administrators from all rural Pennsylvania counties (48) were invited to participate. The research used the Center for Rural Pennsylvania's definition of rural counties, which is based on population density. The researchers attempted to obtain a

representative sample from the various rural counties through availability and snowball sampling. Since CHWs are not certified in Pennsylvania, participation in the survey was accomplished by identifying oneself as a CHW. The researcher had difficulty obtaining a large sample because many potential participants did not identify themselves as CHWs.

For both the CHW and supervisor/administrator surveys, the researchers obtained email lists by contacting representatives of the Department of Health, Area Agencies on Aging, and Community Health Centers. There was no response from the agencies identified by the Department of Health and Community Health Centers; there was only one response from the Area Agencies on Aging.

The research team developed a list of potential agencies that could have CHWs and supervisors/administrators, including mental health centers, hospitals, home care agencies, home health agencies, Head Start Programs, Early Intervention Programs, WIC, hospices, United Way agencies, public health departments, churches, and day care organizations. After emails were sent out to various organizations, the researchers followed up with phone calls to those organizations that did not respond to emails. In addition, members of the research team delivered and retrieved 35 paper copies of the CHW and supervisor/administrative surveys to agencies in the north central and northwest health districts.

Leadership Interviews

The research included 24 leadership telephone interviews to obtain information about CHWs from key health care leaders, who work directly with CHWs. The leadership interviews lasted about 30 minutes each. To maintain consistency in the phone interviews, research team members asked the same questions of all respondents. All attempts to conduct interviews were successful. The survey addressed adequacy of funding, workers'/volunteers' key activities, roles

of community health workers, health outcomes, effectiveness of services, barriers to effective service delivery, strengths and weaknesses, training and certification issues, populations being served and health issues, and opportunities to increase the number of community health workers. Members of the research team conducted the leadership interviews by using the leadership 15-question interview protocol. Informed consent was obtained prior to conducting leadership interviews. After each interview, the transcript was reviewed repeatedly for accuracy as it was transcribed. Participants were recruited for the study through the online surveys, focus groups, and email contact; two potential participants signed the consent forms but declined to respond to further inquiry. The 24 participants all worked with CHWs in rural Pennsylvania and represented the following counties: Adams, Bradford, Clarion, Clearfield, Clinton, Columbia, Juniata, Lycoming, McKean, Monroe, Potter, Schuylkill, Susquehanna, and Warren. Participants in the leadership interviews worked for various types of agencies. Some positions of leadership included: directors of mental health agencies, director of community health care agency, director of community outreach and government relations for a hospital, director of hospice, director of county Head Start/early Head Start/pre-K, director of volunteer health programs for a large church, director of a WIC program for a hospital, director of an Area Agency on Aging, director of home health and hospice program, director of nursing for a hospital, statewide coordinator of an Alzheimer's organization, business manager for a large rural health system, former director of county volunteers in medicine, director of community and employee relations in a hospital, and director of health improvement coalition. There were some participants who held statewide positions that worked with multiple rural counties. All 24 participants who volunteered to participate completed the interview. These leadership participants discussed the roles and responsibilities of workers who were not officially certified as CHWs in Pennsylvania because there is no certification process for CHWs in Pennsylvania.

Focus groups

A total of seven focus groups were conducted in each of the six health districts of Pennsylvania. The majority of participants included those who work in mental health or home health/hospice. The focus groups were conducted in 1. Clearfield County, Northwest Health District; 2. Bradford County, North Central Health District; 3. Schuylkill County, South East Health District; 4. Adams County, South Central Health District; 5. Montour County, North Central Health District; and 6. Cambria County, Southwest Health District.

The focus group participants held positions in health care, mental health, and social service agencies, and most lacked the official title of CHW, yet performed roles defined as CHW. The focus groups were conducted in rural counties in each health district.

Participants from the leadership phone interviews identified various members of the community who had knowledge of CHWs. In Towanda, Pa., a director of a mental health center and a director of an area office on aging identified supervisors/administrators of CHWs and CHWs. In Pottsville, Pa., the director of a mental health center identified CHWs and their supervisors/administrators. In Adams County, the director of a local health group recruited CHWs and CHW supervisors/administrators from various agencies. In Montour County, the supervisor of the CHW program at a hospital recruited CHWs. In Cambria County, the focus group participants were recruited by the Area Agency on Aging administrator. In Clearfield County, a manager for home health and hospice assisted with recruitment. The researchers conducted the focus group sessions, and, after each focus group, the group discussions were reviewed for accuracy as they were transcribed. There were a total of 49 participants, with a range of four to 11 participants in each of the seven focus groups. The questions were designed to gain knowledge of the CHWs role, training/education, and funding.

Table 1 provides the number of participants for each focus group.

Table 1: Number of Participants in Each Focus Group						
Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
8	8	7	5	4	6	11

Data Analysis

Data from the CHW and supervisor/administrator surveys were analyzed using the Statistical Package for the Social Sciences Version 16.0 (SPSS 16.00). The survey was conducted through Survey Monkey. A total of 140 CHW surveys and 70 supervisor/administrator surveys, with representation from 37 rural counties, were fully completed. The response rate to the surveys was very low. For example, an email was sent out on a list serve to all directors of the Area Agencies on Aging and there was only one response from all 48 rural counties. Outreach to another list service for community health centers in Pennsylvania resulted in no responses to the two surveys. A list of agencies using CHWs from the Department of Health resulted in zero responses. Snyder (2013) had a 53.9 percent survey response rate (159/295) to a specific group of participants identified by a health alliance in Pennsylvania.

The researchers used NVIVO (qualitative software program) to analyze the leadership phone interviews and focus group data. Frequency distributions (how often a variable occurs), means (averages), and standard deviations (deviations from mean) were performed to obtain descriptive statistics from the surveys. The researchers also investigated relationships between individual variables. When appropriate, multiple regressions analyses were used to determine relationships between multiple variables. The researchers created crosstabs to draw maps based on different variables. For the CHW survey, stepwise regression (uses models of prediction) was used to ascertain if total number of tasks reported, opportunities to increase the use of CHWs in agency health care teams, and number of people served each month predict participants' perceptions of their work to improve health outcomes of their clients.

The low response rate for the supervisor/administrator survey prohibited the use of discriminant function analyses, so the researchers ran nominal regression analyses for the supervisor/administrator survey; no results were obtained because the number of respondents was not large enough for this type of analysis.

Results

Focus Groups

During the seven focus groups, a variety of responses to questions occurred depending on the context of the group, which included two groups of peer specialists (Groups 2 and 4), an agency belonging to a health improvement community organization (Group 1), three agencies providing home health and hospice in the community (Groups 3, 5 and 7), and a group providing services from a hospital system in the community (Group 6).

The discussion of the focus groups illuminated current issues related to CHW roles and responsibilities, health care delivery models, health outcomes and barriers.

Roles and Responsibilities

A central theme identified by a majority of the focus groups was diversity in roles and responsibilities, including: establishing caring and trust; obtaining resources, such as housing or transportation; medical advocacy; basic medical screening; mental health education and health education; and performing custodial care (See Table 2).

Table 2: Frequency Count of Roles and Responsibilities Identified in Focus Groups

Caring and Trust	Obtaining Resources such as Housing or Transportation	Medical Advocacy	Basic Medical Screenings	Mental Health and Health Education	Custodial Care
3 Focus Groups	4 Focus Groups	6 Focus Groups	2 Focus Groups	4 Focus Groups	2 Focus Groups

Effective Delivery Models

Effective delivery models are important for CHWs to be proficient in the many settings in which they work. Table 3 lists various delivery models, including goal-oriented and workflow model, care about patients, coordinating care, peer specialist model, and certification process.

Table 3: Frequency Count of Effective Delivery Models Identified in Focus Groups

Goal- Oriented and Workflow Model	Care About Patients	Coordinate Care	Peer Specialist Model	Certification Process
3 Focus Groups	1 Focus Group	2 Focus Groups	2 Focus Groups	1 Focus Group

In Group 5, participants emphasized the importance of a goal-oriented and workflow model. One participant explained that the model is set up as an algorithm system that helps CHWs know what to do, and when, likening it to a best practices pathway. In Group 4, a participant discussed the importance of the peer specialist model, explaining, “This organization developed the forensic peer specialist. It was effective model building. It is now a model across the state.”

There were various discussions about the effectiveness of certification for CHWs and various opinions about the benefits of certifying CHWs. There was a balance of opinion on the pros and cons of certification as an effective model for CHWs.

Barriers

In their work, CHWs face various barriers, which include lack of funding/reimbursement for services, transportation issues, worker burn out, lack of understanding of CHW roles, and the certification process.

Table 4: Frequency Count of Barriers Identified in Focus Groups

Lack of Funding/Reimbursement For Services	Transportation Issues	Worker Burn Out	Lack of Understanding of CHW roles	Certification Process
3 Focus Groups	2 Focus Groups	3 Focus Groups	2 Focus Groups	1 Focus Group

Health Outcomes

CHWs can impact health outcomes of patients in the areas of disease management, recovery at the patient's own pace, keeping patients safe at home, focusing on wellness, and building an increased sense of self-worth.

Table 5: Frequency Count of Health Outcomes Identified in Focus Groups

Disease Management	Recovery at Own pace	Keep Safe at Home	Focus on Wellness	Increased Sense of Self Worth
4 Focus Groups	2 Focus Group	1 Focus Group	1 Focus Group	1 Focus Group

Health Problems

CHWs deal with various health problems, and this was evident in all the focus groups. In the third group, a participant noted that CHWs deal with dementia, Alzheimer, diabetes, Chronic Obstructive Pulmonary Disease (COPD), bipolar, and schizophrenia.

Table 6: Frequency Count of Health Problems Identified in Focus Groups

Obesity	Diabetes	Heart Disease	Mental Health Issues	Malnutrition
4 Focus Groups	5 Focus Groups	2 Focus Groups	5 Focus Groups	1 Focus Group

Education/Training

Education and training are important to CHWs. In this area, varied backgrounds, certification as a barrier, the need for firsthand experience, and the need for medical training were the main themes highlighted by participants.

Frequency Count of Education/Training Identified in 7 Focus Groups—Table 7

Varied backgrounds	Certification may be a barrier	Need First-hand Experience	Medical Training Needed
1 Focus Group	2 Focus Groups	2 Focus Groups	2 Focus Groups

Opportunities for Increasing Use of CHWs

In the focus groups, participants stressed the need for increasing the use of CHWs. More use of CHWs would be based on increased funding and pay for CHWs, increased awareness among doctors and hospitals, more trained CHWs, and being less professional and less regulated.

Table 8: Frequency Count of Increasing Opportunities Identified in Focus Groups

Increased Funding and Pay for CHWs	Increased awareness for doctors and hospitals	More Trained CHWs	Less professional and less regulated
3 Focus Groups	2 Focus Groups	2 Focus Groups	2 Focus Groups

It should be noted that some participants in the focus groups noted that more training might increase the opportunities for CHWs. Some particpants also said that being less professional and less regulated might also increase opportunities.

Summary of Focus Group Results

The focus group results point to a diversity of roles and job responsibilities for CHWs in rural Pennsylvania, as well as diversity in the types of agencies, such as hospitals, Community Action programs, home health, hospice, and mental health, in which CHWs work. A major job

responsibility identified was medical advocacy followed by obtaining resources and provision of health and mental health education.

A second major theme identified from the focus groups was that of an effective delivery model. Participants said that a goal or workflow model is most helpful for CHW workers. They also noted that barriers, such as a lack of sustainable funding and worker burnout, exist.

In addition to barriers, health outcomes were identified during the focus group discussion. The major health outcome that the CHWs are perceived to assist with is disease management. Health problems included obesity, diabetes, heart disease, mental health issues, and malnutrition. Another major theme identified by the focus groups included the perception that education and training are important for CHWs. However, the need for certification was not perceived as important by all focus groups. Peer specialists in the area of mental health said that they currently have a specific certification and training process, whereas some focus group participants from other areas said that CHWs can work effectively from on-the-job training.

Lastly, the focus groups identified the opportunities to expand the use of CHWs in many different areas of healthcare, saying that they can play an important role in the mental and physical health of those living in rural Pennsylvania.

Leadership Interviews

The research included interviews with representatives of 24 organizations/agencies located in 23 counties. One agency had statewide coverage (See Table 9).

Table 9: Leadership Phone Interviews by Agency

Agency	Number of Participants
Home health	1
Home care	1
Hospital	4
WIC	1
Social service agency helping the elderly	2
Mental health	6
Health consultant	1
Volunteer advocacy group	3
Health system	1
Hospice	2
Head Start	1
Church	1
	Total = 24

Table 10: Leadership Phone Interviews by County

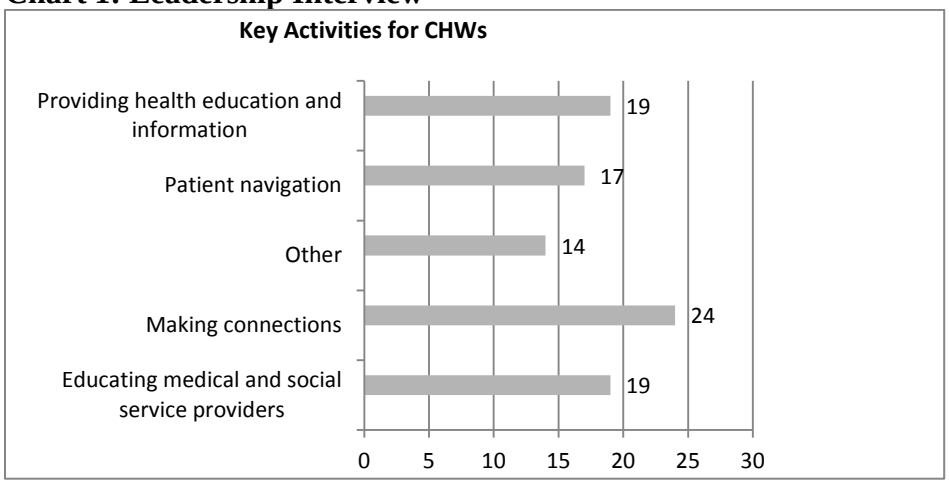
County	Participants
Columbia	1
Potter	3
Schuylkill	1
Monroe	1
Adams	3
Lycoming	2
Warren	1
Bradford	4
Centre	2
Juniata	2
Statewide	1
Clearfield	1
Clarion	1
Susquehanna	1
Total=	**24**

Following are the 15 questions asked during the interviews and a summary of responses.

Roles and Responsibilities of CHWs

Q: At your agency what are the key activities for CHWs? (making connections, educating medical and social service providers, providing health education and information, leading support groups, basic screenings, health insurance enrollment assistance, patient navigation, care coordination)

Chart 1: Leadership Interview



Note: Participants were coded for responding to all that apply. N = 24, 2016.

CHW duties and responsibilities varied depending on the agency. One mental health center reported that case management was a key activity. Another participant from a mental health center stated that peer specialists empower clients to manage their recovery. In a hospice program, volunteers are the liaison in the community and run bereavement groups. At an agency, key activities include, "prioritizing needs/families, guiding families to community resources, providing different levels of support, facilitating parent-child relationships, developing family partnership agreements, providing transportation if needed and education."

At a hospital, CHWs were health coaches in the community and EMTs assisted patients in the community when not actively delivering services.

Depending on the setting, CHWs provide a broad scope of community activities including patient navigation, connecting to services, providing BP screenings, offering health education, running health fairs, leading support groups, obtaining medical equipment, and identifying needs in patients.

Models of Effective Service Delivery

Q: At your agency how do you deliver effective services with CHWs in rural areas of Pennsylvania?

Chart 2: Leadership Interview

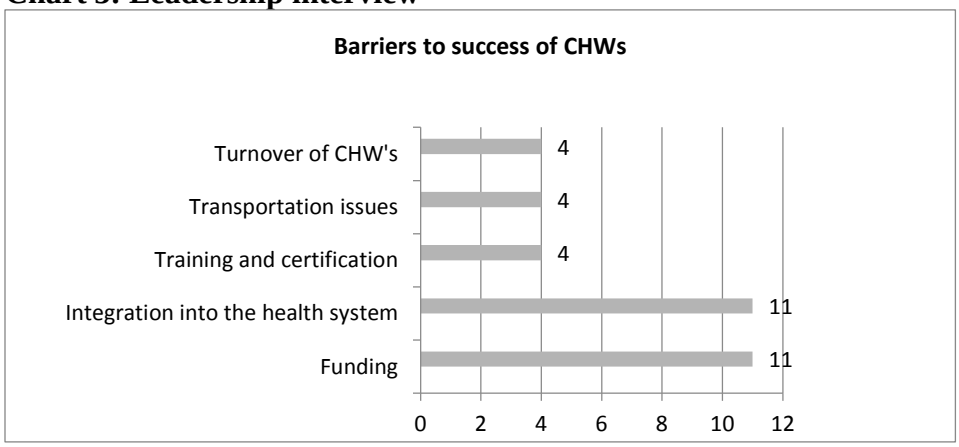
Note: N = 23, 2016.

One participant said that, with so many volunteers, it was an issue to provide coordination to all of them. Another participant stated that being in a rural area makes delivery of services difficult since CHWs need to go to the community members to provide services. One participant said that the management team looks at various things to help deliver effective services to the community. The agency has a small, bilingual population (Hispanic), so it hires culturally sensitive staff to work with the individuals. The management team tries to understand the community, the families and their needs. Overall for volunteer and paid CHWs, services were delivered in an effective manner.

Barriers to Success

Q: At your agency what are the barriers to success of CHWs? Funding, training and certification, integration into the health system.

Chart 3: Leadership interview



Note: Participants were coded for responding to all that apply. N = 24, 2016.

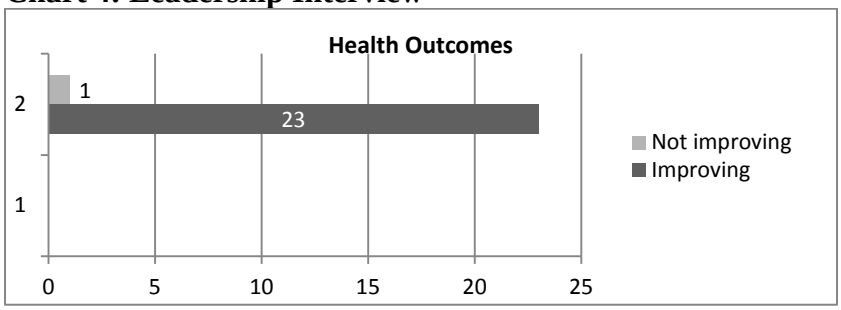
In a hospice setting, barriers to success included communication, salary and work conditions. One participant noted that it takes a special person to work in this field day in and day out. The age of CHWs may also be a barrier since some are in their 60s and 70s.

In a hospital setting, barriers to success were worker burnout and funding. At a mental health setting, barriers to success were consumer engagement/frustrating population; clients that don't want to make changes in their lives; transportation; lack of coordination among other community providers; and limited ability to network due to patient confidentiality.

Health Outcomes

Q: Are health outcomes improving at your agency due to the work of CHWs?

Chart 4: Leadership Interview



Note: N = 24, 2016.

For one hospital, readmissions decreased 15 percent due to the work of CHWs. Another hospital reported that reducing readmissions solidified the use of out-patient clinics in the community. Health outcomes in a community setting included improvement in depression and breast cancer rates, as well as oral health. There has been an effort to serve low-income people with dental care. Also, there have been fewer nursing home admissions. One participant stated that it was difficult to determine health outcomes.

