

Community Health Worker Programs in Chicago's Health Care Institutions: Research and Evaluation

Annual Progress Report
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Submitted to:
Lloyd A. Fry Foundation

Submitted by:
Melissa Gutierrez Kapheim, MS,
Epidemiologist II
&
Jamie Campbell, MPH,
Research Assistant II

Sinai Urban Health Institute
Sinai Health System
California Avenue at 15th Street
Room K439
Chicago, IL 60608
773-257-5258, voice
773-257-5680, fax

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Year Two Report

Project Summary

Racial and ethnic minority groups are at greater risk for poor health, yet experience numerous obstacles in accessing health care. Over the past two decades, one of *Healthy People's* overarching goals has focused on the reduction and elimination of disparities.¹⁻³ This national imperative, coupled with recent socioeconomic pressures, have focused attention on the Community Health Worker (CHW) model as a mechanism towards improving the health of underserved and marginalized communities. CHWs are indigenous, trusted, and respected members of the community they are serving. They function as a bridge between their peers and health professionals. The CHW profession is developing and defining itself and the work of CHWs is becoming more mainstream. Yet, CHWs are still underutilized and underfunded due in part to a lack of understanding of the CHW concept and a lack of evaluation confirming the effectiveness of CHWs.⁴ While specific CHW studies and programs have proven effective in reaching significant outcomes, meta-analyses contain mixed evaluations of CHWs and their effectiveness.⁵⁻⁸ This is due in part to the dramatically different CHW job functions, intervention approaches, and health issues. In addition, in most available studies a rigorous study design and sound evaluation methods are lacking, and throughout the CHW field there is no good systematic evaluation of CHW models. Several studies have explicitly called for the creation of common measures to be used in research and evaluation related to CHWs;⁹⁻¹¹ however, no study has yet to be conducted.

The primary aim of this project is to clearly delineate CHW effectiveness and best practices in terms of evidence-based science. To our knowledge, there is no study of this kind that has been conducted, though its importance is undeniable.^{5, 11, 12} The project will answer research and evaluation questions posed throughout the CHW field.^{10, 11, 13} Information collected in the study will be synthesized and analyzed to produce: 1.) Guidelines for the Implementation of CHW Models in Health Care Settings; and 2.) standardized process and outcome evaluation tools for CHW programs being implemented in a health care setting.

Project Activities: Summary of Year 1

Initial Work and Survey Development

In the first year, the Project Director (PD) finalized the study's protocol and work plan and a Research Assistant (RA) was hired and trained. The PD and RA developed two surveys— one for CHWs and the other for administrators of CHW programs in health care settings. The survey instruments are a modified version of the surveys used in the landmark *Community Health Worker National Workforce Study (CHW-NWS)*.¹⁰ Existing questions from the *CHW-NWS* were redesigned and new questions added to increase the relevancy of the survey to medical settings. For instance, "medical record review" would be an added answer choice to a question regarding program evaluation. Surveys were collected from both CHWs themselves and program administrators. There were 34 questions on the CHW survey and it took approximately thirty minutes to complete. Topics included CHW background information, program information, CHW job duties, CHW training, CHW hiring, CHW compensation, and CHW connection to the community. The administrator survey has fifty-six questions and took approximately one hour to complete. Topics included agency information, CHW program details, CHW background, CHW compensation, CHW hiring, CHW training, CHW demand and barriers, CHW supervision, CHW connection to the community, funding information, and program evaluation. Process and outcome measures were assessed for each

program to determine how health care centers evaluate the impact of CHWs. Surveys were made available in paper form and also online through Qualtrics® survey building software. This was for purpose of accommodating persons with disability, including those whose mobility issues would preclude them from participating in a paper survey. A certified interpreter translated the survey and consent form to Spanish in order to accommodate Spanish-speaking CHWs. The final survey instruments can be found in Appendix A and B.

The project was approved by Mount Sinai Hospital's Institutional Review Board (IRB) on December 8, 2011. The original approval letter and annual approval letter can be found in Appendix C.

Literature Review

In tandem to this work, the RA conducted an extensive literature review on Community Health Workers (CHWs) to enlarge our knowledge and better inform the study. Organized into four sections, the literature review summarizes over 115 CHW articles from the professional literature. Section 1 covers the definition and scope of the CHW workforce, providing a background on *who* CHWs are and *what they do*. It discusses CHW job titles, workforce definition, roles, duties, workplace settings and most common types of services provided by programs. The section also provides an overview on the various models of CHW practice. Section 2 further discusses the CHW workforce profile, highlighting current workforce trends including demographics, pay, training, and credentialing. It also touches on workforce development, providing a brief overview of the profession's history, including its current state and possible future trends. Section 3 reviews CHW research, featuring some of the most common chronic conditions and maternal/child health issues found in the literature, including asthma, diabetes, hypertension, cancer, pregnancy, and child health. Lastly, Section 4 discusses the current state of evaluation science in regards to CHW effectiveness and cost-effectiveness. It covers the challenges of data collection and evaluation, possible solutions to common barriers, and recommendations for future research. In development of this project, the literature review proved vital to our understanding of CHWs, overall and more specifically, in health care settings. The literature review can be found in Appendix D.