Populations Served

Q: At your agency what populations are being served by CHWs?

One participant reported CHWs working with "the elderly, disabled, some with financial need, middle-aged or young people with disabilities, and a handful of pediatric patients with special needs." At another agency, the populations served were children and infants to 5 years, pregnant women, non-breastfeeding mothers, and breastfeeding mothers. The severely mentally ill comprised most of the population served at mental health agencies.

Health Issues Being Served

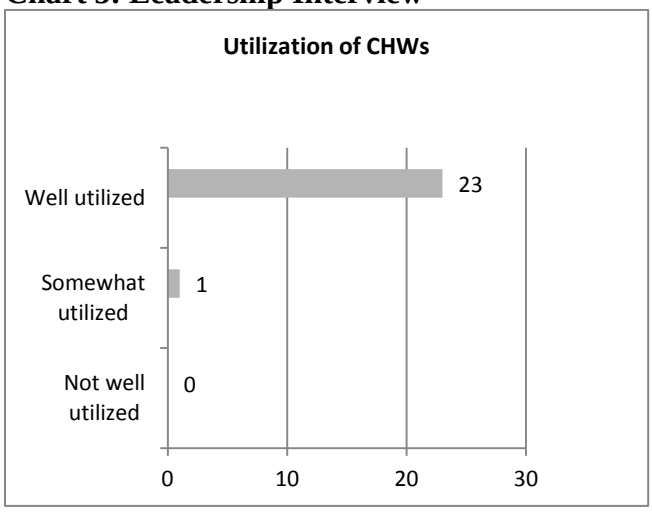
Q: At your agency what health issues are being addressed by CHWs?

At home care agencies, the issues were congestive heart failure, diabetes, COPD, obesity, cancer, and developmental, cognitive and physical disabilities. At a hospital, a participant reported "frequent flyers" to the ER and chronic illnesses. A faith-based participant stated that health issues vary.

Utilization of CHWs

Q: Tell me about your agency and how community health workers (CHWs) are utilized?

Chart 5: Leadership Interview



Note: N = 24, 2016.

There were two ends of the spectrum for CHWs: trained, paid CHWs and volunteers. At one agency, the participants stated that everyone is trained to be a CHW. CHWs would reconnect after a visit, find resources, visit homes where patients were chronically ill, and looked after each person as an individual. In a number of leadership interviews, participants talked about the roles of peer specialists with mental health patients in the community.

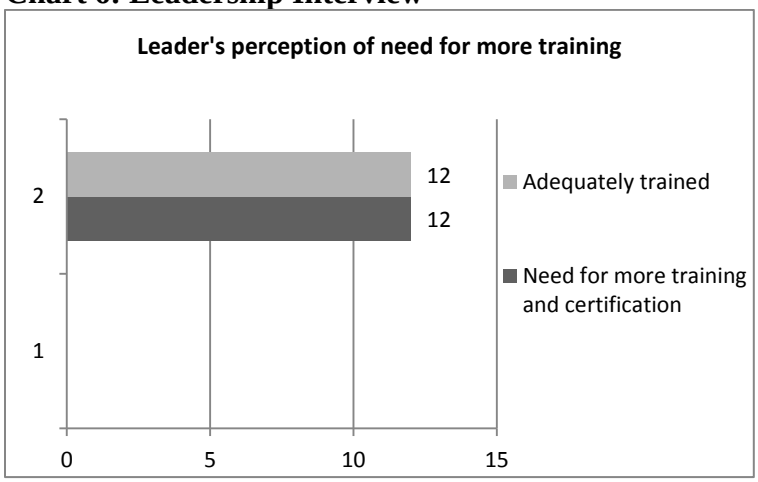
A hospice agency had a long-standing relationship with the community with over 100 volunteers; they were not interested in the professionalization of CHWs. A church ministry discussed the importance of volunteers in doing community health work.

Based on the coding of data and the participant responses, the researchers confirmed that community health workers who are employed and who volunteer are effectively used. CHWs, both paid and volunteer, were considered crucial members of the health team.

Training and Certification

Q: At your agency what are the training and certification needs for your CHWs?

Chart 6: Leadership Interview



Note: N = 24, 2016.

The participants identified a variety of training and certification needs for CHWs. Some agencies felt that training needs were being met while others felt more training was needed. In mental health agencies, participants felt that there could be added training for peer specialists. In some health agencies, participants stated that training was adequate for the job responsibilities.

Q: Are the current training and certification requirements for your CHWs adequate in your agency?

Chart 7: Leadership Interview

Note: N= 24 participants, 2016.

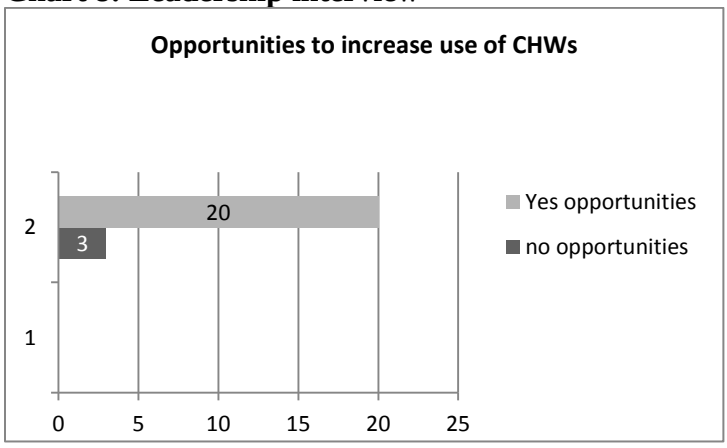
Some participants said training and certification requirements were adequate, while others said they were not. There are a variety of training and certification requirements that vary from agency to agency. Again, there are no official certification requirements for CHWs.

One participant found the training requirements in the hospice field to be adequate among CHWs. In the field of mental health, participants said that an area of weakness was documentation in medical records by peer specialists. It was evident among participants that training requirements could be improved. One agency with volunteers found that there were very few requirements for training, while another agency had very formal training.

Increase the Use of CHWs

Q: Are there opportunities to increase the use of CHWs in health care teams at your agency?

Chart 8: Leadership interview



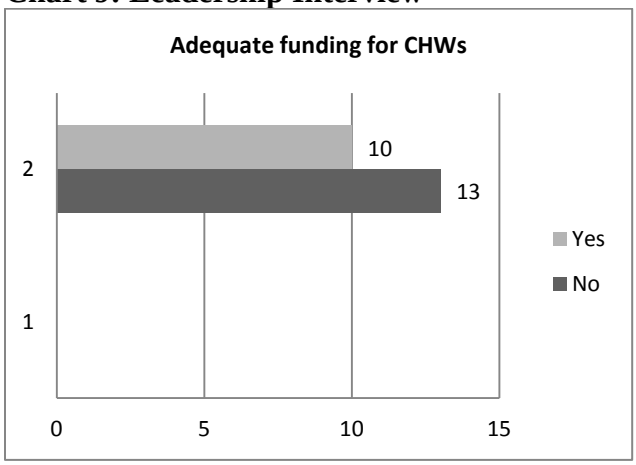
Note: N = 23, 2016.

Most participants said there were opportunities to increase the use of CHWs, based on funding. One participant said an increase was necessary because there are many isolated areas that need these types of services. One participant stated that if programs don't break even, they don't expand them.

Funding

Q: Is there adequate funding for CHWs at your agency?

Chart 9: Leadership Interview



Note: N = 23, 2016.

Participants in the area of mental health found there to be adequate funding. Participants from the health agencies found a need for more funding because the sources of funding were often not adequate. One participant from a hospital said that because of inadequate funding, it was difficult to provide training and certifications to CHWs. Reinforcing this point of view, another participant said that reimbursement rates are low, and don't increase steadily or significantly, so CHWs are not paid well. Another participant said that increased funding would help to increase the wages of the CHWs and support professional development activities. Participants in volunteer organizations were more apt to state that there were no funding issues. Even though there was a difference of opinion about funding, it was evident that there are significant weaknesses in the funding of CHWs in Pennsylvania.

Summary of Leadership Interviews

Participants in the leadership interviews discussed a variety of CHW roles and responsibilities, including patient navigation, connecting patients to services, providing blood

pressure screenings, offering health education, running health fairs, leading support groups, obtaining medical equipment, and identifying needs in patients depending on the setting. Volunteer and paid CHWs provided effective service delivery. Barriers to success included CHW turnover, transportation issues, training and certification, integration into the health system, and funding.

At a mental health setting, barriers to success were consumer engagement/frustrating population; clients that don't want to make changes in their lives; transportation; lack of coordination among other community providers; and limited ability to network due to patient confidentiality.

Participants said that patient health outcomes have shown improvement. For one hospital, readmission decreased 15 percent due to the work of CHWs. Another hospital reported that reducing readmissions solidified the use of outpatient clinics in the community. Health outcomes in a community setting included improvement in depression and breast cancer rates, as well as oral health. There has been an effort to serve low-income people with dental care. Also, there have been fewer nursing home admissions. Very broad populations are being served by CHWs in the areas of health and mental health.

At home care agencies, CHWs helped patients with issues such as congestive heart failure, diabetes, COPD, obesity, cancer, and developmental, cognitive and physical disabilities.

There were a variety of training and certification needs for the CHWs based on the agency. Some agencies felt that training needs were being met, while others said there was a need for further training. In mental health agencies, participants said there could be added training for peer specialists. In some health agencies, participants said training was adequate for the CHWs' job responsibilities. Some agencies said the training and certification requirements were adequate, while others they were not.

There are a variety of training and certification requirements that vary from agency to agency. Because there are no official certification requirements for CHWs, training is varied. Most agencies felt there were opportunities to increase the use of CHWs, especially in isolated areas of the state.

There were differences in opinion about the adequacy of funding among participants, however, it was evident that there are significant weaknesses in funding to support the use of CHWs in Pennsylvania.

CHW Survey

Training and Certification for CHWs

Training is a critical aspect of any professional job in the health field. In Pennsylvania, there is no official certification program for CHWs, but there are some training programs. In other states across the U.S., there are certification boards that design certification programs.

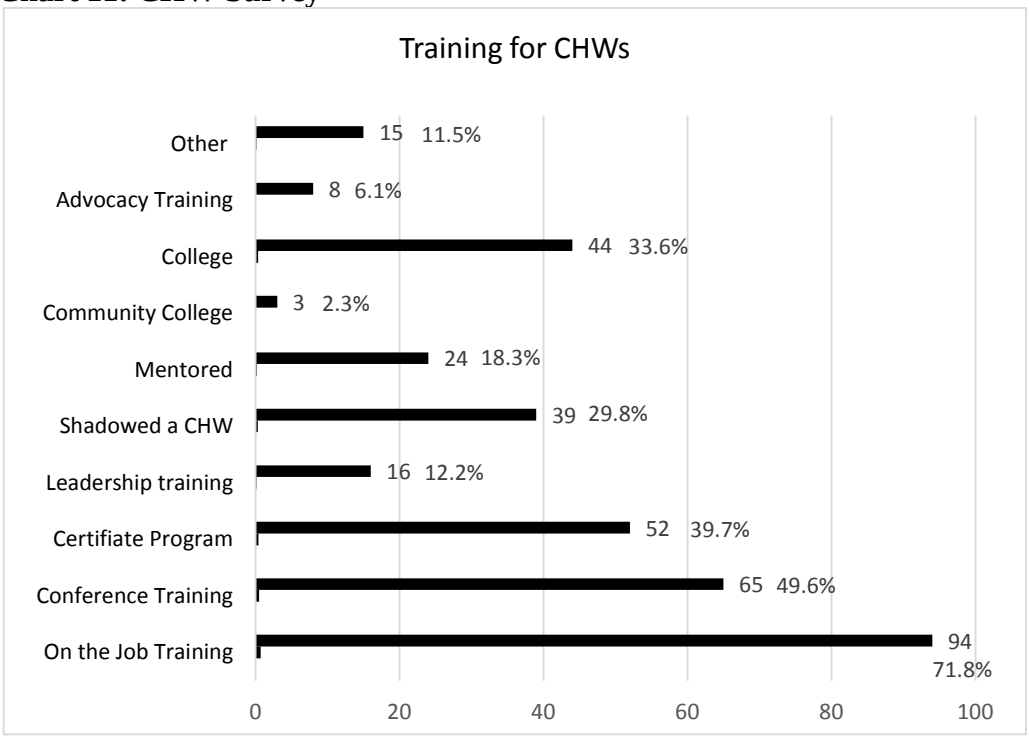
Most CHWs receive training of some type, according to the survey data. The issue is that the training is so varied. The CHW survey showed that 89 percent of study respondents had some type of training (See Chart 10).

Chart 10: CHW Survey

Note: N = 146, 2016.

The survey results show a variety of training, including mentoring, shadowing, certificate programs, and on-the-job training (See Chart 11). Without a certification program, it is very difficult to determine the appropriate training needs of CHWs.

Chart 11: CHW Survey



Note: N = 131, 2016. Multiple responses allowed so total does not add to 100%.

A basic question is whether those newer to the field received different types of training than those who have been doing this work for many years. The survey indicated that there were no significant differences between training sources, with a few notable exceptions. A comparison of those with 5 or fewer years of service and those with more than 5 years indicated a significant difference in their use of training conferences. More experienced respondents (60 percent) reported using training conferences more frequently than did less experienced respondents (42 percent). This may be a result of the experienced CHWs identifying specific needs and seeking

out conferences to fulfill the desired training. It may also be a product of senior members of the workforce having greater access to training conferences once hired by an agency.

When years of service were grouped by 5-year increments and cross tabulated with training types, the results indicated that advocacy training was more prevalent in the preparation of those within the field for 16-20 years (25 percent) and 21+ years (12 percent) than it was in the first 3 years-of-service categories (3 percent, 4 percent, and 0 percent, respectively).

Finally, when comparing those with and without each training type on years of service, the results indicated that those without on-the-job training had significantly more years of service than those with on-the-job training. While this form of training is not new, it does appear to be a more common type of training with recent entrants into the field.

CHW Workforce Characteristics

The mean number of years worked or volunteered is 9.08, and the current mean age is 48.21, indicating an older workforce with significant experience on the job. The workforce is predominantly female (91 percent), with very few males (9 percent). There are a variety of work titles among CHWs: 46 percent of respondents had job titles other than CHW (See Table 11).

Table 11: Title for CHWs

Title of Worker	Percentage	Responses
Community Health Worker	11.0%	16
Certified Community Health Worker	4.1%	6
Case Manager	4.1%	6
Community Health Advocate	0.7%	1
Community Health Educator	3.4%	5
Outreach Worker	2.1%	3
Community Care Coordinator	0.0%	0
Community Worker	1.4%	2
Outreach Specialist	1.4%	2
Peer Specialist	4.1%	6
Home Visitor	11.7%	17

Community Health Adviser	0.0%	0
Patient Navigator	0.7%	1
EMT	0.7%	1
Community Health Aid	4.8%	7
Helpers	2.1%	3
Promotores(promoters)	0.0%	0
Patient Advocate	0.0%	0
Health Coach	0.0%	0
Patient/Teen Educator	0.7%	1
Lactation Consultant	0.7%	1
Other	46.2%	67

Note: N = 145, 2016.

Table 12 illustrates the sample size of CHWs in each county.

Map 1 illustrates that in some rural counties, the average age of CHWs is almost reaching the age of retirement.

Map 2 shows the number of years working as a CHW in rural Pennsylvania. Some counties have workers with little experience, which shows a high turnover rate and may be of concern for the future of CHWs in that county. One county's mean number of years working was 18 years.

Map 3 explains the diversity of yearly salaries in rural counties; in some counties, it appears adequate, while in other counties it is very low. The highest mean salary in rural counties was $55,000.

Maps 4 and 5 detail the number of paid versus volunteer CHWs in rural Pennsylvania counties. It is concerning that volunteers seem to be concentrated in a few rural counties. Most counties had a very limited number of volunteers, but this may be because the survey results do not include data from all rural counties.

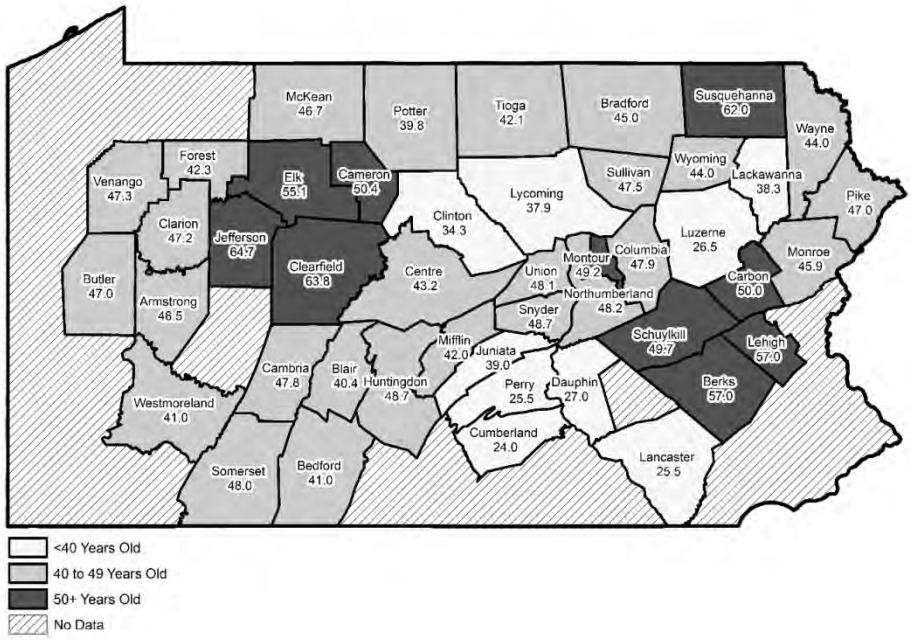
Map 6 shows the number of CHWs distributed across the state. As shown, some counties have a high distribution of CHWs.

Table 12: Volunteer and Paid CHWs by County

Counties	CHW respondents N =144	Volunteer N=34	Paid N=110
Bedford	1	0	1
Berks	6	0	6
Blair	6	0	6
Bradford	7	0	7
Butler	1	0	1
Cambria	5	0	5
Cameron	8	3	5
Carbon	4	0	4
Centre	8	1	7
Clarion	10	0	10
Clearfield	16	12	4
Clinton	10	0	10
Columbia	9	0	9
Cumberland	1	0	1
Dauphin	1	0	1
Elk	18	10	8
Forest	7	0	7
Huntingdon	3	0	3
Jefferson	15	9	6
Juniata	1	0	1
Lackawanna	4	0	4
Lancaster	2	0	2
Lehigh	1	0	1
Luzerne	4	0	4
Lycoming	8	0	8
McKean	8	2	6
Mifflin	3	0	3
Monroe	9	0	9
Montour	9	0	9
Northumberland	11	0	11
Perry	2	0	2
Pike	2	0	2
Potter	10	0	10
Schuylkill	6	0	6
Snyder	7	1	6
Somerset	4	0	4
Sullivan	2	0	2
Susquehanna	1	0	1
Tioga	18	1	17
Union	9	1	8
Venango	6	0	6
Wayne	2	0	2
Westmoreland	1	0	1
Wyoming	2	0	2

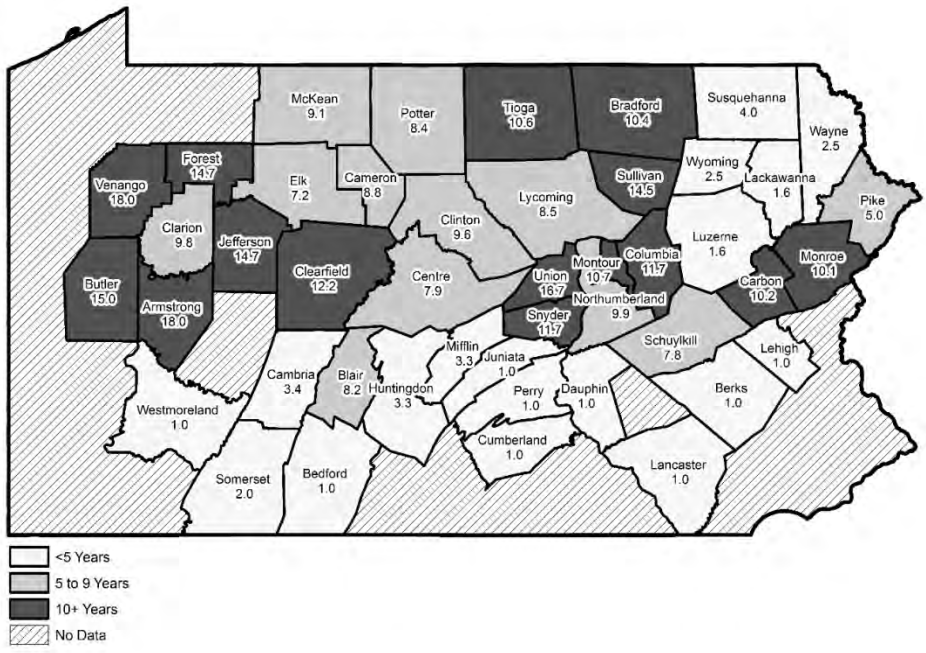
Note: N = 144 participants. Multiple responses allowed.

Map 1: Distribution of CHWs by Age



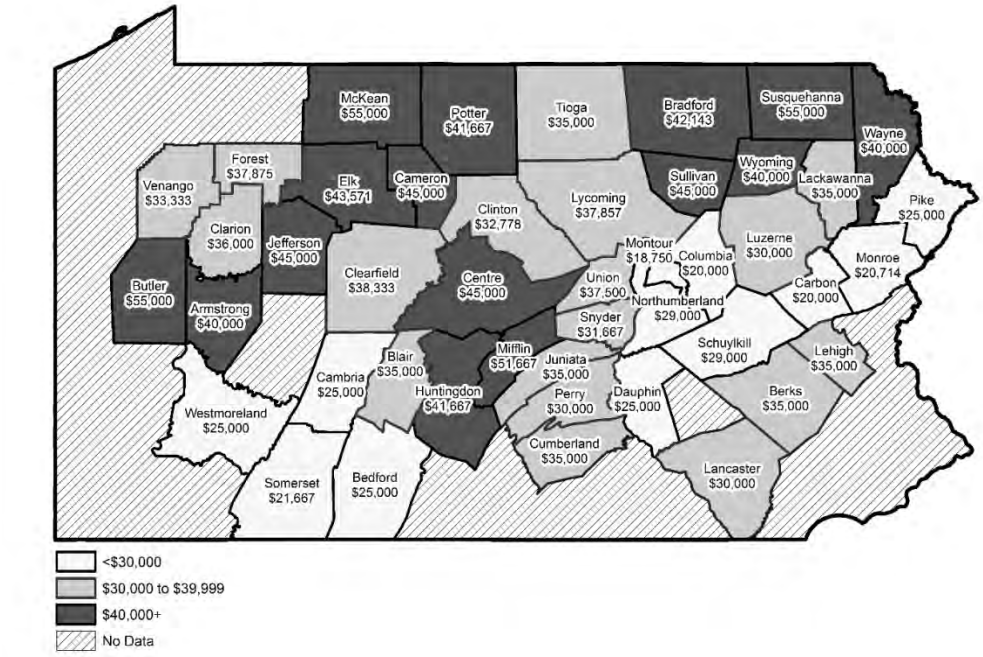
Note: N = 144, 2016. Multiple responses allowed.

Map 2: Distribution of CHWs by Years Working as CHW



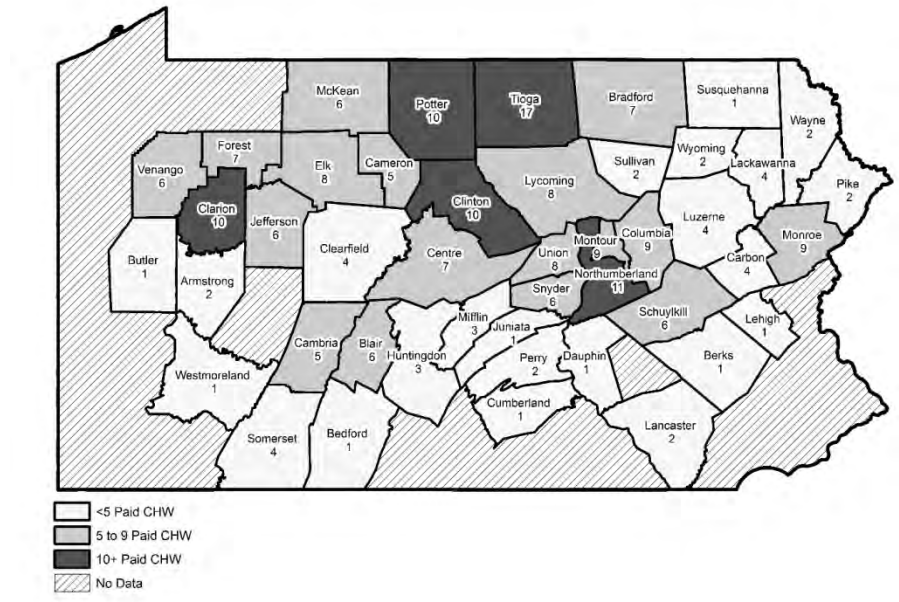
Note: N = 144, 2016. Multiple responses allowed.

Map 3: Mean Salary Ranges for CHWs



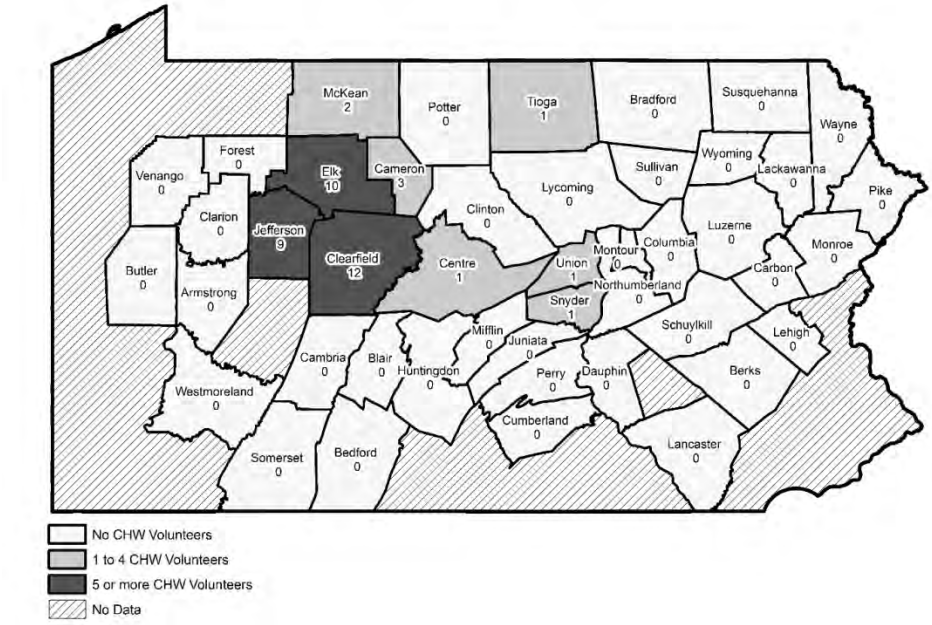
Note: N = 144, 2016. Multiple responses allowed.

Map 4: Number of Paid CHWs



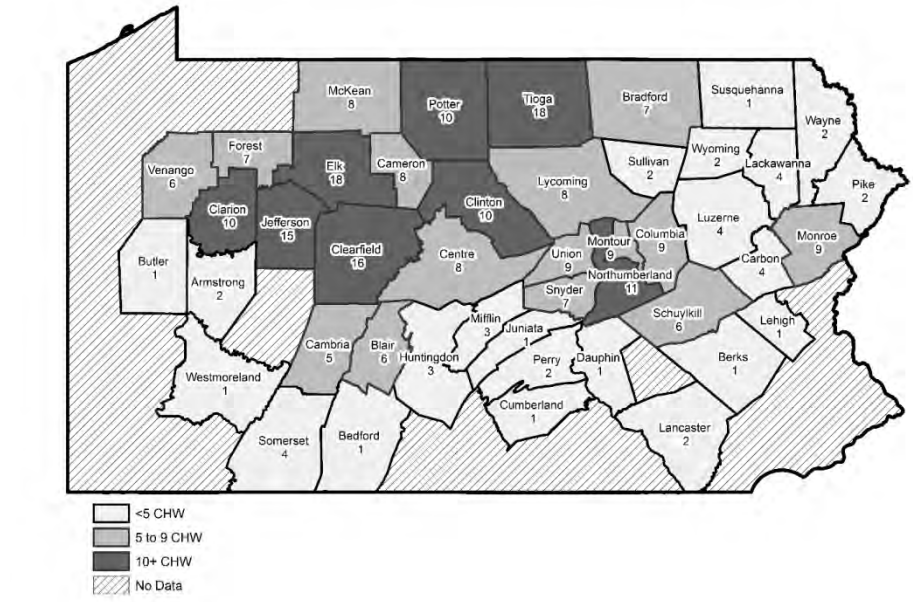
Note: N = 144, 2016. Multiple responses allowed.

Map 5: Number of Volunteer CHWs



Note: N = 144, 2016. Multiple responses allowed.

Map 6: Distribution of CHWs in Pennsylvania

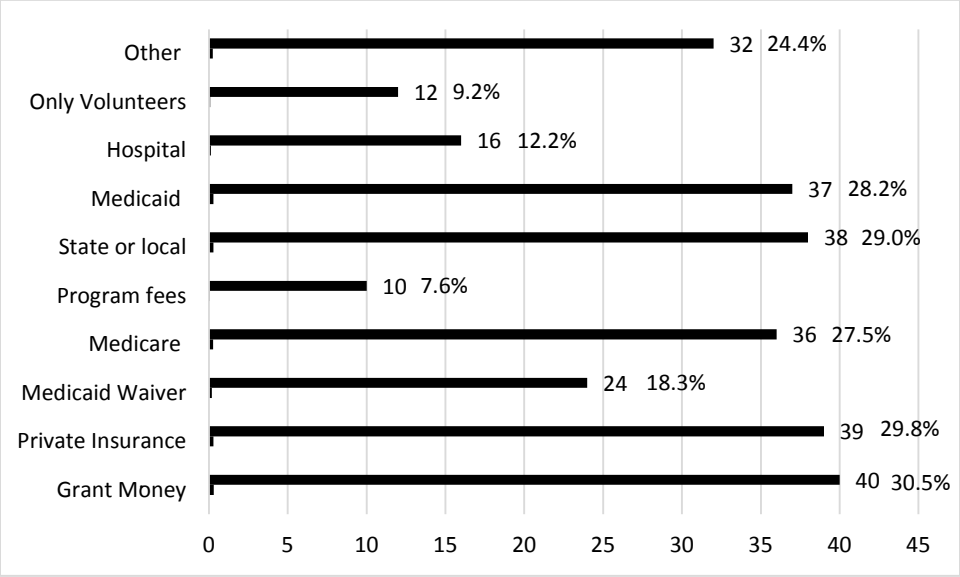


Note: N = 144, 2016. Multiple responses allowed.

Funding Sources for CHWs

Chart 12 shows the variety of funding resources for CHWs. Presently, there seem to be many sources of funding for agencies. In the chart, state or local government indicates funds that are not federal funds.

Chart 12: Funding Sources for CHWs

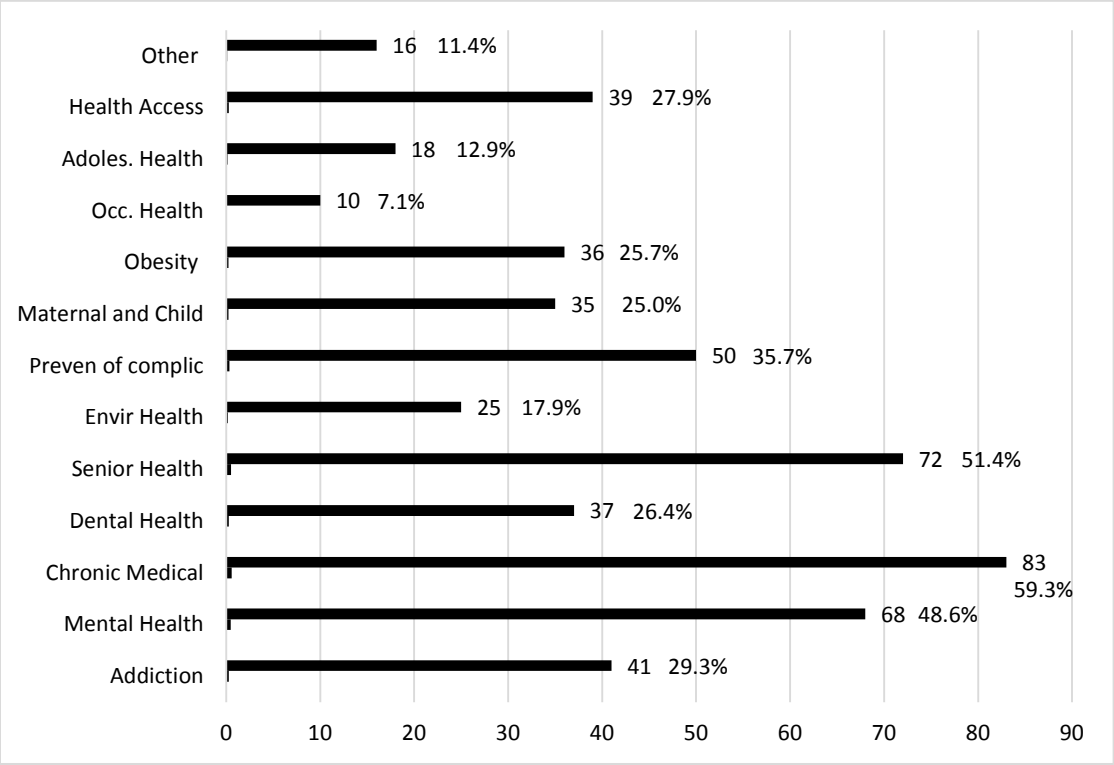


Note: N = 131, 2016.

Health and Mental Health Issues of Clients/Patients

Chart 13 shows a variety of health and mental health issues among the CHW caseloads. Oftentimes, CHWs confront a multiplicity of mental health and health issues, which makes the job of CHWs very difficult to perform. With such a variety of mental health and health issues being addressed, CHW knowledge in these areas is critical. Patients may be taking a variety of mental health and physical health medications, be diagnosed with multiple disorders, and have numerous service providers delivering multiple types of services. The surveys, leadership interviews, and focus groups confirmed this diversity of health and mental health issues.

Chart 13: Health or Mental Health Issues Based on Caseload



Note: N = 140, 2016. Multiple responses allowed.

Work Conditions for CHWs

Salary ranges for different types of CHWs were cross tabulated with the type of work they do (Table 13) and type of agencies for which they work. A majority of volunteers worked in hospitals, faith-based organizations, and community-based organizations. For CHWs working for health insurance companies, clinics, mental health clinics, and community-based organizations, salaries were between $20,000 and $59,999.

Excluding volunteers, the distribution of several tasks appeared to be tied to salary. For example, higher salaried individuals were more likely to engage in the following: provide health education, make referrals, provide clinical services, conduct health fairs, collaborate with agencies, perform peer education, provide counseling, document health records electronically, perform administrative work, follow up on referrals, and identify resources.

Lower-salaried CHWs were more likely to perform the following tasks: providing transportation, and accompanying clients to appointments.

Table 13: CHW Tasks and Salaries

Tasks in the Community	**<$10,000**	**$10,000-$19,999**		**$50,000-$59,999**	**$60,000-$69,999**
Provide health ed & information	2 (15%)	6 (40%)		9 (100%)	3 (100%)
Make referrals	2(15%)	4 (27%)		5 (56%)	2 (67%)
Provide clinical services	1 (8%)	1 (7%)		4 (44%)	3 (100%)
Conduct health fairs	1 (8%)	0 (0%)		5 (56%)	1 (33%)
Collaborate with other agencies	4 (31%)	3 (20%)		8 (89%)	3(100%)
Perform peer education	1 (8%)	0 (0%)		3(33%)	3(100%)
Provide counseling	3(23%)	1 (7%)		0 (0%)	1 (33%)
Provide health documentation	0 (0%)	2 (13%)		4 (44%)	3 (100%)
Perform administrative work	1 (8%)	4(27%)		4(44%)	2 (67%)
Provide transportation	6 (46%)	3 (20%)		0 (0%)	0 (0%)
Follow up referrals	2(15%)	3 (20%)		4(44%)	3 (100%)
Accompany clients to appointments	8 (62%)	5 (33%)		0 (0%)	1 (33%)
Identify resources	4(31%)	4 (27%)		5 (56%)	3(100%)

Note: N = 145, 2016.

Age, training, and volunteer status were compared with number of people on the monthly caseload (Tables 14 and 15). The results for age were not meaningful because of the many different age categories.

Volunteer CHWs tended to have smaller caseloads, about 1 to 5 a month, and paid CHWs had larger caseloads. CHWs with small caseloads (1-5) had significant training via conference training, certification, on-the-job training, and shadowing. CHWs with large caseloads (31 or more) had significant training via on-the-job training, conference training, certification training, shadowing, and college.

Table 14: Caseloads for Paid/Volunteer CHWs

Clients served each month	Paid	Volunteer
1-5	15 (14.3%)	21 (67.7%)
6-10	8 (7.6%)	3 (9.7%)
11-15	6 (5.7%)	0 (0.0%)
16-20	13 (12.4%)	3 (18.8%)
21-25	5 (4.8%)	0 (0.0%)
26-30	7 (6.7%)	2 (6.5%)
31or more	51 (48.6%)	2 (6.5%)
Totals	105	31

Note: N = 136, 2016.

Table 15: Type of Training Compared to Caseloads

Type of training	Caseload 1-5		Caseload 31 or more
On the job	12 (16.9%)		43 (41.6%)
Conference training	21 (29.6%)		22 (16.1%)
Certificate	15 (21.1%)		17 (12.5%)
Leadership training	4 (5.6%)		8(5.9%)
Shadowing	9(12.7%)		14 (10.3%)
Mentoring	5(7%)		9 (6.6%)
Community college	0(0.0%)		0(0.0%)
College	5 (7%)		23 (16.9%)
Advocacy	0(0.0%)		0(0.0%)

Note: N = 135, 2016. Multiple responses allowed.

The survey results indicated that community-based agencies, public health agencies, hospitals, and faith-based agencies rely on volunteer CHWs.