Recruitment of Health Care Institutions

The study surveyed health care centers located on the Westside of Chicago, a cluster of predominantly low-income, inner city, Non-Hispanic African American and Latino communities. The Westside is not a medically underserved area, located within close distance to the Illinois Medical District; it has large university-based research hospitals, specialty hospitals, and the largest safety-net medical facilities in the region. However, Westside residents suffer some of the worst health outcomes in the city. For example, life expectancy, or how long on average a person may expect to live, is 77 years for Chicago as a whole (2005-2007), while the life expectancy for Westside neighborhoods such as North Lawndale is 70 years. Or in other words, those living in North Lawndale, a community on Chicago's Westside can expect to live seven years less than the city overall.¹⁴ Compared to national statistics, many communities also have increased rates of diabetes,^{15, 16} asthma,¹⁷ hypertension,¹⁸ and obesity.¹⁹ Therefore, surveying Westside communities allows for a robust sample of health care centers in communities facing substantial health disparities to determine: 1.) whether agencies which may benefit from CHW utilization employ CHWs; and 2.) how CHW programs operate within a wide range of health care centers.

A list of hospitals and clinics was derived from a comprehensive online health care directory compiled and kept up-to-date by a local non-profit, the Chicago Asthma Consortium. Recruitment occurred between October 2011 and April 2012, based on the criterion that agencies must: 1.) Be a health care setting (clinic, hospital, outpatient facility, health department); 2.) Employ CHWs based on the APHA definition; 3.) Be

located within the zip codes of 60608, 60612, 60622, 60623, 60624, 60644, and 60651. One large employer of CHWs could not complete the survey during this time frame, however, did so in October 2012.

Contact was attempted to 25 organizations (see Table 1 for recruitment outcomes). Nearly half (44%) of Westside agencies reported that they do not employ CHWs. Of those that do (28%), on average each organization has 2 CHW programs. A total of 16 programs were surveyed.

Table 1. Study Recruitment

Recruitment Outcome	Number of Agencies
Agencies With No CHW on Staff	11 (44%)
Agencies That Employ CHWs*	7 (28%)
Agencies Which Were Unresponsive	7 (28%)
Total Organizations	25 (100%)

*Of those agencies, a total of 16 programs were surveyed.

After the project met its recruitment goal, outreach was expanded Chicago-wide in hopes of bolstering the sample size of the study for analysis purposes. We reasoned that additional surveys might provide further insight and a more robust sample concerning the scope of CHW models, implementation approaches, and evaluation capacities of local health care agencies. A list of Chicago area clinics and hospitals were derived from the same comprehensive online health care directory compiled by the Chicago Asthma Consortium, which was used in our initial study, and by email, health care agencies citywide were notified of the survey. Additional recruitment consisted of advertisements through networking meetings and professional contacts. These recruitment efforts resulted in eligible and complete surveys for an additional 12 CHW and 8 administrators.

Data Collection

CHWs and administrators at each of the participating agencies completed surveys. After agencies filled out the CHW and administrator survey, they were asked to provide a variety of data collection tools, reports, and/or tracking methodologies, and meet with project staff to informally discuss how they evaluate their programs. By working with both CHWs and administrators at collaborating agencies, data was collected via surveys, interviews, and meetings. In addition to the survey, we collected process (tracking tools, log sheets, enrollment and outreach information) and outcome metrics (data collected, case notes, medical records, etc) being used to measure and evaluate program effectiveness at our participating agencies.

Project Activities- Current Year

The following report documents progress towards goals set in our original proposal for the second year of funding. Progress and major activities are described for the interval of 6/1/12-8/30/13.

Data Collection and Analysis

One large employer of CHW programs could not complete the survey during the initial recruitment phase. To capture the most representative sample of Westside agencies, we surveyed this agency in October 2012. The data was entered into a database, and then all data was then re-analyzed in SAS 9.2.

Survey Results

Below are the findings of 62 CHW survey respondents and 21 administrator survey respondents. It should be noted that there was only one administrator surveyed per program. Multiple CHW programs could have

existed within one health care organization and administrators were therefore surveyed separately for each program included. All CHWs per program per organization were included in the survey. The average number of CHWs surveyed per program was three with a range of one to seven. Therefore, the results of the CHW survey data should be interpreted with this caveat.