Table 16: Type of Organization Using Paid/Volunteer CHWs

Type of Organization	Paid CHWs	Volunteer CHWs	Total
Clinic	11 (100%)	0	11
Community-based organization	35 (76.1%0	11(23.9%)	46
Health department	1 (100%)	0	1
Public health agency (federal and state)	8 (88.9%)	1 (11.1%)	9
Mental health agency	9 (90%)	1 (10%)	10
Hospital	10 (47.6%)	11 (52.4%)	21
Health insurance company	15 (100%)	0	15
Shelter	1 (100%)	0	1
Faith-based organization	1 (20%)	4 (80%)	5
Migrant camp	0	0	0
Other	43 (79.6%)	11(20.4%)	54

Note: N = 135, 2016. For type of organization, multiple responses allowed.

Table 17 shows the highest educational attainment level of CHWs by the type of organization in which they work.

Table 17: Highest Educational Attainment Level and Type of Organization

Type of organization	No High School	High School/GED	Some College	Associate's Degree	Bachelor's Degree	Some Grad School	Master's Degree	Doctorate	Total
Clinic	0	0	3 (27.3%)	2 (18.2%)	2 (9.1%)	1 (4.5%)	3 (27.3%)	0	11
Community Based Org.	1 (2.2%)	4 (8.7%)	9 (19.6%)	9 (19.6%)	12 (26.1%)	1 (2.2%)	10 (21.7%)	0	46
Health Dept.	0	0	0	1 (100%)	0	0	0	0	1
Public Health Agency	0	3 (33.3%)	3 (33.3%)	1 (11.1%)	2 (22.2%)	0	0	0	9
M.H. Agency	0	1 (10%)	1 (10%)	3 (30%)	0	5 (50%)	0	0	10
Hospital	0	2 (9.5%)	3 (14.3%)	4 (19%)	5 (23.8%)	2 (9.5%)	4 (19%)	1 (4.8%)	21
Health Insurance	0	2 (13.3%)	4 (26.7%)	3 (20%)	4 (26.7%)	1 (6.7%)	0	0	
Shelter	0	0	0	1 (100%)	0	0	0	0	1
Faith-Based	0	0	1 (20%)	1 (20%)	1 (20%)	0	2 (40%)	0	5
Migrant	0	0	0	0	0	0	0	0	0
Other	0	6 (11.3%)	15 (28.3%)	10 (18.9%)	10 (18.9%)	1 (1.9%)	10 (18.9%)	1 (1.9%)	53

Note: N = 135, 2016. For type of organization, multiple responses allowed.

Table 18 shows the highest educational attainment level by paid/volunteer status. It appears that the highest educational level has limited impact on employment status. This is consistent with the altruism fostered by the field, such that those once employed often seek volunteer opportunities later afterward.

Table 18: Highest Educational Level by Paid/Volunteer Status

Employment Status	No H.S.	H.S.\GED	Some College	Associate's Degree	Bachelor's Degree	Some Graduate	Master's Degree	Doctorate	Total
Paid	1 (9%)	13 (12.1%)	24 (22.4%)	21 (19.6%)	21 (19.6%)	4 (3.7%)	16 (15%)	1 (9%)	101
Volunteer	0 (0%)	6 (18.2%)	5 (15.2%)	9 (27.3%)	9 (27.3%)	0 (0.0%)	9 (27.3%)	1 (3%)	39

Note: N = 135, 2016.

Table 19 shows the different populations served by CHWS according to the highest levels of education. Across all populations served, there was significant use of CHWs who had bachelor's and master's degrees.

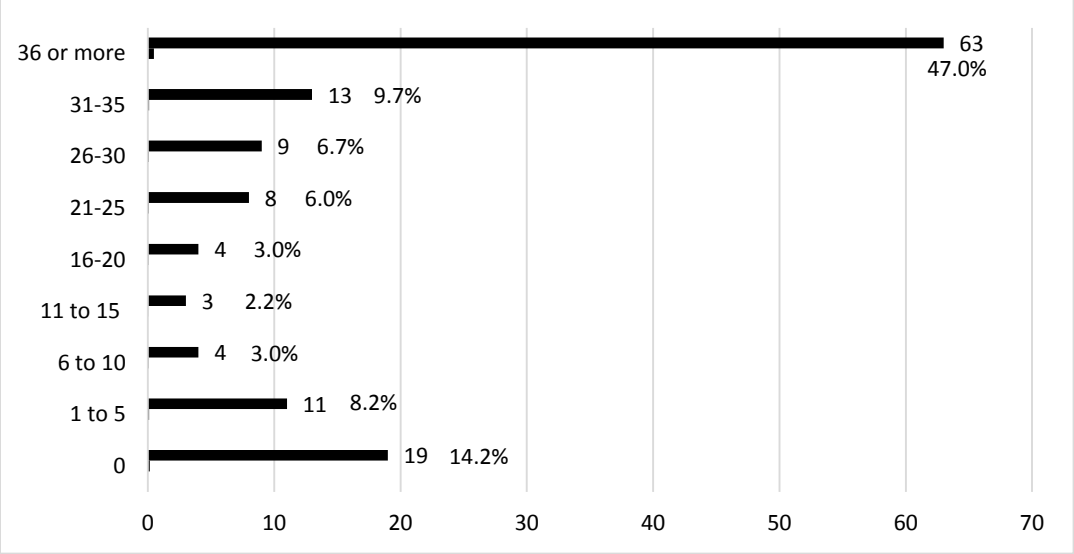
Table 19: CHW Education Levels and Populations Served

Populations	Bachelor's Degree		Master's Degree	Total
Elderly	17(17.2%)		17(17.2%)	99
Pregnant Women or New Parents	18(36.7%)		8 (16.3%)	49
LGBT	19(39.6%0		7(14.6%)	48
Minorities	22(36.1%)		14(23.0%)	61
Adolescents	18 (35.3%)		14 (27.5%)	51
Families	24(27%)		20(22.5%)	89
Migrant Workers	2(18.2%)		2(18.2%)	11
Military Veterans	13(25.5%)		11(21.6%)	51
Homeless	15(31.9%)		7 (14.9%)	47
Persons with mental health issues	23(30.3%)		15 (19.7%)	76
Persons with substance abuse issues	21(35.6%)		10(16.9%)	59
Infants/children	18(33,3%)		10(18.5%)	54
Men	24 (23.5%)		21(20.6%)	102
Women	27(24.3%0		21 (18.9%)	111
Other	1 (10%)		5 (50%)	10

Note: N = 140, 2016. (Percentages are across but don't include all educational levels) Different populations multiple responses.

Chart 14 shows that 47 percent of CHWs work 36 hours or more. It is evident that paid CHWs work a substantial number of hours.

Chart 14: Average Hours Paid Work



Note: N = 134, 2016.

Work Tasks, Responsibilities, and Agency Context

As noted previously, the CHWs included in this study came from several types of agencies: clinics, community-based organizations, health departments, public health agencies, mental health agencies, hospitals, health insurance companies, shelters, and faith-based organizations. The CHWs were asked which of several tasks were part of their normal workload. Most of the tasks were performed by CHWs from a variety of agencies; the research found that public health agencies were not significantly more likely to provide any of the services. It is worthy to highlight the central role clinics, mental health agencies, and health insurance companies play in many of the services rendered to the public.

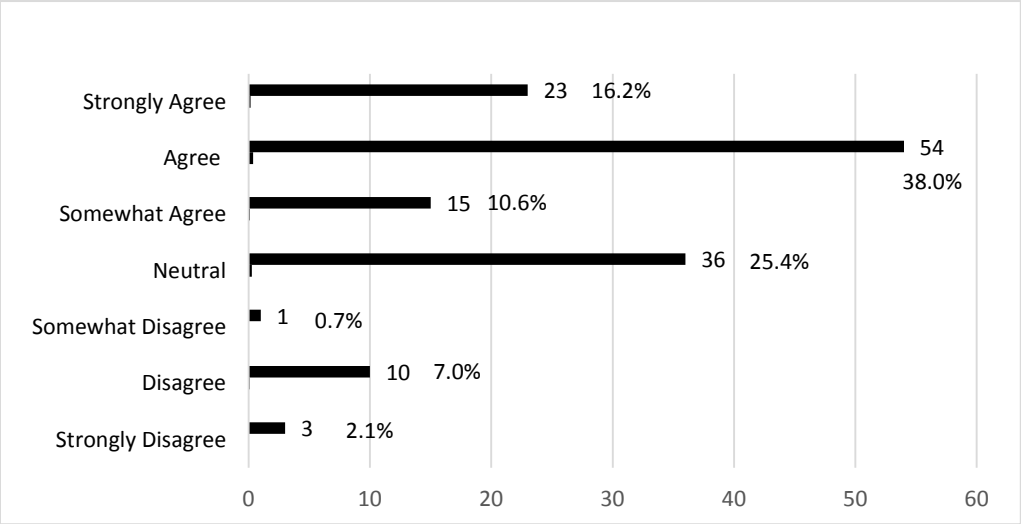
Health Outcomes

In the survey, CHWs were asked the degree to which they agreed with the statement, "Health outcomes have improved as a result of my work." On a scale of 1 (strongly disagree) to 7 (strongly agree), the average response was a 5.54. This health outcome item was significantly related to several variables, including: number of tasks performed, number of training sources, number of populations served, number of people served each month, the degree to which they believe opportunities to increase CHW use exists in their agency, salary, education, and hours worked. Since there was a great deal of overlap between these variables, the researchers determine the most important predictors of responses to the health outcomes item. There were three significant predictors of health outcomes: number of tasks performed, belief in increased opportunities to use CHWs, and the number of people served each month.

Opportunities to Increase the Use of CHWs

In response to the question on if there is a need to increase the use of CHWs, 16.2 percent of respondents strongly agreed, 38.03 percent agreed, and 10.56 percent somewhat agreed (See Chart 15).

Chart 15: Need to Increase the Use of CHWs

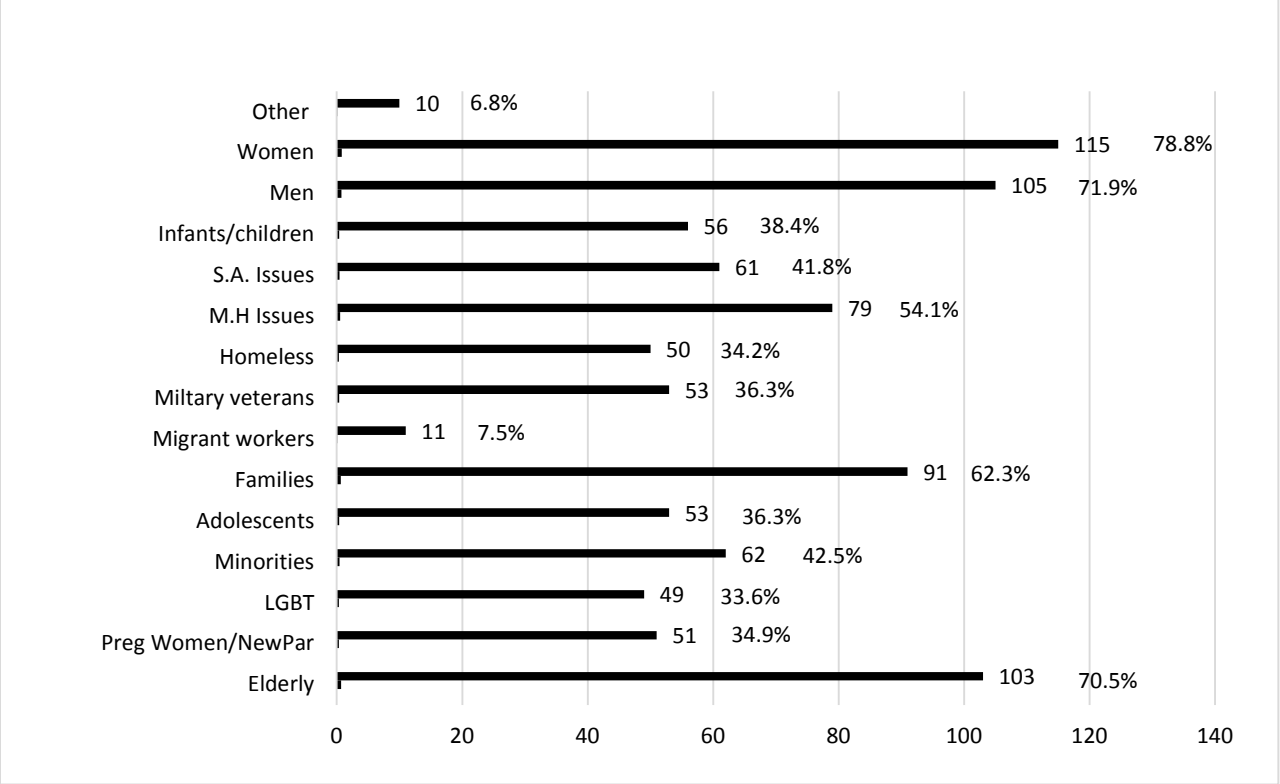


Note: N = 142, 2016.

Different Populations and Health or Mental Health Issues Served

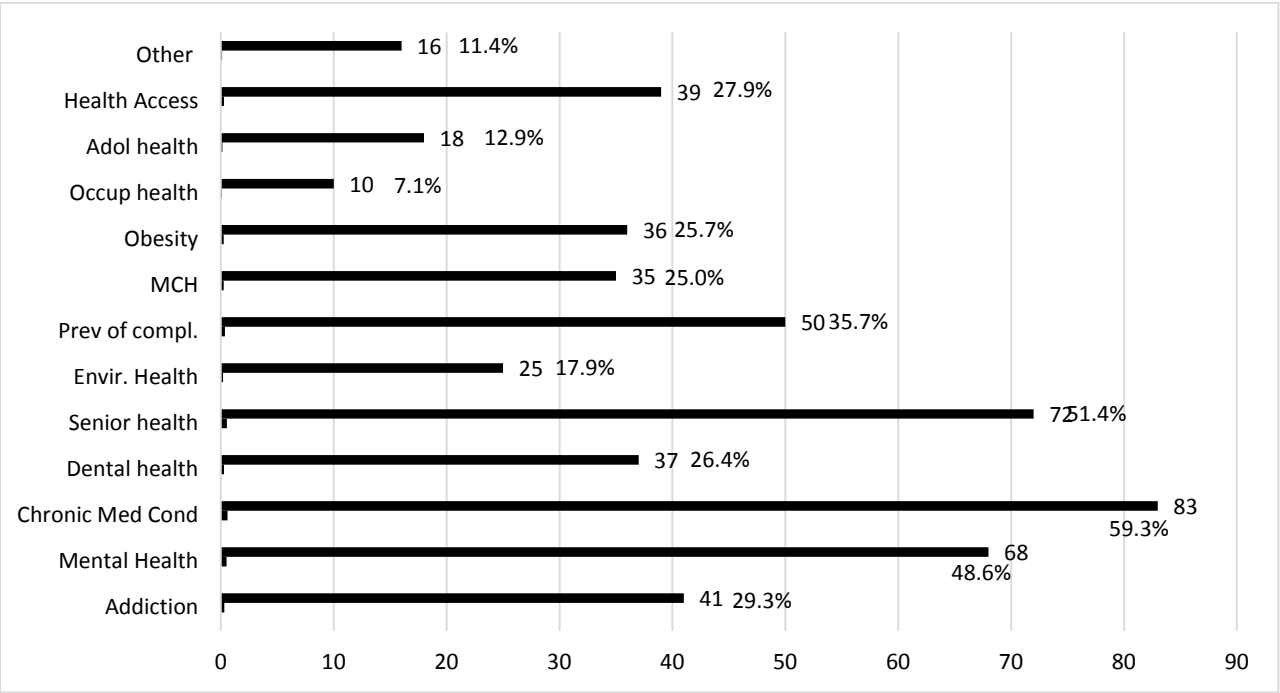
According to the CHW survey (Charts 16 and 17), there were many different populations and health or mental health issues served. The results showed that CHWs were not concentrating in one area but were working with many different populations. The populations were large for many different groups, and there were many different health and mental health issues addressed.

Chart 16: Populations Served



Note: N = 146, 2016 Multiple responses allowed.

Chart 17: Physical/Mental Health Issues Addressed

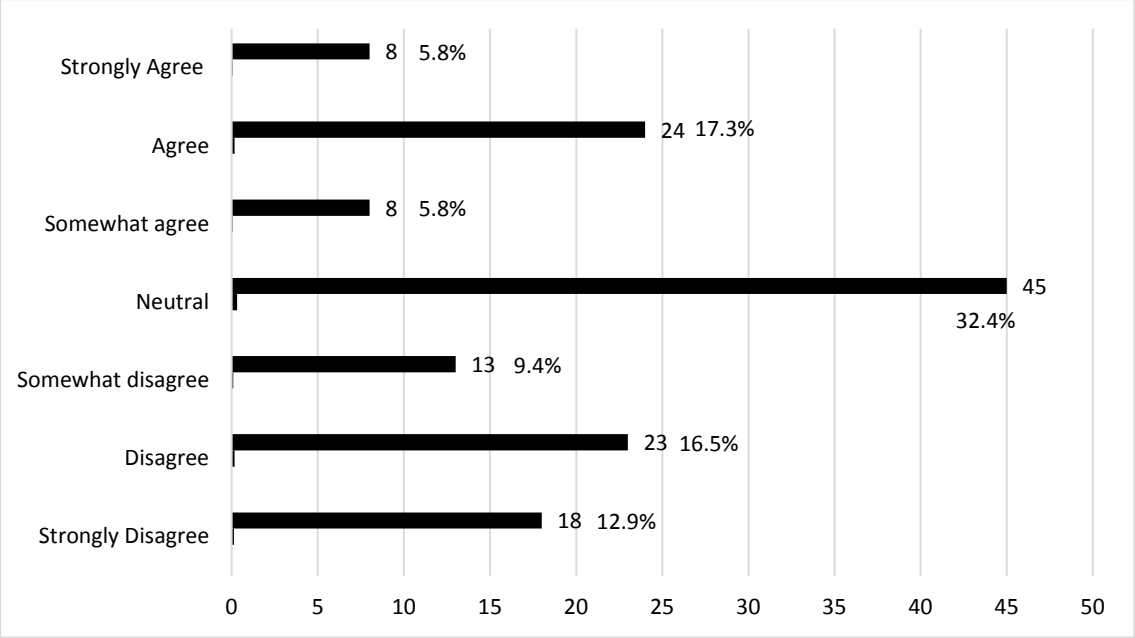


Note: N = 140, 2016. Multiple responses allowed.

Adequacy of Funding for CHWs

The survey results showed a variety of opinions about the adequacy of funding (Chart 18).

Chart 18: Adequate Funding of CHWs



Note: N = 139, 2016.

Relationship Among Variables in Study

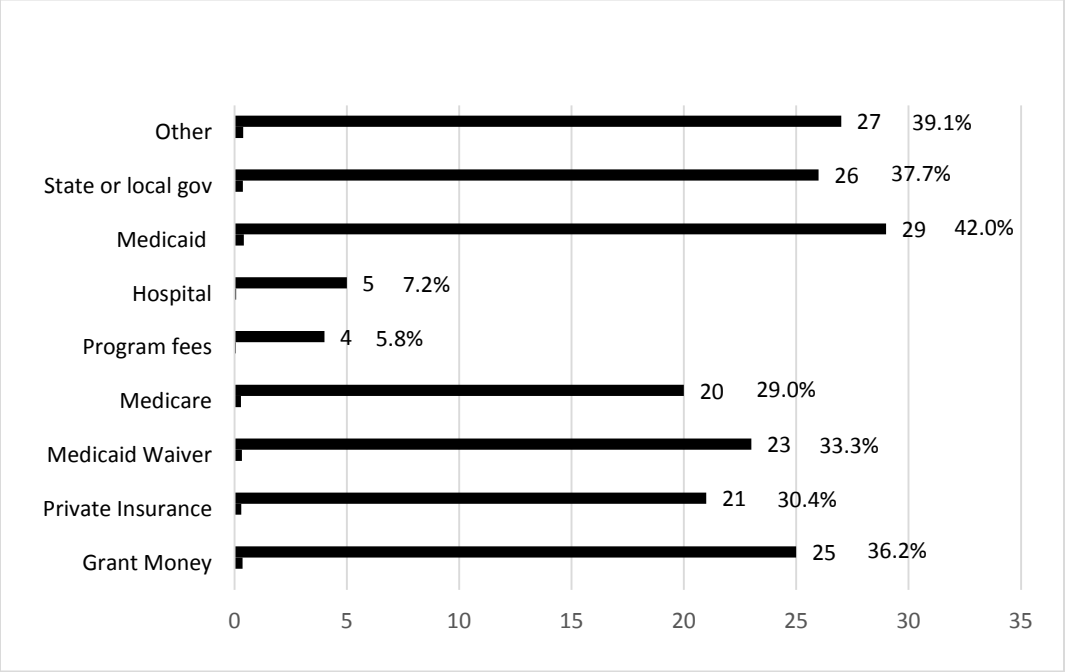
The research explored the relationships between 15 variables in the CHW survey. A moderate relation was noted between tasks performed and mental health/health issues and tasks performed and monthly caseload. In agencies, tasks performed by CHWs would have an effect on mental health/health issues of patients and monthly caseload. Annual income was related to tasks performed and monthly caseload. It should be noted that years worked and age did not seem to be strongly correlated with other major variables in the CHW survey. Being paid or volunteer was related to age. Hours worked was related to age.

CHW Supervisor/Administrative Survey

Funding Sources

Funding is an issue with CHWs. Chart 19 shows the diversity of funding for CHWs.

Chart 19: Type of Funding for CHWs



Note: N = 69, 2016. Multiple responses allowed.

Caseloads

Table 20 describes the CHW caseloads. On average, the respondents had about 21 paid CHWs and 16 volunteers. On average, the daily number of patients was about 61, with the average CHW caseload of about almost six per day.

Table 20: Number of CHWs and Caseloads

	Average
Paid workers in your organization (N=67)	20.88
Volunteers in your organization (N=30)	15.50
Average daily patients for all CHWs (N=67)	61.04
Average daily caseload (N=68)	5.73

Key Activities

In the CHW supervisor/administrator survey, the participants identified activities as "core," "secondary," or "not a function." Patient advocate, social support, and health education were rated as the top core activities for CHWs according to the supervisor/administrator respondents (Table 21).

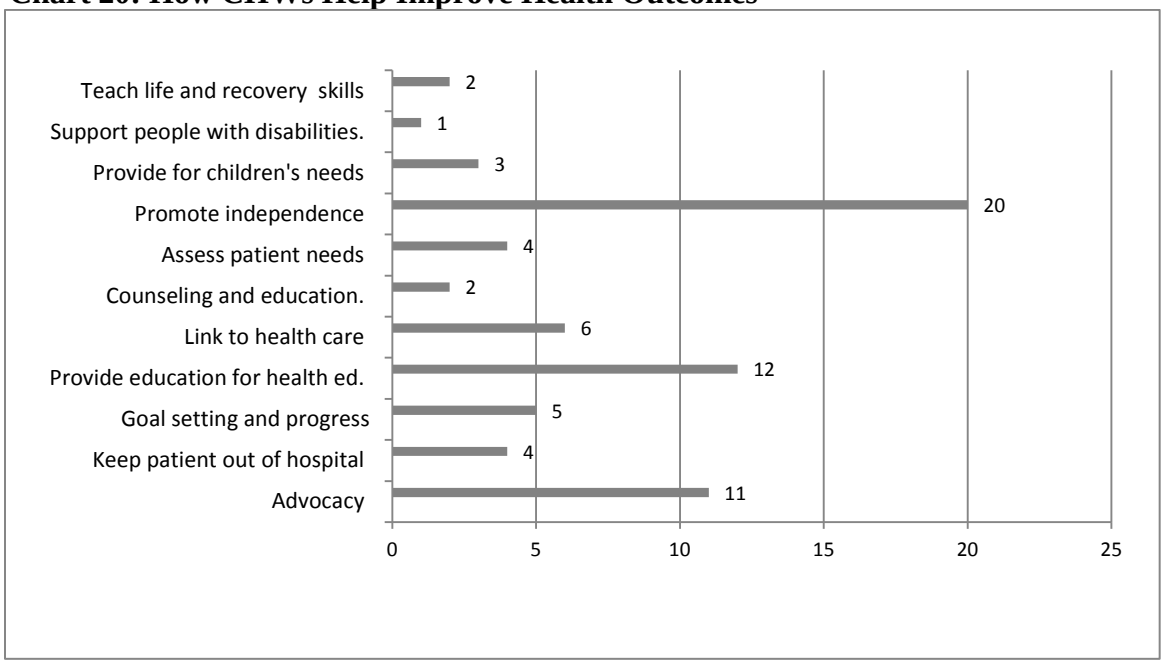
Table 21: Supervisor/Administrator Rating of Activities of CHW as Core, Secondary, or Not a Function in Agency

Level of Activity for CHW	Core	Secondary	Not a Function	Sum of Responses
Outreach	27(44.3%)	27(44.3%)	7(11.5%)	61
Patient advocate	48(67.6%)	12(16.9%)	11(15.5%)	61
Social support such as home visits	45(75.0%)	4(6.7%)	11(18.3%)	60
Counseling	21(33.9%)	15(24.2%)	26(41.9%)	62
Transportation	13(22.0%)	20(33.9%)	26(44.1%)	59
Health education	40(66.7%)	15(25.0%)	5(8.3%)	60
Patient compliance	29(48.3%)	23(38.3%	8(13.3%	60
Risk assessment leading to referral	27(45.0%)	18(30.0%)	15(25.0%)	60
Cultural competence training	10(17.2%)	22(37.9%)	26(44.8%)	58
Language interpretation or translation	3(5.0%)	17(28.3%)	40(66.7%)	60
Other link to community resources	1			1
Other personal care, assistance with ADL's	1			1
Other education	1			1
Other bathing personal care	1			1

Note: N= 66, 2016. Some respondents did not rate all activities. Those partially answered were not used.

Based on the supervisor/administrator survey, there are a variety of health outcomes that are improved as a result of the work of CHWs (See Chart 20). Promoting independence, providing health education, and advocating for patients are the top health outcomes improvements for patients receiving care from CHWs.

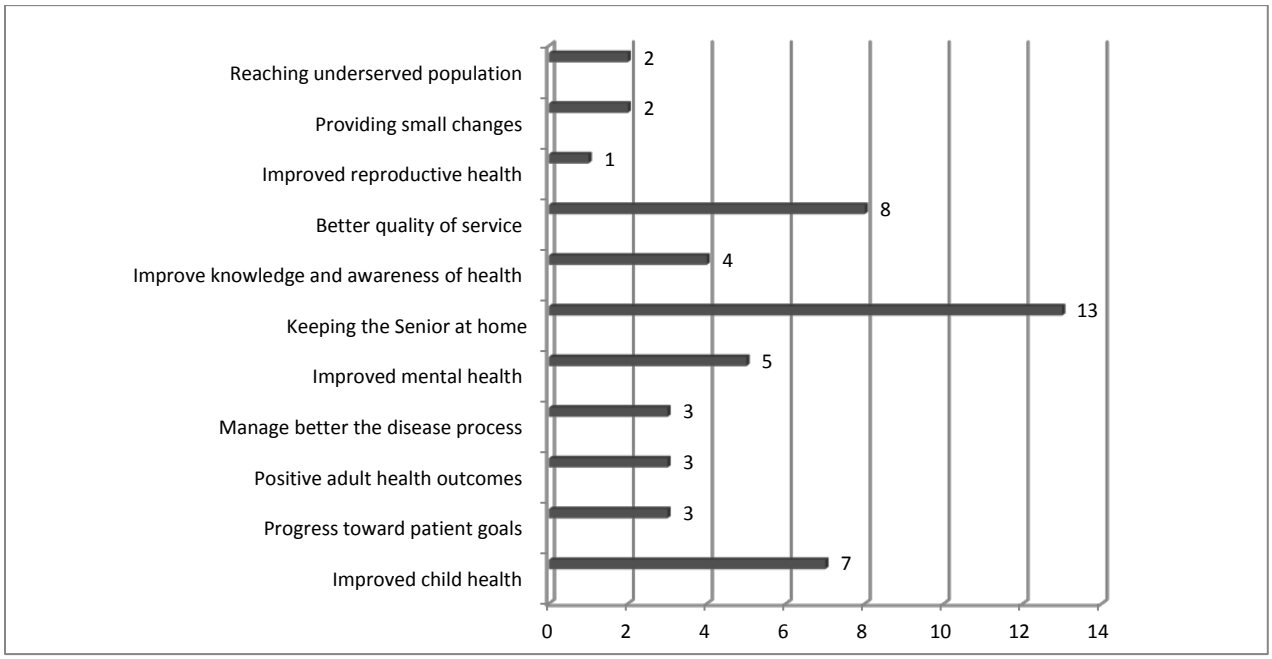
Chart 20: How CHWs Help Improve Health Outcomes



Note: N = 60, 2016. Multiple responses allowed.

Chart 21 shows the outcomes of using CHWs. Improved health, better quality of service, and keeping seniors at home were the most frequently chosen outcomes.

Chart 21: Patient Outcomes

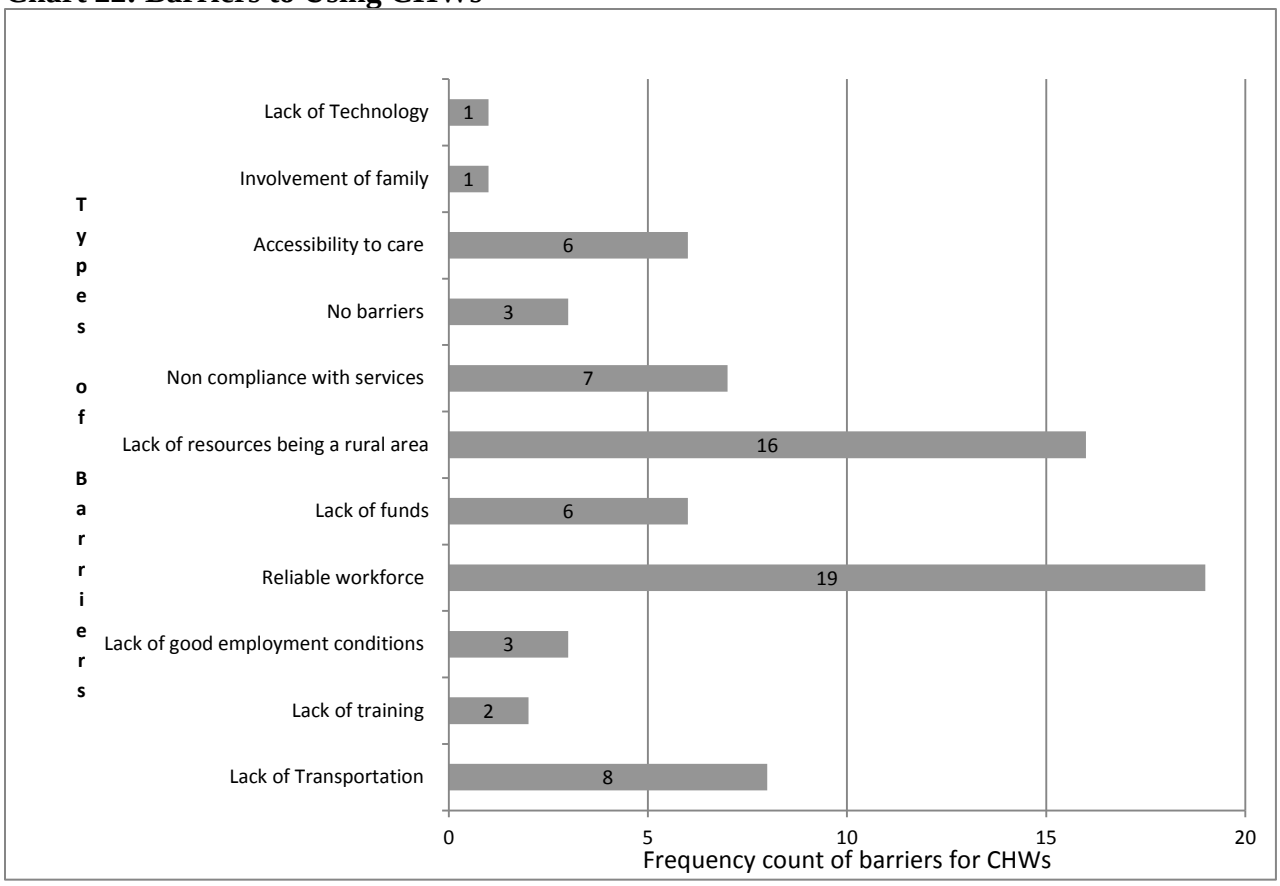


Note: N = 58, 2016. Multiple responses allowed.

Barriers to Using CHWs

A reliable workforce, lack of resources in a rural area, and lack of transportation are the top three barriers to using CHWs (See Chart 22). In rural areas, there are numerous barriers to delivering services; CHWs have to deal with these difficulties.

Chart 22: Barriers to Using CHWs

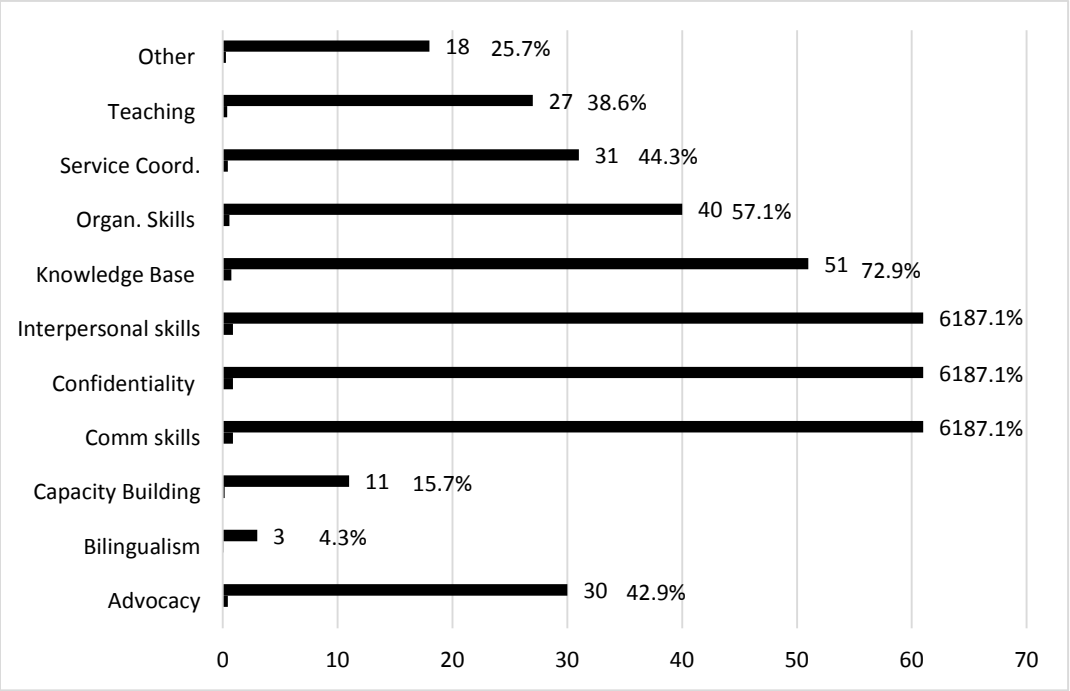


Note: N = 62, 2016. Multiple responses allowed.

Skills Needed for CHW Jobs

Chart 23 shows the various skills needed for a CHW job. Organizational skills, knowledge base, interpersonal skills, confidentiality, and communication skills are the most important jobs skills identified by supervisor/administrators of CHWs.

Chart 23: Skills Needed for CHW Job

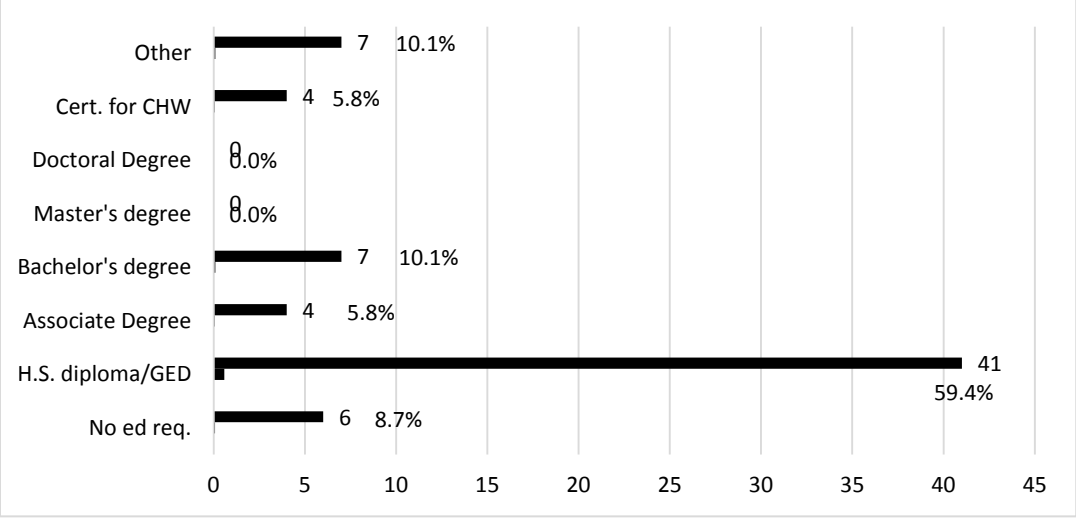


Note: N = 70, 2016. Multiple responses allowed.

Minimum Level of Education for CHW Positions

Chart 24 shows that about 60 percent of respondents felt that a high school diploma/GED was a minimum requisite for a CHW position.

Chart 24: Minimum Educational Requirements



Note: N = 69, 2016.

Skills Desired for CHWs Depending on Agency Type

The survey of CHW supervisors/administrators yielded good insight into the types of skills supervisors look for when hiring paid and volunteer staff. Six agency types were used to classify the agencies from which participating supervisors came: schools/daycares, inpatient facilities, home health care, community health center, social service, and mental health. The research survey assessed 10 skills: advocacy, bilingualism, capacity building, communication, confidentiality, interpersonal skills, knowledge base, organization, service coordination, and teaching. Supervisors indicated whether or not each skill was important to them when filling a position. The results indicated that only the skills of bilingualism, capacity building, and service coordination were found to be significant depending on the agency type.

The researchers also asked supervisors to note if several activities were either "Core," "Secondary," or "Not a function performed" by their CHWs. The survey assessed 10 activities: outreach education, patient advocacy, social support, counseling, transportation, health education, patient compliance, risk assessment and referral, cultural competence, and bilingualism. Only outreach education and patient compliance demonstrated significant differences in distributions across agency types.