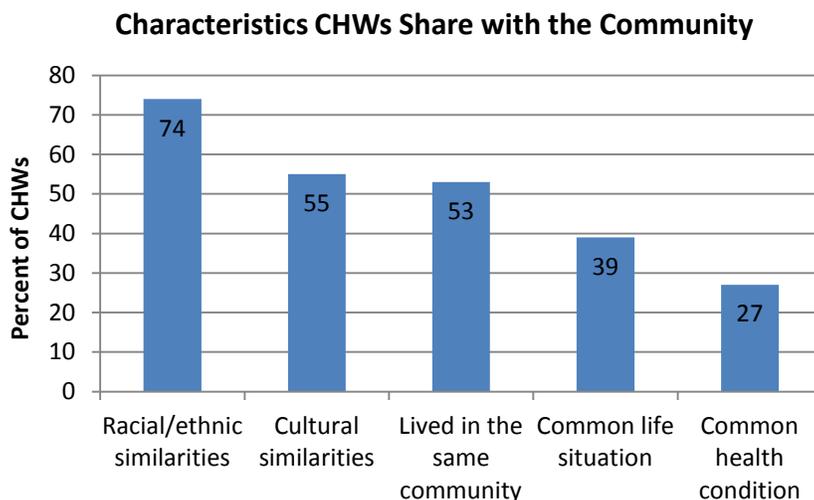
Program information. Of the programs surveyed, 76% rely on short-term funding and 65% were established after 2000. On average, each organization employs seven CHWs with a range of one to thirteen CHWs employed.

Number of Clients Served Annually by CHWs (N=21 Administrators)	Percent
1-100	9.5%
101-250	4.8%
251-500	19.0%
501-750	4.8%
751-1,000	0.0%
1,001-2,500	38.1%
2,501-5,000	4.8%
5,001 or more	19.0%

Demographics. The majority of the CHWs surveyed are female (69%) and were on average 41 years old. Nearly half were Hispanic (47%), 42% were Non-Hispanic Black, with the rest being Non-Hispanic White (8%), or other (2%). Most CHWs had some college education or vocational schooling (40%), 37% had a college degree, and 19% had a high school degree or below. All CHWs that we surveyed were paid employees. They worked an average of eight years as a CHW and six years in their current organization.

CHW Relationship with Community Served: We surveyed CHWs in health care settings regarding their relationship with the community they serve. Figure 1 shows how the CHWs surveyed connect with the community. The majority (74%) has a racial/ ethnic similarity with the community they serve and 55% has cultural similarities.

Figure 1. Characteristics CHWs share with the community they serve

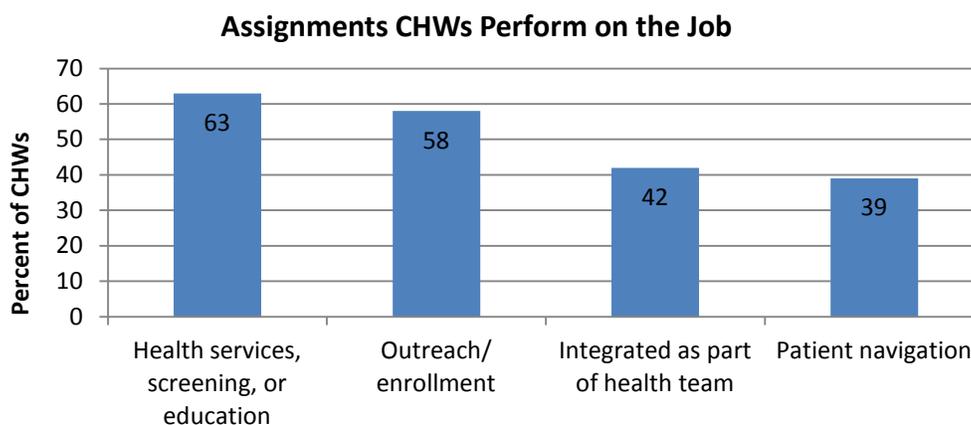


We were also interested in the CHW's belief and association with the widely accepted American Public Health Association (APHA) definition (see page X). The APHA has five main components in the definition of CHWs. In the survey the definition was deconstructed and CHWs were asked whether or not they agreed with the statement. The five traits and the percent of CHWs who associated with that part of the definition are as follows.

- 1) I am a trusted member of the community I work with (71% agreement);
 - 2) I have a close understanding of the community I work with (68% agreement);
 - 3) I improve the quality of health and/or social services for my clients (65% agreement);
 - 4) I help my clients access health and/or social services (68% agreement); and
 - 5) I improve the cultural competence of health and social services for my clients (39% agreement).
- On average, each CHW agreed with at least 3 statements.

CHW Titles and Assignments. In the professional literature, CHWs are commonly referred to as "Community Health Workers"; however, only one respondent stated that they go by the title Community Health Worker. The majority go by the term Community Health Educator (34%) or Patient Navigator (11%). The term "peer" often appeared in CHW titles; Peer Educator (8%), Peer Mentor (7%), Peer Counselor (7%). Figure 2 displays data for the assignments that CHWs perform at their job as a CHW with 63% providing health services, screenings, or education and 58% said outreach/ enrollment. Eighty-two percent of CHWs stated they collaborated with others on the service delivery team, including the Program Manager (57%), other CHWs (47%), doctors (45%), nurses (45%), and social workers (28%).