Conclusions

The results of the focus groups, leadership interviews and surveys helped to provide a better understanding of CHWs in Pennsylvania. The qualitative results showed the diversity of perceptions about CHWs, in terms of their job roles and responsibilities, and the diversity of settings in which they work. Job roles include caring and trust, obtaining resources, such as housing or transportation, medical advocacy, basic medical screening, mental health education and health education, and custodial care. Settings included clinics, community-based

organizations, health departments, public health agencies, mental health agencies, hospitals, health insurance companies, shelters and faith-based organizations.

Effective delivery models are reported to be goal oriented and use a workflow model. Other effective delivery models include caring for patients, coordinating care, utilizing a peer specialist model, and working with a certification process. Participants believe that both volunteer and paid CHWs provide effective service delivery, yet barriers to effective delivery exist. Barriers to the use of CHWs in health settings include the lack of funding/reimbursement for services, transportation, worker burn out, and lack of understanding of the CHW role. Other barriers to success include turnover of CHWs, transportation issues, training and certification, integration into the health system, and funding.

In the effective delivery of care, CHWs are reported to promote positive health outcomes for those living in rural Pennsylvania. Health outcomes included disease management, recovery at the patient's own pace, keeping patients safe at home, a focus on wellness, and increased sense of self-worth. For one hospital, readmissions decreased 15 percent due to the work of CHWs. Another hospital reported that reducing readmissions solidified the use of outpatient clinics in the community. Health problems included obesity, diabetes, mental health problems, and heart disease. At home care agencies, the major conditions for which CHWs provide care were congestive heart failure, diabetes, COPD, obesity, cancer, and developmental, cognitive and physical disabilities.

Education and training were important issues in focus groups, and there was disagreement over the need for certification for CHWs. There were a variety of training modalities and certifications based on the needs of the agencies and a need for increased use of CHWs. Very broad populations are being served by CHWs in the area of physical health and mental health. Whether the agency worked with physical health or mental health determined

whether there were issues with funding. Health agencies with CHWs did not have sustainable funding sources, while mental health agencies had adequate funding sources for their peer specialists.

The quantitative results led to similar conclusions as the qualitative results. Although the qualitative results discussed varieties of opinions about training, the survey of CHW workers shows the importance of training for CHW workers. This training can range from on-the-job training to actual certification in one's area of work. Experienced respondents more frequently reported attending training conferences than did less experienced respondents. Advocacy training was more prevalent in the preparation of those with more extensive experience than it was for those with less experience. Those without on-the-job training had significantly more years of service compared with those with on-the-job training. The qualitative results showed volunteer and paid CHWs were predominantly female, aged 48, with 9 years of experience. There are a variety of work titles used for CHWs, which equates with the numerous job roles and responsibilities noted in the qualitative research. Rural CHWs work in both rural and urban areas. The qualitative research showed funding as a possible barrier for CHWs, and the CHW survey found funding sources vary for CHWs, depending on the agency type.

The CHW survey findings revealed that there were a significant number of volunteers. The majority of volunteers worked in hospitals, faith-based organizations and community-based organizations.

Among paid CHWs, higher-salaried individuals were more likely to engage in such tasks as providing health education, making referrals, providing clinical services, conducting health fairs, collaborating with agencies, providing peer education, providing counseling, documenting health records electronically, performing administrative work, providing follow up on referrals,

and identifying resources. There was a greater likelihood of lower-salaried individuals performing tasks such as providing transportation and accompanying clients to appointments.

Volunteer caseloads were typically small, while paid CHW caseloads were typically larger. This may point to the burnout noted by the qualitative results. For caseloads and training, the research found that CHW workers with small caseloads had significant training in the areas of conference attendance, certification, on-the-job training, and shadowing. For CHWs with large caseloads, significant areas of training were on- the-job training, conference training, certification training, shadowing, and college. Community- based agencies, public health agencies, hospitals, and faith-based agencies have substantial numbers of volunteer CHWs. The highest educational level has limited impact on employment status; this is consistent with the altruism fostered by the field, such that those once employed often seek later volunteer opportunities. Across all populations served, there was significant use of CHWs with higher education.

It is worthy to highlight the central role clinics, mental health agencies, and health insurance companies play in many of the services rendered to the public by CHWs. In the qualitative study, it was noted there were numerous successful health outcomes. For the CHW survey, there were three significant predictors of health outcomes: number of tasks performed, belief in increased opportunities to use CHWs, and the number of people served each month. A majority of CHWs felt that there was a need to increase the number of CHWs for the future, which corresponded to the finding in the qualitative research that there was increased opportunity for CHWs. There were different populations served and various health and physical problems managed by CHWs, which was similar to the qualitative findings. In the area of CHW opinion on adequacy of funding, there was a balance of opinion between adequacy and lack of funding.

The supervisor/administrative survey results showed varied funding for CHWs and saw patient advocacy, social support, and health education as important functions for CHWs. There were many different types of funding among different organizations for CHWs. It was not possible to determine a definite pattern of funding for different organizations. For mental health and substance abuse, there was an emphasis on Medicaid and state and local government funding as support. Day care was funded by grants and private insurance. The data did not show a predominance of grant funding but a multiplicity of funding sources; grant funding was also mentioned as being important in the qualitative results.

Patient advocacy, social support, and health education were the top core activities reported in the supervisor/administrative surveys. These core activities were also mentioned in the qualitative results. There were many positive outcomes from using CHWs, including health, quality of service, and independence for seniors, which were also discussed in the qualitative results. Primary barriers for CHWs were a lack of resources, transportation, and lack of a reliable workforce; a lack of resources and transportation issues were also noted in the qualitative results. Supervisors/administrators identified organizational skills, knowledge base, interpersonal skills, confidentiality, and communication skills as the most important skills for CHWs. The majority of supervisors/administrators saw a high school education as the minimum level of education necessary for a CHW. Only the skills of bilingualism, capacity building, and service coordination were found to be significant, depending on the agency type. Only outreach education and patient compliance demonstrated significant differences in distributions across agency types. Overall, the findings from the focus groups and interviews supported the results found in the surveys.

Policy Implications

Survey participants, leadership interviewees, and focus group members agreed that there are many opportunities to increase the use of CHWs in Pennsylvania. Currently, however, funding is an issue, since there is no Medicaid waiver for health-related CHW services. This seriously limits the opportunity to expand the use of CHWs.

Possible solutions to the funding issue (which would require approval of the state and federal governments) include:

1. Using Medical Assistance money to pay for CHWs conducting outreach and Medicaid enrollment.
2. Expanding the Medicaid Fee for Service to allow CHWs to assist people with accessing care and providing follow-up for medication, diet requirements, and other aspects of care.
3. Providing Medicaid and Medicaid Managed Care to community health centers to provide education, follow-up, and coordination of services using CHWs.
4. Providing Medicaid waivers for CHW services. This would involve using the 1115 waiver clause in the Medicaid plan. A Medicaid waiver in the Affordable Health Care Act allows state health systems to use funds for creative and innovative purposes, such as funding CHWs.

If Pennsylvania is going to expand the use CHWs, it should support research that determines the cost savings of using CHWs, patient health outcomes, improvement in quality of care, and reduction in health disparities.

Also, disease-specific studies should be conducted to determine where CHWs are most effective. Pilot programs can be funded by Pennsylvania to determine the effectiveness of CHW interventions in rural communities. At the Penn Center for Community Health Workers in

Philadelphia, community researchers found community health workers participating in a pilot project to be very effective in saving money for the Penn Medicine system. For every dollar invested in CHWs, there was a $1.80 return (Morgan, Grande, Carter, Long, & Kangovi, 2016).

A policy decision that needs to be made is whether CHWs will be certified in Pennsylvania. The decision on certification and training needs to be made by the state legislature and the state Departments of Health and Human Services. The Pennsylvania Community Health Task Force (2016) identified two paths to certification: a work experience track (phased out after 5 years) and a training and work experience track in which accredited training and work experience would be required (Ferguson, 2016). The certification board would establish work requirements and training standards for accredited CHW training programs. It would consist of a public-private partnership and would be staffed by state agency staff and CHW stakeholders. State legislation would be needed to authorize the certification board.

In 2016, the Pennsylvania Statewide Community Health Worker Training Subcommittee established a Pennsylvania Core Competency List in the following areas: “community and interpersonal skills; cultural competency; health literacy; health education; care coordination; and advocacy and community capacity building.” Core certification would result in the need for legislation to certify CHWs and create standards for a board and standards for CHW certification. If CHWs become certified, a policy decision would need to be made as to whether there will be state-regulated training and certification requirements for CHWs.

Another policy decision is needed to determine the type of training needed for CHWs, which varies from state to state (Community Health Workers and Finance, 2011). It is important to establish the core competencies for CHWs in Pennsylvania. The policy issue is whether training will made available to CHWs in less-accessible, underserved rural communities. This

was a concern for several respondents in the leadership interviews. If one is going to consider that CHWs need certain competencies, then this calls for training in these areas.

In rural areas, it is difficult to fund CHW programs due to the lack of health resources and financial resources. One option may be to create a consortium that could obtain federal funds to initiate CHW programs in rural areas.

Pennsylvania may also consider collaborating with colleges and universities to develop CHW programs in rural areas. In Kentucky, for example, the Kentucky Homeplace is a state-funded project through the University of Kentucky's Center for Excellence in Rural Health. It provides CHW services to 30 rural counties in Eastern Kentucky designated as being medically underserved (Kentucky Homeplace, 2016). CHWs in Kentucky provide services to medically vulnerable populations and help them access services, provide health education, and manage chronic diseases. These CHWs are chosen from rural communities in eastern Kentucky.

Project Hoffnung in Ohio is another community-based project in a rural area that assists Amish and Mennonite women in preventing breast cancer; this is another example of a program of a broad scope to address underserved people in a state (Project Hoffnung, 2016).

These examples may help Pennsylvania to determine how it may expand the use of CHWs, who have been shown to play an important role in the delivery of health services to rural and underserved populations.

References

Alaro-Trujillo, B., Valles-Medina, A. M. & Vargas-Ojeda, A. C. (2012). Profiles, perceptions and motivations of community health workers of NGO's in a border city of U.S.-Mexico. *Journal of Community Health, 37,* 583-590.

ASTHO's Community Health Worker Call Series (2016) Certification and Licensure. http://www.astho.org/Community-Health-Workers/Call-Series/Certification-and-Licensure-Slides/

ASTHO (2016) Community Health Worker (CHW) Training and Certification Standards http://www.astho.org/Public-Policy/Public-Health-Law/Scope-of-Practice/CHW-Certification-Standards-Map/

Bodenheimer T., Chen E., & Bennetth H.D. (2009) Confronting the growing burden of chronic disease: Can the U.S. health care workforce do the job? *Health Aff. 28* (1) 64-74.

Bovbjerg, R. B., Eyster, L., Ormond, B.A., Anderson, T., & Richardson, E. (2013). Opportunities for Community Health Workers in the Era of Health Reform http://www.urban.org/sites/default/files/alfresco/publication-pdfs/413071-Opportunities-for-Community-Health-Workers-in-the-Era-of-Health-Reform.PDF.

Bureau of Labor Statistics. (2014). Occupational employment statistics. Retrieved from http://www.bls.gov/oes/current/oes211094.htm.

Carney, T. (2016) Powerpoint for Community Care: Behavioral Health Organization Certified Peer Specialist in Pennsylvania. http://www.ccbh.com/pdfs/articles/conferences/10062016_certified-peer-specialists.pdf.

Center for Disease Control and Prevention (2014) States Implementing Community Health Workers Strategies: Technical Assistance Guide. https://www.cdc.gov/dhdsp/programs/spha/docs/1305_ta_guide_chws.pdf.

Columbia University Mailman School of Public Health. (2010). The New York State Community Health Worker Initiative. http://nyshealthfoundation.org/uploads/resources/new-york-community-health-worker-initiative-september-2010.pdf.

Community Health Workforce Study (2007) Health Resources and Services Administration. Retrieved from http://bhw.hrsa.gov/healthworkforce/reports/chwstudy2007.pdf

Commonwealth of Massachusetts and Human Services (2016). Community Health Worker Certification. Retrieved from http://www.mass.gov/eohhs/gov/departments/dph/programs/hcq/dhpl/community-health - workers/about/about-the-board.html.

Community Health Workers Financing and Administration (2011). National Health Care for the Homeless Council http://www.nhchc.org/wp-content/uploads/2011/10/CHW-Policy-Brief.pdf

Department of State Health Services and Health and Human Services Commission (2012). Texas Community Health Worker Study Report to the State Legislature file:///C:/Users/Steven/Downloads/Community_Health_Worker_Study_Report_Final.pdf.

DeVoe, J., Baez, A., Anger, H., Krois, L., Edlund, C. & Carney, P.A. (2007). Insurance plus access does not equal health care: Typology of barriers to health care access for low-income families. *Annuals of Family Medicine,* 5(6), 511-518.

Enard, K. R. & Ganelin, D. M. (2013). Reducing preventable emergency department utilization and costs by using community health workers as patient navigators. *Journal of Healthcare Management, 58*(6), 412-427.

Ferguson, Robert (2016). Pennsylvania Community Health Worker Policy Task Force. (obtained at CHW Forum November 17, 2016).

General Assembly of the Commonwealth of Pennsylvania, Joint State Government Commission (2015). The Pennsylvania physician shortage. Retrieved from http:///jsg.legis.state.pa.us/resources/documents/ftp/publications/2015-411.

Goodwin, K. & Tobler, L. (2008). Community health worker: Expanding the scope of the health care delivery system. *National Conference of State Legislatures.*

Johnson, D., Saavedra, P., Sun, E., Stageman, A., Grovet, D., Alfero, C., Maynes, C., Skipper, B. Powell, W., & Kaufman, A. (2012). Community health workers and Medicaid managed care in New Mexico. *Journal of Community Health, 37*(3), 563-571.

Kentucky Homeplace (2016). Center for Excellence in Rural Health. Retrieved from https://ruralhealth.med.uky.edu/cerh-homeplace.

Kangovi, S, Grande, D., and Trinh-Shevrin (2015). From rhetoric to reality-community health workers in post-reform U.S. health care. *New England Journal of Medicine 372,* 2277-2279.

Lehmann, U., & Sanders, D. (2007). Community health workers: What do we know about them? World Health Organization.

Lopez, P. (2015) Development of Nebraska's Community Health Worker Workforce. Retrieved from http://publichealthne.org/wp-content/uploads/2015/04/CHWPolicyPaper3-30-15editsPat.pdf.

Malcarney M., Pittman P., Quigley L., Horton, K., & Seiler, N. (2017) The changing roles of Community Health Workers. *Health Services Research,* 52, 360-382.

Maryland Department of Health and Mental Hygiene and Maryland Insurance Administration (2015). Workgroup on Workforce Development for Community Health Workers http://insurance.maryland.gov/Documents/newscenter/legislativeinformation/workgroup-on-workforce-development-for-community-health-workers-dhmh-and-mia-june-2015.pdf

Massachusetts Department of Health (2005) Community Health Workers: Essential to Improving Health in Massachusetts: Findings from the Massachusetts Community Health Worker Survey.

Medicaid-Funded Peer Support Services in Pennsylvania Frequently Asked Questions (2015). Retrieved from http://164.156.7.185/parecovery/documents/PSS_FAQ_093015.pdf

Michigan Department of Community Health. (2011). Community Health Care Worker Survey. Retrieved from https://www.michigan.gov/documents/mdch/MDCH_Community_Health_Worker_Survey_Report_373681_7.pdf

Morgan, A.U., Grande, D.T., Carter, T., Long, J.A. & Kangovi, S., (2016). Penn Center for Community Health Workers: Step-by-step approach to sustain an evidence-based community health worker intervention at an academic medical center. *AJPH, 106* (11) 1958-1960.

National Association of Community Health Centers (2015). State Policies and Strategies that Impact Community Health Workers at Health Centers.

National Health Care for the Homeless Council (2011). Community Health Workers: Financing and Administration.

New Mexico Department of Health (2017) Frequently Asked Questions about Community Worker Certification. https://nmhealth.org/publication/view/help/1764/.

Oregon Health Authority (2017) Traditional Health Worker Certification: FAQ https://services.oregon.gov/oha/oei/Documents/Traditional%20Health%20Worker%20Certification%20FAQ%20Page.pdf.

Pennsylvania Area Health Education Center East Central Region (2017). Pennsylvania Community Health Worker Steering, Policy, Finance, and Employer Steering Committees, ecpaachec.org/PATaskForceGroupsWorkGroups.htm.

Pennsylvania Community Health Worker Policy Task Force (2016). Proposals for Certification in Pennsylvania. (Obtained at CHW Forum November 17, 2016).

Pennsylvania Department of Health (2014) Certification of CHWs Pros and Cons. http://sitefinity.livehealthypa.com/docs/default-source/default-document-library/pa-chw-certification-pros-and-cons.pdf?sfvrsn=2.

Pennsylvania Statewide Community Health Worker Training Subcommittee (2016). Pennsylvania CHW Core Competency List. (obtained at CHW Forum November 17, 2016).

Pittman, M., Sunderland, A., Broderick, A., & Barnett, K. (2015). Bringing Community Health Workers into the Mainstream of U.S. Health Care. Institute of Medicine.

Project Hoffnung (2016). Retrieved from http://www.appalcare.org/.

Snyder, J.E. (2016) Community Health Workers: Roles and Opportunities in Health Care Delivery System Reform. Department of Health and Human Services. http://aspe.hhs.gov.

Snyder, L. (2013) Environmental Scan of Community Health Workers (CHWs) in Pennsylvania. Final report to: The Pennsylvania Department of Health Bureau of Health Promotion and Risk Reduction, Division of Cancer Prevention and Control. Prepared by The Alliance of Pennsylvania Councils, Inc.

Stockton, H. (2015). Certification for community health workers considered. *Citizen Voice.* Retrieved from http://citizensvoice.com/news/certification-for-community-health-workers-considered-1.1870870.

UHCAN Report (2015) Community Health Workers: At the Heart of Transforming Ohio's Health Care Delivery System 1-28. Retrieved from: http://uhcanohio.org/sites/default/files/UHCAN%20Report%202015-Final_web.pdf.

U.S. A. I. D. (2015). Factors Impacting the Effectiveness of Community Health Worker Behavior Change: A Literature Review. http://healthcommcapacity.org/wp-content/uploads/2015/06/Barriers-to-CHW-Svc-Provision-Lit-Review-June2015.pdf.

U.S. Department of Health and Human Services, Human Resources and Services Administration. (2007) Community Health Worker National Workforce Study. https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/communityhealthworkforce.pdf

Well Share International (2014). Summary of Results from a Statewide Survey of CHWs in Minnesota. Retrieved from http://www.epi.umn.edu/mch/wp-content/uploads/2015/11/PerspectivesOnTheCHWWorkforce_Summary_Wellshare_Sept2015.pdf.

Wilder Research. (2012). Community Health Workers in the Midwest: Understanding and Developing the Workforce (2012). Wilder Research Retrieved from https://www.wilder.org/Wilder-Research/Publications/Studies/Community%20Health%20Workers%20in%20the%20Midwest/Community%20Health%20Workers%20in%20the%20Midwest%20-%20Understanding%20and%20Developing%20the%20Workforce,%20Summary.pdf.

Zuckerman, M. & Zuckerman E. (2014). National Community Health Worker Advocacy Survey. Retrieved from http://www.michwa.org/wp-content/uploads/2014-NCHWAS.pdf.

List of Appendices

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E. Significant Differences in Chi Square between type of agency and tasks in the community.