Figure 2. Assignment CHWs perform on the job in health care settings



CHW Job Duties and Functions: Fifty-seven percent of CHWs in health care settings surveyed assisted their clients in gaining access to medical services and programs, 51% provide culturally appropriate health education to their clients, 46% assist their clients in gaining access to social services, 34% provide social support, and only 25% conduct outreach and recruitment.

Populations Served, Service Area, and Location of Service Delivery: In general, the majority of CHWs and CHW programs served women (77%), but men were also commonly a population of concern (66%). More specifically, elderly and children were the populations served the most by CHWs in health care settings (50% and 37% respectively). CHWs tended to provide services to the entire city of Chicago and to clients receiving health care services at their organization. In regards to the location of health service delivery, health and social services were mainly provided on-site at the organization (69%), in the hospital (45%), and at community events (55%). Different from CHWs who are based in Community-Based Organizations, only 23% of CHWs in health care settings deliver services in a client's home.

Health and Social Issues: On average CHWs surveyed on the Westside of Chicago worked to address five different health issues in their role. The health topics (see Table 3) match the health needs of the community as evident by previous research conducted by SUHI.²⁰ The social service topics addressed by programs (see Table 4) were found to be more specific to health care settings and their existing areas of expertise (i.e. providing health literature, health insurance issues, etc.).

Table 3. Top Health Topics Addressed

Health Topics Addressed (N=62 CHWs)	Percent of Agencies
Nutrition	42%
Diabetes	44%
Physical activity	31%
Asthma	29%
Women's health	29%

Table 4. Top Social Service Issues Addressed

Social Service Issues Addressed (N=62 CHWs)	Percent of Agencies
Health information access	65%
Health insurance	31%
Housing	26%
Community Violence	23%
Domestic Violence	23%

Additional Data. CHWs and administrators of CHW programs were also surveyed on CHW hiring, training, supervision, program structure, and program evaluation. A detailed description of these outcomes can be found in Appendix E.

Systematic Literature Review

In the previous year, we conducted a broad-based literature review on CHWs to provide an overview of the field and to reveal gaps in the literature-base (Appendix D). From this initial search, we then developed specific research questions regarding the structure of CHW programs, as follows:

1. How are CHWs being utilized in a range of distinct health care settings (e.g., FQHCs; hospitals; primary care settings; specialty care; emergency department; in-patient clinics) and are CHWs effective in these roles?
2. What training modules are available and utilized in preparing CHWs for their roles within health care organizations?
3. What training are CHWs receiving in health care settings? Is there training besides basic job duty training provided? Is the training provided in house or through another organization?
4. How are CHWs integrated into health care delivery teams? Have programs experienced any problems? What is the reaction of physicians, staff, and patients?
5. How are CHWs hired and supervised? Do programs report any lessons learned?
6. How are CHW programs in health care settings evaluated? What, if any, process measures are tracked related to CHW roles and responsibilities? Are outcomes tracked related to the effectiveness of CHWs in improving health status or disease management? Can system data be linked to provide outcome data for patients?
7. What are the outcomes associated with using CHWs in health care settings? (i.e., are CHWs supplementing the activities of health care professionals thereby enhancing their productivity; are improved health outcomes resulting in lower health care costs?)?

To identify the most current and relevant CHW publications, an extensive literature search was conducted through April 2013 using PubMed and the Cumulative Index to Nursing and Allied Health Literature (CINAHL), two computerized databases that house a broad collection of health-related articles. CHWs are referred to by varying titles, therefore, to be most inclusive, we searched thirty-four terms including:

- Community Health Worker(s)
- Community Health Representative(s)
- Patient Navigator(s)
- Lay Navigator(s)
- Promotor(a)
- Promotores(as)
- Community Health Educator(s)
- Lay Health Worker(s)
- Peer Educator(s)
- Lay Health Educator(s)
- Lay Health Advisor(s)
- Health Advocate(s)
- Community Health Advisors(s)
- Health Promoter(s)
- Outreach Worker(s)
- Lay Worker(s)
- Community Health Aide(s).

A vast amount of CHW literature exists. As a snapshot of the progression, we can compare the volume of articles published through the decades. In the 1970s, 62 CHW articles were published, 114 in the 1980s, and 395 in the 1990s. Then, in just a five year period (2000-2005), nearly 300 new articles came into print,¹⁰ and publishing rates continue to develop at a fast pace. Thus, with limited manpower and such a robust sample of articles, we only reviewed those written in English and published after 1997. Articles were included if determined to have substantial reporting on the selected CHW practice topics (supervision, hiring, etc.), and both intervention and non-intervention studies were considered. We included summaries or literature reviews when found. We did not include intervention settings outside the United States to ensure the study remains related to concerns of the U.S. health care system. Also excluded were articles in which a full-text was unable to be retrieved. Additional articles and published reports were gathered by hand-searching the citations of relevant articles, through networking, and via web-searching. Information from the included articles was abstracted and entered into a table by relevant characteristics.