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G. Skills for CHW Tasks

H. Chi Square for activities

I. **Bivariate Relationships**

J CHW Worker Survey

K CHW Supervisor/Administration Survey

L Frequency distributions for CHW Worker Survey

M Frequency distributions for CHW Supervisor/Administration Survey

Appendix A

General Themes from seven focus group interviews.

Roles and Responsibilities:

- FG1
  - Caring
  - Build ramps
  - Encourage healthy living
  - Anti-poverty work
  - Screenings
  - Care of homeless with MH issues
  - Pregnancy screenings/bloodwork
  - Gaining trust
  - Advocate for health ed. and community resources

- FG2
  - MH education
  - Transportation for MH patients
  - Patient advocate for medication compliance
- FG3
  - Education
  - Gain trust
  - Non-medical care to elderly/special needs
  - Help disabled maintain independence in community
  - Assist with ADLS- bill paying, appointments
  - Transportation to community activities
- FG4
  - Provide support
  - Assess for appropriate MH services for those released from prison
  - Advocate and assist with “stigmas”
  - Build trust
- FG5
  - Health education
  - Advocate
  - Family support
  - Liaison
  - Screenings (BP and general)
  - Custodial care (bathing etc.)

    - Basic assessments (skin etc.)
- FG6
    - Finding resources (housing, transportation)
    - Transportation connections
    - Assist with setting up appointments, ordering DME, making referrals to other agencies (Advocacy)
    - Health resource education visits
- FG7
    - Help find resources such as transportation
    - Make calls from home to make sure they take their medication.
    - As them how M.D. appointment went.

Frequency Count of Roles and Responsibilities Identified in 7 Focus Groups

Caring and Trust	**Obtaining Resources Such as Housing or Transportation**	**Medical Advocacy**	**Basic Medical Screenings**	**Mental Health and Health Education**	**Custodial Care**
3 Focus Groups	4 Focus Groups	6 Focus Groups	2 Focus Groups	4 Focus Groups	2 Focus Groups

Effective Delivery Models:

- FG1
    - Certification process, grant attainment, chance for advancement (career), burnout prevention
    - Population management- support from healthcare system, respect
- FG2
    - Peer specialist model- need funding for transportation (mileage and vehicle), documentation (time consuming and takes away from clients; helps process information)
- FG3
    - Referral and continuity is important
    - No support for the workers
- FG4
    - Goal driven (goals can change)
    - 1:1 or group
    - Peer specialist model (forensic)

- FG5
    - Skilled care by licensed agencies

    - Informal care- unskilled care role
    - Coordinate care (for those d/c from hospital to home)
- FG6
    - Workflow system (flow chart for care paths- 2 different ones) Evidenced-based
- FG7
    - Set up an algorithm system to help community workers know what to do.
    - Model is that we care about our patients.

Frequency Count of Effective Delivery Models Identified in 7 Focus Groups

Goal Oriented and Workflow model	**Care About Patients**	**Coordinate Care**	**Peer Specialist Model**	**Certification Process**
3 Focus Groups	1 Focus Group	2 Focus Groups	2 Focus Groups	1 Focus Group

Barriers:

- FG1
    - Lack of funding and support
    - Lack of future (grant funded)
    - Need for certification based on guidelines
- FG2
    - Health problems
    - Inability to afford medications
    - Health beliefs
    - Lack of support
    - Lack of funding
    - Paperwork (documentation)
- FG3
    - Work 30-32 hours/week
    - Single workers with child care issues
    - Transportation issues
    - (Lack of continuity of care) bouncing around from person to person
- FG4
    - Value of peer specialist not seen
    - Stigma of peer specialist
    - Burn-out
    - Transportation- use of own vehicle and no mileage reimbursement

- FG5
    - Lack of transportation
    - Lack of reimbursement
    - Distance/travel (some caregivers drive over 100 miles per day)
    - Lack of cell phone coverage and internet- inability to use telehealth
    - Weather
    - Terrain- mountainous
    - Department of Health regulations
    - Liability
- FG6
    - Transportation
    - Trust by clinics in what CHWs do and how they do it.
    - Lack of trust/nervous about allowing CHW into home
    - Lack of cell service
    - Feeling of threat by elderly
    - Lack of understanding of CHW role
- FG7
    - Transportation to patient houses is difficult
    - Families don't understand the role of Community Health Worker
    - Large case loads
    - Lack of reimbursement for transportation.
    - Lack of education and certification.

Frequency Count of Barriers Identified in 7 Focus Groups

Lack of Funding/Reimbursement For Services	**Transportation Issues**	**Worker Burn Out**	**Lack of Understanding of CHW role**	**Certification Process**
3 Focus Groups	2 Focus Groups	3 Focus Groups	2 Focus Groups	1 Focus Group

Health Outcomes:

- FG1
    - Obesity rates are measured each year
    - Focus on wellness
- FG2
    - Recovery is their own path
    - Hospitalizations
- FG3
    - Getting good

    - Provide care and make lives better
    - Provide better hygiene
    - Prevent hospital stays
- FG4
    - Increased sense of self-worth
    - Reaching milestones
    - Sense of community
    - Sustainability
- FG5
    - Keep safe at home
    - Make better health choices
    - Manage disease at home
    - Prevention of hospital readmissions and exacerbations
- FG6
    - Medication compliance and monitoring
    - Prevention of ER visits
    - Transportation to health appointments has helped to reduce ER visits
- FG7-
    - Coordinate meals
    - Coordinate M.D. appointments
    - Do medication reviews.
    - Help with food and shelter
    - Help with transportation

Frequency Count of Health Outcomes Identified in 7 Focus Groups

Disease Management	**Recovery at Own pace**	**Keep Safe at Home**	**Focus on Wellness**	**Increased Sense of Self Worth**
4 Focus Groups	2 Focus Group	1 Focus Group	1 Focus Group	1 Focus Group

Health Problems:

- FG1
    - Obesity
    - Depression
    - Family medicine
    - Diabetes
    - High BP
- FG2
    - Severe mental health disorders

- FG3
  - Elderly mental health
  - Dementia
  - Alzheimer's
  - Diabetes
  - COPD
  - Anorexia
  - Bipolar
  - Schizophrenia
  - CHS
- FG4
  - Obesity
  - Borderline personality disorder
  - diabetes
- FG5
  - Obesity
  - Heart failure
- FG6
  - Diabetes
  - Mental disabilities
- FG7
  - Heart disease
  - Diabetes
  - Obesity
  - Malnutrition
  - Mental health issues

Frequency Count of Health Problems Identified in 7 Focus Groups

Obesity	**Diabetes**	**Heart Disease**	**Mental Health Issues**	**Malnutrition**
4 Focus Groups	5 Focus Groups	2 Focus Groups	5 Focus Groups	1 Focus Group

Education/Training:

- FG1
  - None at present- feel that they should have certification
- FG2
  - Need firsthand experience

    - Need education/experience
- FG3
    - Training
- FG4
    - 1:1 Training
    - Would like to see advanced peer specialist
    - Training geared toward counseling
    - In-agency training
    - Mindfulness classes
    - Healthy training budget
    - Certification for mental health first aid
    - Wellness recovery action planning training
- FG5
    - Parish nurses are volunteer RNs or LPNs – Stevens Ministry Training
    - Certified Nurse's Aide
    - 12 hour in-house hospice training and monthly in-services
    - Certification may be a barrier- working up to 12 hours per day leaves little time and also lack of funding is an issue
    - Lack of availability online
- FG6
    - AS degree as medical assistant
    - Patient Navigator Certificate (18 credit program- Misericordia University)
    - BS degree in Psychology
    - Medical terminology course
    - AS degree in science
    - Certificate from Board of Dialysis (care tech)
    - BS in marketing
    - 20 years home health and now in certification training
    - Pharmacy tech
    - AS computer science
    - Background in human services
    - Experience in human services
    - MS Public Health
    - BS Social work
    - ASN
    - Hands-on training
- FG7
    - Provided with on-the-job training
    - Help if had degree or certificate

Frequency Count of Education/Training Identified in 7 Focus Groups

Very Varied backgrounds	Certification may be a barrier	Need First-hand Experience	Medical Training Needed
1 Focus Group	2 Focus Groups	2 Focus Groups	2 Focus Groups

Opportunities for increasing use of CHWs:

- FG1
  - Increasing the areas where support groups provided
  - Need community connections and less government connections
- FG2
  - Need sponsor training
- FG3
  - Increase pay
  - Increase CHW numbers to decrease stress of current workload
  - Need more qualified and trained CHWs
- FG4
  - Increase funding
  - Adolescent peer support
  - Make it more strict
  - Do not professionalize
- FG5
  - If funding available for more CHWs, they could take care of more patients (personal care)
  - If less regulations, they could do more monitoring and possibly more care, such as simple dressing changes.
- FG6
  - Increasing use in hospitals to inform about community resources
  - Education of community members to prevent crisis situations
  - More community outreach- behavioral health
  - Need more funding
  - Need better guidelines
  - Increase health plans that use CHWs
- FG7
  - Doctor's office and hospitals are the key.
  - Educate others about the resources.

Frequency Count of Increasing Opportunities Identified in 7 Focus Groups

Increased Funding and Pay for CHWs	Increased awareness for doctors and hospitals	More trained CHWs	Less professional and less regulated.
3 Focus Groups	2 Focus Groups	2 Focus Groups	2 Focus Groups

Appendix B

Leadership interviews

Leadership phone interviews

Agency	Number of Participants
Home Health	1
Home care	1
Hospital	4
WIC	1
Social Service Agency helping the elderly	2
Mental Health	6
Health Consultant	1
Volunteer advocacy group	3
Health system	1
Hospice	2
Head Start	1
Church	1
	Total= 24

There was a geographical distribution throughout the state of Pennsylvania in rural counties for leadership phone interviews.

Leadership phone interviews

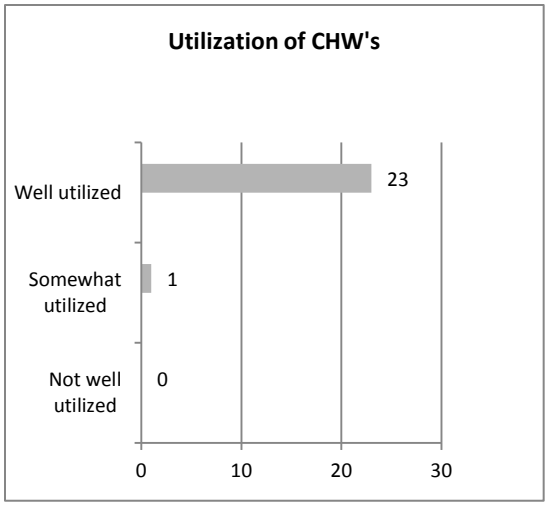
County	Participants
Columbia	1
Potter	3
Schuylkill	1
Monroe	1
Adams	3
Lycoming	2
Warren	1
Bradford	4
Centre	2
Juniata	2

Statewide	1
Clearfield	1
Clarion	1
Susquehanna	1
	Total= 24

There were 15 questions asked about community health workers..

Certification process and training.

Q: Tell me about your agency and how community health workers (CHWs) are utilized?



Total number of responses 24 participants, 2016.

In the leadership interviews there were two ends of the spectrum for CHWs: trained paid CHWs and volunteers. In a leadership interview at one agency, the participants stated that everyone is training to be a community health worker. CHWs would reconnect after a visit, find resources, visit homes where patients were chronically ill, and look after each person as an individual. In a number of leadership interviews, participants talked about the roles of peer specialists with mental health patients in the community.

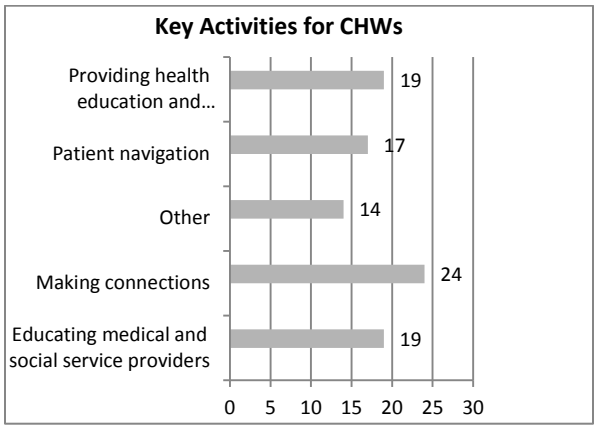
In a community, there is a nonprofit community partnership where volunteers collaborate. A hospice agency had a long-standing relationship with the community with over

100 volunteers; they were not interested in the professionalization of CHWs. A church ministry discussed the importance of volunteers in doing community health work.

Based on the coding of data and the participant responses, it was confirmed that community health workers who are employed and volunteer are effectively utilized. CHWs paid and volunteer were seen as crucial members of the health team.

Roles and responsibilities of CHWs

Q: At your agency what are the key activities for CHWs? (making connections, educating medical and social service providers, providing health education and information, leading support groups, basic screenings, health insurance enrollment assistance, patient navigation, care coordination)



Participants were coded for responding to all that apply. Total number of responses 24 participants, 2016.

Duties and responsibilities varied depending on the agency for CHWs. One mental health center reported that case management was a key activity. Another participant from a mental health center stated that peer specialists empower clients to recovery. In a hospice program, volunteers are the liaison in the community and run bereavement groups. At an agency, key activities are, “prioritizing needs/families, guiding families to community resources, providing

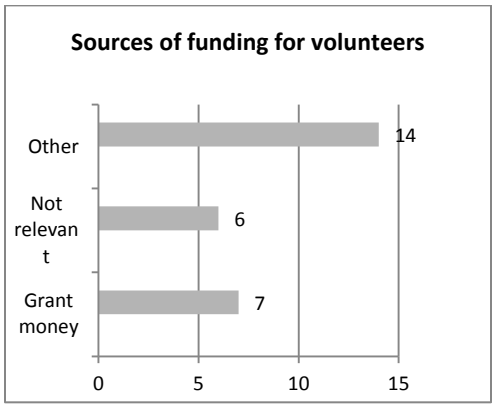
different levels of support, facilitating parent-child relationships, developing family partnership agreements, providing transportation if needed and education."

At a hospital, CHWs were health coaches in the community and EMTs assisted patients in the community when not actively delivering services.

Depending on the setting, CHWs provide a broad scope of community activities including patient navigation, connecting to services, providing BP screenings, offering health education, running health fairs, leading support groups, obtaining medical equipment, and identifying needs in patients.

Funding but not strong data---can eliminate

Q: At your agency what are the sources of funding or resources to obtain volunteers?



Participants were coded for responding to all that apply. Total number of responses 24 participants, 2016.

There were numerous sources of funding to pay for volunteers. One participant stated that grants can be very unstable because they may last for only two to three years.

Training and Certification.

Q: At your agency what are the training and certification needs for your CHWs?

Total number of responses 24 participants, 2016.

There were a variety of training and certification needs for the CHWs based on the agency. Some agencies felt that training needs were being met while others felt that there was a need for further training. In mental health agencies, participants felt that there could be added training for peer specialists. In some health agencies, participants stated that training was adequate for the job responsibilities.

Models of effective service delivery

Q: At your agency how do you deliver effective services with CHWs in rural areas of Pennsylvania?

One participant did not respond. Total number of responses 23 participants, 2016.

One participant felt that with so many volunteers, it was an issue to provide coordination to all of them. Another participant stated that being in a rural area makes delivery of services difficult. CHWs need to go to them (the community) to provide services that they can afford or [provide them] for free. In a volunteer setting, a participant stated that the recipients of services feel that services are provided in an effective manner. One participant stated that the management team looks at various things to help deliver effective services to the community. The agency has a small group of bilingual population (Hispanic), so they hire culturally sensitive staff to work with these individuals. The management team tries to understand the community and the families and their needs. Overall for volunteer and paid CHWs services were delivered in an effective manner.

Populations being served.

Q: At your agency what populations are being served by CHWs?

From the leadership interviews, there were numerous mental health and health problems reported as needing to be dealt with. One participant reported CHWs working with "the elderly, disabled, some with financial need, middle-aged or young people with disabilities, and a handful of pediatric patients with special needs. "At another agency, the populations served were children and infants to five years, pregnant women, non-breast-feeding mothers, and breast-feeding mothers. An agency participant stated that a broad population is being served in the whole community. The severely mentally ill comprised most of the population served at mental health agencies.

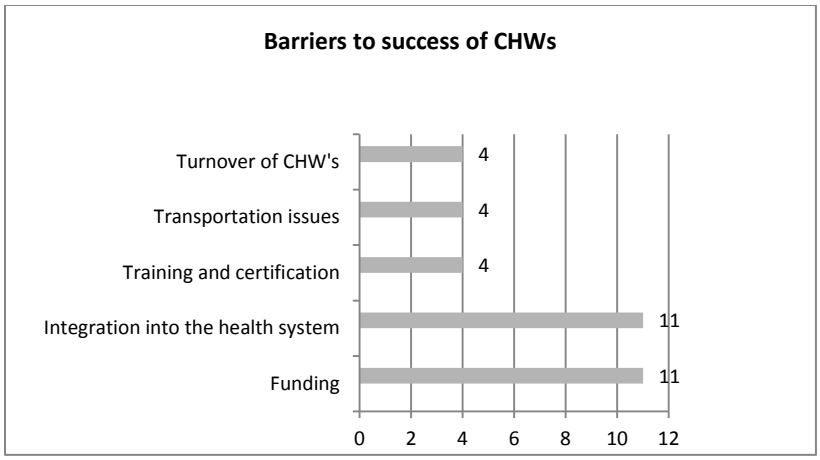
Health Issues being served.

Q: At your agency what health issues are being addressed by CHWs?

At home care agencies, the issues were CHF (congestive heart failure), diabetes, COPD (Chronic Obstructive Pulmonary Disease), obesity, cancer, and developmental, cognitive and physical disabilities. Another participant repeated various illnesses: CHF (congestive heart failure), Diabetes, COPD (Chronic Obstructive Pulmonary Disease)At a hospital, a participant reported "frequent flyers" to the ER and chronic illnesses. A faith-based participant stated that health issues vary.

Barriers to success

Q: At your agency what are the barriers to success of CHWs?—funding, training and certification, integration into the health system.

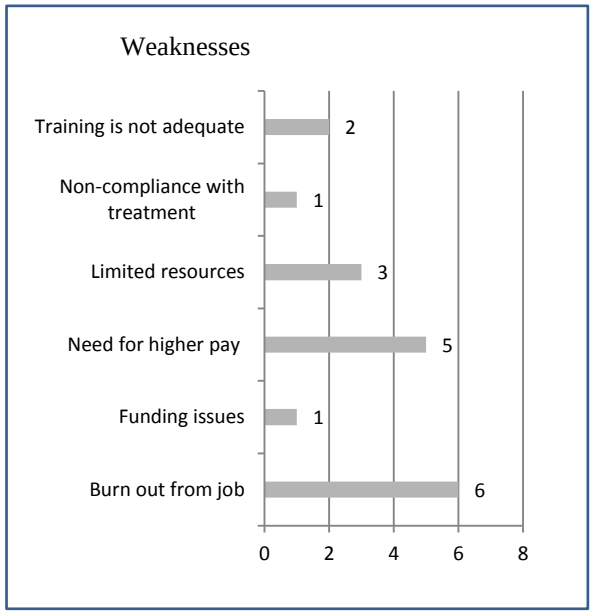


Participants were coded for responding to all that apply. Total number of responses 24 participants, 2016.