Lastly, the literature review is not specific to healthcare agencies yet holds significant relevance. The basic structure of CHW programs (i.e., hiring, supervision, training, etc.) likely contains similarities across practice settings. When available, health care specific examples are made prominent. The review is inclusive to the larger range of CHW programs because few articles focus specifically on CHWs in health care settings. As such, many researchers call for further exploration of CHWs in this role.²¹⁻²⁴ It is possible that CHWs are being included within multidisciplinary teams in clinics, health departments and hospitals, yet few studies exist because programs are not publishing results,²² possibly due to lack of time, evaluation methods, experience in the publishing process,²⁵ or other reasons. Although not exhaustive, the literature review contains over 200 citations providing substantial evidence regarding the structure of CHW programs. This literature review, combined with the other data elements described shortly, provide the most comprehensive overview of the selected CHW practice topics to date.

Development of CHW Best Practice Guidelines

There is a growing movement among health care organizations to adopt the CHW model as part of their system to provide care to patients and community members. However, there is uncertainty among health care administrators and providers as to how to implement the CHW model to obtain the triple aim of health

care– better health, better quality, and lower costs. These Best Practice Guidelines were developed to address gaps in the CHW professional literature and assist public health professionals, health care administrators, health care providers, CHWs, and communities in designing and implementing CHW interventions *grounded in evidence-based science*. Practice guidelines can be tailored to specific program needs, intended to provide guidance in decision-making and offer solutions to common program implementation challenges.

Objectives

- Create CHW Best Practices grounded in evidence based science
 - Summarize the available evidence from professional literature, national and local surveys, lessons learned and case stories from the field
- Provide evaluation tools, including standardized CHW process and outcome measures
 - To aid programs wanting to more critically examine processes, outcomes, cost, and cost-benefits associated with their CHW interventions

Topics included in the Best Practice Guidelines

- Innovative approaches to CHW hiring, training, and performance evaluation;
- Supervision challenges and strategies for success;
- Providing a positive organizational climate to facilitate CHW integration;
- Other effective elements of program design; and
- Program evaluation, including the inclusion of standardized CHW process and outcome measures.

Although intended for use by health care agencies, these guidelines may prove useful to a variety of CHW practice settings, including faith-based or community-based organizations, and may be especially useful in instances of new uptake of the CHW model and its principles. Please use discretion in what may be applicable and work best for your program. It is our intention that these Best Practice Guidelines will lead to better implementation of the CHW model, better training, higher standards of evaluation, improved patient care, improved connection with the health care system, and ultimately improve health outcomes and quality of life for vulnerable communities.

The CHW Best Practice Guidelines are broken up into five *Summary of Evidence* sections

Section 1: CHW Hiring

Section 2: CHW Training

Section 3: CHW Supervision

Section 4: Integrating CHWs into Service Delivery Teams

Section 5: CHW Program Evaluation

Within each of the five sections, there contains three data elements relating to the practice topic:

1. An extensive review of available published literature to offer the largest pool of evidence gathered of the subject areas;
2. Findings from the 2007 *Community Health Worker National Workforce Study*¹⁰ as a snapshot of CHW practices nationally; and
3. Evidence derived from the 2011 *CHW in Chicago Health Care Setting Survey* for a summary of local findings specific to health care settings.

Lastly, to provide illustrative examples, we include case studies of CHW practice experience and lessons learned relating to the practice topics. The CHW Practice Guidelines, including a description of its methods and recommendations are included in Appendix F.

Development of Standardized Metrics

Evaluating CHW programs is essential to ensuring their continued success and sustainability. As part of the diverse nature of the CHW field, including the differing models, interventions, and disease states, benchmarks and measures used to evaluate CHW models are often specialized and program specific. We attempted to create standardized tools that are cross-cutting and can be tweaked to fit programs at various health care institutions. The goal of these measures was to clearly delineate what CHWs contribute to health care settings in one or more of the following capacities: 1.) Health outcomes, 2.) Health care quality (i.e. patient satisfaction, return rate, show rate, etc.), and 3.) Lower health care costs.

The development of the standardized metrics involved several steps. First, the RA conducted an extensive literature search on local and nationally recognized quality improvement measures, such as those set forth by the Agency for Healthcare Research and Quality (ARHQ) and others, and how these metrics are developed. The RA also researched common measures collected in CHW programs and the usefulness of electronic medical records in health services evaluation. The PD reviewed and synthesized this information and data collected in the *CHW in Chicago Health Care Setting Survey (2011)*. She critically examined the process (tracking tools, log sheets, enrollment and outreach information) and outcome metrics (data collected, case notes, medical records, etc) currently being used by participating agencies to understand what measures are being collected and to gauge the average health care agency's capacity for evaluation. The PD then created a set of proposed standardized process and outcome metrics for CHW programs in health care settings, along with a data collection guide.