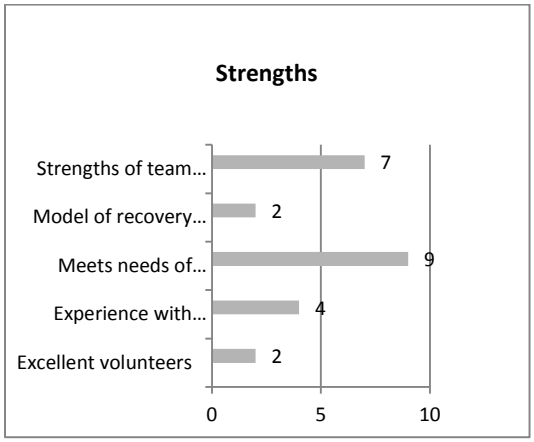
In a hospice setting, a barrier to success can be communication. Salary and work conditions are a problem. It takes a special person day in and day out. There are some workers that are in their 60s and 70s.Barriers to success are the patients participating, because they frequently work 10 hours a day and are overwhelmed. They also frequently don't understand the importance of health issues. In a hospital setting, barriers to success were burnout of workers and funding. At a mental health setting, barriers to success were consumer engagement/ frustrating population; clients that don't want to make changes in their lives; transportation; lack of coordination among other community providers; and limited ability to network due to patient confidentiality.

Strengths and weaknesses

Q: At your agency what do you see as the strengths and weaknesses of utilizing CHWs in your organization?



Participants were coded for responding to all that apply. 24 participants



Participants were coded for responding to all that apply. Total number of responses 24 participants, 2016.

Strengths:

One participant stated, “Well, I think the strength of our community healthcare workers is that they are willing to do whatever it takes to provide services to those in our community.” Another participant stated, “I believe individuals with mental health issues can and do recover; we instill hope in them to help reach their goals. A participant found the CHWs to be

compassionate and sympathetic, dedicated, and having strong faith. Effective delivery of service was a theme among many participants. A strength was reaching out to minority groups such as Latinos.

Weaknesses:

A participant stated in referring to a weakness: “Staff retention – We can’t pay what they’re worth. There’s no financial incentive to stay.” There are limited resources to help patients. Some of the counties are vast, and this can be a barrier to providing services. It is very difficult sometimes to be able to communicate with and have patients accept the services of CHWs.

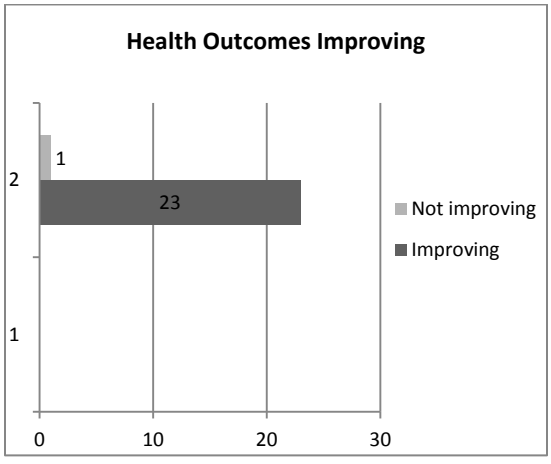
Other Factors

Q: At your agency can you discuss other factors that are important for CHWs?

By the time the participants answered this question, they had no other important factors.

Health Outcomes

Q: Are health outcomes improving at your agency due to the work of CHWs?

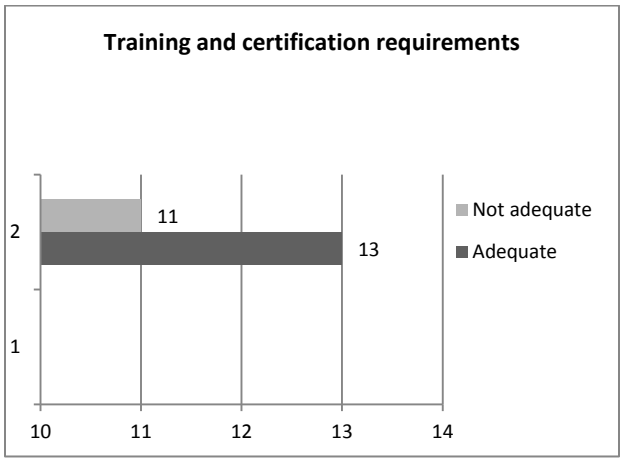


Total number of responses 24 participants, 2016.

For one hospital, readmission decreased 15% due to the work of CHWs. Another hospital reported that reducing readmissions solidified the use of OP clinics in the community. Health outcomes in a community setting included improvement in depression and breast cancer rates, as well as oral health. There has been an effort to serve low-income people with dental care. Also, there has been prevention of nursing home admissions. One participant stated that it was difficult to determine health outcomes.

Training and Certification.

Q: Are the current training and certification requirements for your CHWs adequate in your agency?



Total number of responses 24 participants, 2016.

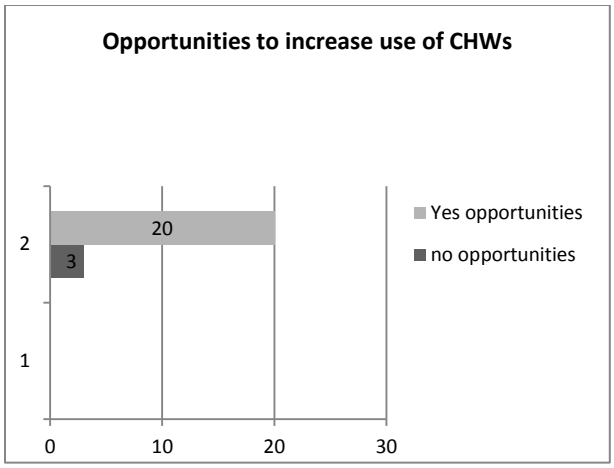
Some agencies found the training and certificate requirements to be adequate, while others did not find them to be adequate. There is such a variety of training and certification requirements that they vary from agency to agency. Because there is no certification for CHWs, the training is varied.

One participant found the training requirements in the hospice field to be adequate among CHWs. In the field of mental health, it was felt that an area of weakness was documentation in the medical record by peer specialists. It was evident among participants that training

requirements could be improved. One agency with volunteers found that there were very minimal requirements for training, while another agency had very formal training.

Increase the use of CHWs

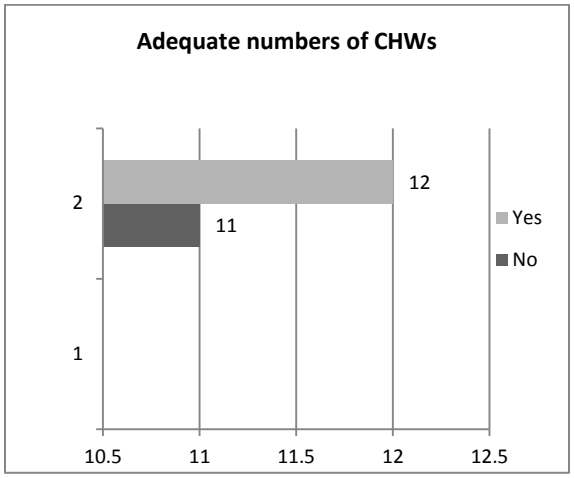
Q: Are there opportunities to increase the use of CHWs in health care teams at your agency?



One participant did not answer. Total number of responses 23 participants, 2016.

Most agencies felt that there were opportunities to increase opportunities based on funding. One participant stated that there is a need to increase the number of CHWs. There are isolated villages that need these services. One participant stated that if programs don't break even, they don't expand them. Adequate number of CHWs not relevant to results.

Q: Is there an adequate number of CHWs in your agency?

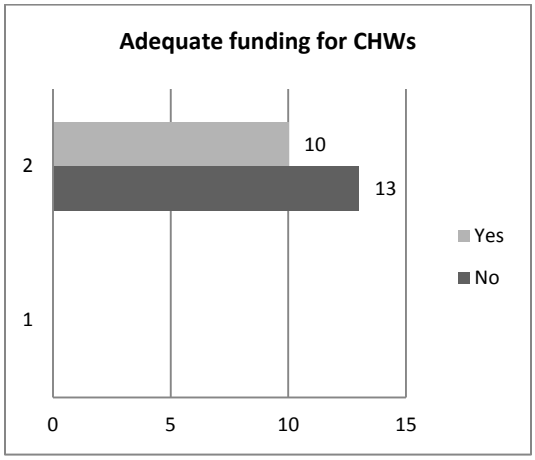


Total number of responses 24 participants, 2016. One participant did not respond to the question.

One participant stated that people can make more money at a gas station than working as a CHW. .In the field of mental health, there are adequate numbers of peer specialists because Medicaid and the county pay for these services. One participant stated that in the Head Start program there was not an adequate number of CHWs because the caseloads were too large. At a church, there was an adequate number of volunteers with the numerous programs. Hospice participants stated that there were many volunteers to deal with the demands of the agency. Based on the coding of the data and the responses of the participants, there were varied opinions about the adequacy of the number of workers or volunteers.

Funding

Q: Is there adequate funding for CHWs at your agency?



One participant did not respond to this question. Total number of responses 23 participants, 2016.

Participants in the area of mental health found there to be adequate funding. Participants from the health agencies found a need for more funding because the sources of funding were often not adequate. One participant from a hospital stated, “There is not adequate funding. Until there is a system of reimbursement, the CHWs cannot be certified and trained.” Reinforcing this point of view, another participant stated, “Reimbursement rates are low and don’t increase steadily or significantly, so CHW pay doesn’t change a great deal.” Finally, a third participant stated, “Would like an increase in funding to increase the wages of the CHWs and to support professional development activities. “Participants in volunteer organizations were more apt to state that there were no funding issues.

Even though there was a difference of opinion about funding for CHWs, it was evident that there are significant weaknesses in the funding of CHWs in the state of Pennsylvania.

Appendix C

Leadership Interview

Thank you so much for agreeing to provide additional information about the use of community health workers at your agency. Could you answer the following questions?

1. Tell me about your agency and how community health workers (CHWs) are utilized?
2. At your agency what are the key activities for CHWs? (making connections, educating medical and social service providers, providing health education and information, leading support groups, basic screenings, health insurance enrollment assistance, patient navigation, care coordination)
3. At your agency what are the sources of funding or resources to obtain volunteers?
4. At your agency what are the training and certification needs for your CHWs?
5. At your agency how do you deliver effective services with CHWs in rural areas of Pennsylvania?
6. At your agency what populations are being served by CHWs?
7. At your agency what health issues are being addressed by CHWs?
8. At your agency what are the barriers to success of CHWs?—funding, training and certification, integration into the health system.
9. At your agency what do you see as the strengths and weaknesses of utilizing CHWs in your organization?
10. At your agency can you discuss other factors that are important for CHWs?
11. Are health outcomes improving at your agency due to the work of CHWs?

12. Are the current training and certification requirements for your CHWs adequate in your agency?
13. Are there opportunities to increase the use of CHWs in health care teams at your agency?
14. Is there an adequate number of CHWs in your agency?
15. Is there adequate funding for CHWs at your agency?

Appendix D Focus Group Questions

Community health workers-focus groups

We would like your thoughts and reflections on community health workers in rural areas of the state of Pennsylvania.

1. What are the roles and responsibilities of community health workers in rural areas of Pennsylvania?
2. What are the models for effective service delivery for community health workers in rural areas of Pennsylvania?
3. What are the barriers to increasing the use of community health workers in rural areas of Pennsylvania?
4. What are the health outcomes of the population who are served by community health workers in rural areas of Pennsylvania?
5. What health problems (diagnoses-physical or mental health) are being served by community health workers in rural Pennsylvania?
6. What are the education, training, and certification issues for community health workers?
7. What are the opportunities for increasing the use of community health workers in rural areas of Pennsylvania?

Appendix E: Significant Differences in Chi Square between type of agency and tasks in the community.

Table
Significant difference in Chi Square between type of agency and tasks in the community
N=144 CHW survey

	Clinic	Community Base Org.	Health Dept.	Mental Health Agency	Hospital	Health Insur. Comp.	Shelter	Faith Based Org.	No sign. Difference
Health Ed.									**X**
Referrals	**.006**	**.029**				**.014**		**.027**	
Home Visits						**.03**			
Support groups									**X**
Case finding									
Clinical services	**.056**			**<.001**					
Teach classes								**.033**	
Health Fairs									
Collaborate	**.047**			**.006**					
Peer Ed mentoring				**.036**			**.05**		
Schools									
Health Plan Enroll	**<.001**								
Case Management	**<.001**								
Counsel				**0**				**.024**	
Health Screening									**X**
El. Record	**<.001**					**.002**			
Office	**.003**								
Translate	**<.001**					**0**			
Transp.					**.016**				
EMS									
Comm. Orgn						**.007**	**.012**		
Follow up Referrals	**.001**			**.004**		**.002**			
Fundraise/Grant	**.028**								
Accomp. clients				**.046**					
Identify pay for Health Care	**<.001**					**<.001**			
Identify Resources	**.001**			**.003**		**<.001**			
Other			**.037**			**.035**			

Note: Numbers indicate p-values: smaller numbers indicate stronger differences between the given agency and the others in providing the service listed on the left

Note: Source of Data: CHW survey, Responses 144 CHW workers, 2016.

Appendix F -Predict CHW responses to Health Outcomes.

The regression equation accounted for nearly 24 percent of the variance in health outcome scores, F (3,116) = 12.07, $p < .001$. Table presents a summary of the final step in the analysis. Standardized Beta weights (□) indicate the strength of the relationship between the variable and Health outcome: higher numbers indicate stronger predictive power.

Table

Stepwise regression predicting CHW responses to Health Outcomes

Variable	B	SE (B)	□	*t*	Sig. (*p*)
Total # of tasks	.053	.025	.205	2.08	.040
Increased opp. for CHW use	.251	.071	.293	3.54	.001
# of people served monthly	.113	.050	.221	2.27	.025
R^2 = .238					

CHW survey (2016)

Appendix G -Skills for CHW Tasks

Overall, only 4.5 percent of participating supervisors noted bilingualism as an essential skill. Inpatient facilities (33.3 percent) and community health centers (15.4 percent) were significantly more likely to value this skill than were other agency types: □^{2}(5, N=66) = 11.63, p = .04. Overall, only 16.7 percent of our supervisors noted capacity building as an essential skill. Schools and day care facilities (50 percent) and community health centers (23.1 percent) were significantly more likely to value this skill than were other agency types: □^{2}(5, N=66) = 12.06, p = .034. Overall, 40.9 percent of our supervisors noted service coordination as an essential skill. School and day care facilities (87.5 percent), inpatient facilities (66.7 percent) and mental health

and substance abuse agencies were significantly more likely to value this skill than were other agency types: χ^2(5,N=66) = 17.63, p = .003.

Appendix H- Chi Square for activities

While 45.9 percent of the supervisors reported outreach education as a core function of their community health workers, home health, home care, and hospice agencies were least likely to view this skill as core (11.1 percent). Both schools/day care facilities (75 percent) and community health centers (69.2 percent) viewed outreach education as central to their role: χ^2(10,N=61) = 18.02, p = .055. While 45.9 percent of the supervisors reported patient compliance as a core function of their community health workers, school and day care facilities were least likely to view this skill as core (12.5 percent). Both home health, home care, and hospice agencies (73.7 percent) and mental health and substance abuse agencies (50 percent) viewed outreach education as central to their role: χ^2(10, N=61) = 25.98, p = .004.

Appendix I- Bivariate Relationships

Relationship among variables in study –

In order to gain an understanding of the relationship among 15 variables in the CHW study, a bivariate correlation matrix was created. The strongest correlations were at a positive moderate or negative moderate level. A moderate correlation of r = .538 (** = p < .01) was noted between 1) tasks performed and mental health/health issues and 2) tasks performed and monthly caseload: r=.569 (** = p < .01). In agencies, tasks performed by CHWs would have an effect on mental health/health issues of patients of the CHWs and monthly caseload. Annual income was moderately correlated with tasks performed and monthly caseload: r=.602 and r=.596(** = p < .01). It is noted that years worked and age did not seem to be variables strongly

correlated with other major variables in the CHW survey. Being paid or volunteer was moderately related to age: r=.635 (** = $p < .01$). Hours worked was negatively moderately related to age: r= -.551 (** = $p < .01$).

Table

Bivariate Correlations between Major Variables in the CHW Survey

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Tasks Performed												
2. Training Sources	.297**											
3. Populations	.610**	.272**										
4. Ethnic Groups	.359**	.123	.553**									
5. Mental Health Issues	.538**	.243**	.487**	.325**								
6. Monthly Caseload	.569**	.134	.440**	.395**	.385**							
7. Health Outcomes	.314**	.279**	.183*	.088	.127	.295**						
8. Opp for CHWs	.100	.205*	.173*	.073	.011	-.109	.184*					
9. Adequate Funding	-.077	.058	-.016	.131	.011	-.103	.019	.129				
10. Annual Income	.602**	.206*	.579**	.393**	.397**	.596**	.305**	.026	.073			
11. Years Worked	.031	.023	-.093	-.010	-.024	.049	.044	-.053	-.205*	.068		
12. Age	-.236**	-.073	-.183*	-.231**	-.099	-.293**	-.116	-.058	-.120	-.426**	.372**	
13. Paid/Volunteer	-.499**	-.249**	-.338**	-.295**	-.308**	-.478**	-.233**	.011	-.054	-.706**	.165	.635**
14. Education	.268**	.064	.289**	.157	.180*	.272*	.182*	.133	-.170	.245**	.090	.037
15. Hours Worked	.468**	.242**	.466**	.383**	.324**	.558**	.228**	.034	.041	.785**	-.114	-.551**

Note: Paid/Volunteer coded as 0 = volunteer, 1= paid

* = $p < .05$; ** = $p < .01$.

(Full table not presented to fit page)

Note: Source of Data is CHW survey, 2016.

In the CHW administrator/supervisor survey, the Table illustrates bivariate correlations through a matrix. This matrix shows minimal significant correlations. The number of paid CHWs was moderately correlated with number of clients served daily: r=.646 (** = $p < .01$).

Higher full-time salaries correlate with higher part-time salaries: r =.746 (** = $p < .01$). Bigger agencies (as evidenced by number of clients served daily) don't necessarily serve more populations or issues—some seem more specific in their mandate (as evidenced by no significant correlation. The more populations served, the more issues that need to be addressed: r = .511 (** = $p < .01$)

Table

Bivariate Correlations between Major Variables in the CHW Administrators Survey

Variables	1	2	3	4	5	6	7	8	9	10
1. # of Paid CHWs										
2. # of Volunteer CHWs	.030									
3. # of Clients Served Daily	.646**	-.128								
4. Avg. Daily Caseload per CHW	.090	-.081	.235							
5. Avg. Full-time Salary	-.035	.438	-.062	.015						
6. Avg. Part-time Salary	-.023	-.174	-.125	.049	.746**					
7. Avg. Volunteer Hours	.010	.334	.046	.366	.557*	.154				
8. Minimum Education Required	-.071	-.220	.000	.182	.170	-.188	.111			
9. Total Funding Sources	.438**	.184	.303*	-.116	.178	.151	-.136	-.079		
10. Total Populations Served	.177	.262	.237	-.087	.150	.336	.084	-.092	.373**	
11. Total Issues Addressed	.121	.301	.066	-.177	.366*	.336	.143	-.215	.231	.511**

Note: Only 29 respondents reported having volunteers in their organization, thus making higher correlation coefficients still statistically non-significant.

* = $p < .05$; ** = $p < .01$.

Note: Data from CHW Supervisor/Administrator Survey, 2016.

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