SUHI's standardized evaluation metrics measure the impact of the work of CHWs by examining their role in contributing to enabling services, such as increasing show rates, connecting clients to services, case management in terms of treatment, referrals, and health assessments, health education, and outreach services. These enabling services can be linked to health outcomes of patients, which are also measured. These two assessments combined can be used to assess the cost benefit of the CHW model. The tools will be finalized in the next month.

Additional Perspectives from the Field

To provide illustrative examples, we reached out to experienced researchers, program managers, and CHWs themselves to provide case stories relating to the practice topics. The case stories add to our knowledge-base practice examples in a real-life context. They reflect on program management decisions and describe what worked and what did not. They discuss solutions to problems encountered and provide tips for program success. We also asked leading stakeholders their perspectives on the future of the CHW field locally and nationally. These global views provide a framework to view the field and its future direction.

Collaborating with other CHW Initiatives

Both the PD and RA have been actively involved with several groups working on CHW initiatives both locally and nationally. Locally in Chicago, Melissa (PD) and Jamie (RA) have been active members of the Chicago CHW Local Network, the CHW Alliance, and have worked on many CEED@Chicago CHW initiatives. In 2012, Melissa was nominated and accepted to sit on the Steering Committee for the Alliance.

Melissa has served as a member of CEED's Health Literacy CHW Committee, a working group to advance policy and systems change to increase health literacy among Latinos and African Americans to reduce diabetes and cardiovascular disease. She has advised their Healthy Eating and Physical Activity curriculum for its appropriateness to CHWs. Melissa has also provided data and reviewed slides for CEED's Physician and Administrator presentation, an effort to raise awareness among health professionals of CHW program

effectiveness and cost-savings. The presentation was recorded into a webinar, of which Sinai Health System President and CEO Alan Channing is featured as a key speaker.

Nationally, Melissa is a member of the American Public Health Association CHW Section. This is the lead national organization on CHW affairs. Melissa is also the head of the awards committee, leading the efforts to select the winner for the first annual APHA CHW Section "CHW of the Year." Actively working with the APHA CHW Section has allowed Melissa to connect with prominent national researchers in the CHW field.

Policy Recommendations. Project staff has worked with partnering agencies of SUHI to develop policy recommendations. Melissa is a member of the policy sub-committee of the CHW Local Network and attends their meetings regularly. In the past year, the group has been hosting CHW policy workshops across the city and recently the state of Illinois, which have been used to gather information from CHWs and CHW stakeholders on how they would like CHW policy and CHW certification policy shaped in Illinois. This work is being led by the Chicago CHW local network and Health & Medicine Policy Research Group. Data from the community workshops and an online survey was given to Melissa and Jamie for analysis. The data process entailed cleaning the data, writing the SAS 9.2 programs, analyzing the data and creating data tables. Health & Medicine Policy Research Group is currently interpreting and providing written summary of the results which will be used to determine consensus on key policy questions, such as who should oversee the certification process, what core competencies are needed for community health work, and what authority a "certification Board" may have in developing and monitoring such a process.

State Medicaid Policy. The Project Director, Melissa Gutierrez Kapheim, is a member of the Access subcommittee of the state Medicaid Advisory Committee. The group, led by Mary Driscoll of the Department of Public Health and Eli Pick of Post Acute Innovations, advises the Department of Healthcare and Family services on policy and planning related to Medicaid. The special focus of the committee is addressing health disparities and ensuring timely access to care without discrimination. The committee was tasked in determining how best to identify and enroll Medicaid recipients that are newly-eligible with expansion of health coverage under the Affordable Care Act. Melissa advocates on behalf of the CHW role and Westside communities regarding how to integrate these new Medicaid-eligible enrollees into the system.

Providing Technical Support to Health Care Agencies

Work on this project continually helps facilitate relationships between SUHI and other health care organizations who are interested in implementing the CHW model. As a leading expert in health disparities research and program evaluation, SUHI has a great deal of expertise in working with fellow health care institutions in assisting them to develop evaluation methodologies, evaluation tools, protocols, and databases to store and query their data. Informally, we have been conducting best practice workshops and assisting organizations with the uptake of the CHW model. Our most recent trainings include:

1. Workshop sessions with staff from John Hopkins in Baltimore, Maryland. The agency is working to develop a feasibility pilot of a geographically-focused, multi-level community health workforce intervention to improve engagement with appropriate care and health outcomes in specific East Baltimore neighborhoods. Led by SUHI staff; Melissa sat on panel to discuss CHW hiring, training, supervision, and program evaluation.
2. Advising UIC Emergency Department staff on the feasibility of implementing a CHW intervention in the ED, led by Melissa Gutierrez and Jamie Campbell.
3. Sharing project data and advice with the Director of Community Services (Karen Baker) at Northwest Community Healthcare and the Director of Community Health Access Program

(Venoncia Bate) at Alexian Brothers Health System requested and used our data to present at a leadership meeting in hopes of launching a more extensive CHW program at their hospitals.

4. Training SUHI medical student interns on CHW model and history, led by Jamie Campbell.
5. Advising the Mount Sinai Hospital HIV program on CHW models and taking a hospital-based CHW program into the community.
6. Advising the Mount Sinai Hospital Disease Management program on CHW disease management, system integration and coordination of care.

Dissemination

The dissemination of program efforts and findings is central to our activities. The project strives to get information out to both local and national audiences about the work and collaboration between SUHI and others with funding from the Lloyd A. Fry Foundation. The PD and RA have disseminated project activities, survey development, project findings, and the resultant tools (evaluation metrics, guidelines, etc.) to a variety of audiences. We have reported back individually to each participating agency, and presented at scientific meetings, CHW group meetings, and other venues as appropriate. We have prepared written manuscripts, in the form of best practice guidelines, with our findings and recommendations.

Below is a description of some of our major dissemination activities:

1. In July 2012, the project convened a meeting to report back our initial survey findings to participating agencies and other key stakeholders.
2. The project submitted two abstracts for the 140th Annual American Public Health Association Conference in October 2012 and was accepted to present both, one being an oral presentation, "Community Health Workers in Chicago's Health Care Centers: Roles, Program Structure, and Evaluation," which highlights our current project's efforts and results, and the second, "Community Health Workers to Health Policy Advocates: Engaging CHWs in the policy development process," a roundtable discussion on our policy work in collaboration with the CHW Local Network and Health and Medicine Policy Research. Both presentations were well received by leading national CHW researchers.
3. The project played a key role in collaborating with the CHW Local Network and other key stakeholders, including Health & Medicine Policy Research Group and the University of Illinois at Chicago (UIC) School of Public Health, in planning and development of the 2013 CHW Forum. The purpose of the conference was to provide an update on local CHW initiatives and a forum for strategic planning regarding ways to further the CHW profession in Illinois. Jamie (RA) presented Fry survey findings and discussed the emerging role of CHWs in health care settings. One hundred sixty-three CHWs, researchers, funders, and health professionals attended and the conference received high reviews.
4. In June 2013, a description of our work and evaluation metrics was presented by a networking partner at the Society for Community Research and Action Conference in Miami, FL.

Short-term Outcomes

We have had much success in meeting our short-term outcomes and have laid the foundation for long-term impact. Below are our short-term outcomes as listed in the original proposal with an update of where we are with achieving their outcome at the conclusion of our second year of funding.

- Collaborate between groups working on CHW models, research, and policy
 - See *Collaborating with other CHW Initiatives* section. We have not only been active in working with other groups, but we are in lead roles with several groups.
- Develop the CHW Health Care Setting Survey

- The CHW and administrator surveys have been developed, tested, and implemented. They can be found in Appendix A and B.
- Collect data from 10-20 CHW programs at 4-8 health care institutions serving the Westside of Chicago
 - Collaborating with 16 programs at 7 organizations, the project has well met its goal of collecting data from 10-12 programs at 4-8 health care institutions serving the Westside of Chicago
- Synthesize data from 10-20 CHW programs at aforementioned health care institutions
 - Data from the aforementioned agencies has been collected, entered, and the PD has synthesized results. Final results can be found in Appendix E.
- Disseminate findings back to organizations so they know if CHWs are being used effectively, trainings are being conducted effectively, supervision, etc.
 - We first disseminated our findings at our report back meeting held on Thursday, July 26, 2012. We have then followed up with each participating institution, to other local audiences, and at national conference. We will continue to disseminate results over the next year through a partnership with the Institute of Medicine and Chicago and continued collaboration with the Fry Foundation.
- Determine how CHWs are used in a variety of health care settings
 - Results have been finalized. All data tables can be found in Appendix E. In addition, cross tabulations have been run between CHW surveys and administrator surveys when possible. Comparisons to national data were also made.
- Critically examine a variety of CHW training models used
 - We have done this by conducting an extensive literature review and through our survey conducted in health care settings in Chicago. We discuss this in detail in the best practice guidelines.
- Analyze a variety of CHW models to determine if there are models that show greater promise based on the available evidence, for improving health outcomes for particular diseases and particular populations
- Determine if there are cost savings associated with the use of CHWs
- Improve the capacity for program evaluation at health care institutions utilizing CHWs by serving as technical experts to these institutions
- Develop standardized process and outcome evaluation tools for CHW programs affiliated with health care institutions
- Produce Best Practice Guidelines for the Use of CHWs in Health Care Settings
- Disseminate findings to a variety of audiences, organizations, and venues

Long-term Impact

Health care reform calls for innovation and systems change. Provisions of the Affordable Care Act, such as hospital readmission reduction and patient-centered medical homes, well match CHW roles and work. As such, the utilization of CHWs as valued members of health care teams is progressively being discussed by medical providers, researchers, and policy-makers as a strategy in complying with health care reform and meeting the goals of health care's triple aim. However, there is uncertainty among health care administrators and providers as to how to implement the CHW model to obtain the "triple aim"- better health, better quality, and lower health care costs.

This project aims to provide information and solutions to a range of organizations struggling to provide quality care to vulnerable populations in the health care field. The best practice guidelines developed will

assist agencies with new uptake of the model and also aid groups currently working on CHW issues in Chicago, Illinois, and the nation to better implement their work. While the field of CHWs is growing at a rapid pace, significant evaluation pieces are still missing from the literature. The evaluation metrics we created can be used by health care organizations to not only evaluate their CHW programs, but also show their effectiveness to funders and policy makers (perhaps to diversify payment models for such programs). The CHW evaluation metrics also serve as an opportunity for CHW programs to make improvements where needed. Researchers will also be able to compare CHW programs across health care centers, programs, and throughout the country.

Ultimately, we believe this project will help bring cohesion to the CHW field, providing structure to the various CHW models, programs, and research findings, which is a vital next step in the establishment of CHWs as key members of primary health care delivery teams and in informing CHW policies. Moreover, armed with best practices the state of Illinois will be better informed to make policy decisions regarding the use of CHW in the health care setting.

Most importantly, this work has the potential to make a lasting impact on the health and economic stability of underserved communities by improving preventative health services and chronic disease management, while empowering community members to serve as health care professionals. Health disparities are well documented; what is not well understood is how to eliminate health disparities in a manner that is cost-effective. The wide spread use of CHWs is one method that has been proposed as a venue by which health equity might be achieved in a manner that is sustainable in a difficult economic climate. This project will help assess the feasibility of this claim and will provide a scientific framework for the CHW field, health care institutions, and communities. We hope our project is a step towards a healthier future for historically underserved communities.

Next Steps

In collaboration with the Institute of Medicine of Chicago (IOMC), SUHI has secured funding from the Portes Foundation to build on the work funded by the Fry Foundation – the CHW Research and Evaluation Study. This grant will provide substantial opportunity to disseminate the work done on this project and generously supported by the Fry Foundation. The IOMC has a strong interest in the work of Community Health Workers, especially as it relates to improving the health of the public, part of the IOMC mission. Particularly of interest is how to bring together key health professionals and CHWs to more effectively collaborate to improve overall patient outcomes and the health of various communities. Their expertise will guide the development and implementation of an inter-professional conference, bringing together health care professionals intended to engage medical professionals around the CHW model and facilitate in-depth workshops for individual health care centers to further learn CHW model implementation.

First, this project will seek to add additional health care centers to the data collection sample of the *Chicago CHWs in Health Care Setting Survey*. Second, the CHW Best Practice Guidelines for implementing CHW programs in health care organizations will be disseminated to health care organizations and professionals across Chicago. Third, the project will encourage the uptake of the CHW Model (i.e., hiring CHWs and implementing the CHW Model) in health care organizations across Chicago. There are five main goals of the proposed project.

1. Building on the pilot data, broaden the survey we used in the Fry CHW Research and Evaluation Project. We will be creating a small survey to determine why organizations do not employ CHWs and if they have interest in learning more about the CHW model to potentially implement the model.

2. SUHI and IOMC will develop and conduct an inter-professional conference highlighting best practices of the CHW model in health care settings.
 - a. The Fry Foundation will be recognized at this conference as the funder of this work and an advocate of the work of CHWs. We plan to collaborate with the Fry Foundation on this conference.
3. SUHI will conduct workshops for health care professionals to
 - a. disseminate findings from the pilot CHW Research and Evaluation Study,
 - b. discuss CHWs in terms of evidence based science and best practices to integrate the CHW model into the health care system,
4. Conduct a thorough evaluation of the conference and workshops on their system level impact.
 - a. Evaluate the conference in terms of success in delivering the message, implementation of the CHW Model and other practices discussed at the conference, and systems changes that occur due to participation in the workshop
 - b. Evaluate the uptake of the CHW Model and system-level changes that occur in organizations following the workshops
5. Finally, and most notably, we want to encourage health care organizations to hire CHWs and implement the CHW model in their system.

Each of these goals is designed to help us achieve a larger long-term goal of integrating CHWs into the health care system in a meaningful and systematic way that is supported by sound and robust research and evaluation. This work will help continue to the work started on this project, which has been generously funded by the Fry Foundation. It is believed that by building the health care system's ability to incorporate the work of CHWs, disparity communities will have a more cohesive voice in their health care and, hence, improved health will be a more likely reality.

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