Community Health Worker National Workforce Study

March 2007

U.S. Department of Health and Human Services
Health Resources and Services Administration
Bureau of Health Professions

U.S. Department of Health and Human Services
HRSA
Health Resources and Services Administration

Community Health Worker National Workforce Study

March 2007

U.S. Department of Health and Human Services
Health Resources and Services Administration
Bureau of Health Professions

Preface

During the past decade, private insurers, business enterprises and the Federal government have implemented or proposed changes in health care delivery and financing. These payers were reacting to unprecedented increases in health-related expenditures amid hypercompetitive global markets. Simply, the cost of providing adequate health care to employees and the population at large had become very high.

Some viewed the community health worker (CHW) workforce as a component of cost-effective strategies addressing the health care needs of underserved communities. However, there was little rigorous, comprehensive research about the CHW workforce.

This report describes a comprehensive national study of the community health worker workforce and of the factors that affected its utilization and development. The research began in 2004 and was concluded in 2007 by the Regional Center for Health Workforce Studies of The University of Texas Health Science Center at San Antonio under contract No. HHSH230200432032C awarded by the United States Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions. The Evaluation and Analysis Branch, Office of Workforce Analysis and Quality Assurance, BHPr, HRSA, was responsible for overseeing the research project.

Executive Summary

Introduction (Chapter 1). This report describes a comprehensive national study of the community health worker (CHW) workforce. The 27-month research project utilized a survey of verified CHW employers in all 50 States, more in-depth interviews of employers and CHWs in 4 States, conducted a comprehensive review of the literature, and made national and State workforce estimates using databases from the Census and the U.S. Department of Labor, Bureau of Labor Statistics.

During the past decade, private insurers, business enterprises, and the Federal government, responding to the high cost of providing adequate health care to employees and the population at large, implemented or proposed changes in health care delivery and financing. Some of the factors contributing to the cost challenges included population changes, provider shortages, accelerating technological progress, and the increasing complexity of the health care system. Population projections have been predicting a large increase in the U.S. elderly population (estimated to be 87 million in 2050) and, due to higher fertility among minorities, an increase in population diversity and the size of younger cohorts of individuals from low-income families. These changes in the size, structure and diversity of the population have been and will be requiring a broader range of health services for entire families and communities. Cultural understanding, community health education, and translation services have been and will be increasingly needed for delivering effective care to families and communities that are often isolated and underserved. Additionally, many providers are in short supply and have been caring for increasingly large and diverse patient populations in regulated environments that discourage patient/provider interaction and continuity of care. The diffusion of new science and technology while offering encouraging solutions has not yet reached a scale large enough to outpace providers' shortages and the escalating cost of care. However, telemedicine and new methods of disseminating scientific information have been empowering individuals with less extensive clinical training but strong personal and community skills to become valuable members of established medical teams for improving access, patient communication and compliance, outreach, prevention, and early diagnoses in underserved communities.

These converging demographic and economic forces set the stage for the emergence of the community health worker workforce and its utilization in cost containment and cost-effective strategies aimed at providing health care to the underserved.

CHW Definition

> *Community health workers are lay members of communities who work either for pay or as volunteers in association with the local health care system in both urban and rural environments and usually share ethnicity, language, socioeconomic status and life experiences with the community members they serve. They have been identified by many titles such as community health*

advisors, lay health advocates, "promotores(as),"[1] outreach educators, community health representatives, peer health promoters, and peer health educators. CHWs offer interpretation and translation services, provide culturally appropriate health education and information, assist people in receiving the care they need, give informal counseling and guidance on health behaviors, advocate for individual and community health needs, and provide some direct services such as first aid and blood pressure screening.

Chronology of CHW workforce development (Chapter 2). The history of community health workers is rooted in early self-preservation and self-reliance strategies by communities the world over. However, references in the U.S. literature about CHW activities are found mostly after the mid-1960s. For this study, selective lists of critical events marking the evolution of the CHW workforce have been grouped into four periods.

- During the ***early documentation*** period (1966-1972), the attempts to engage CHWs in low-income communities were experimental responses to the persistent problems of the poor and related more to antipoverty strategies than to specific models of CHW intervention for disease prevention and health care.
- The next period (1973-1989) was characterized by ***special projects*** funded by short-term public and private grants, often linked to research in universities, and produced a substantial increase in published studies documenting CHWs' potential in interventions aimed at health promotion and access to health services.
- ***State and Federal Initiatives*** (1990-1998) followed. Standardized training for CHWs received greater recognition and there was a surge of communication among CHW initiatives across categorical funding programs. Many bills in support of CHW activities were introduced at the national and State levels, but none passed.
- The latest period included significant ***Public Policy*** (1999-2006) actions. Legislation specifically addressing CHWs, their use and their certification was passed in several States and a Patient Navigator bill was signed into law as a major piece of legislation at the Federal level addressing CHW activities. Also, a 2003 Institute of Medicine report on reducing health disparities made recommendations regarding CHW roles.

Workforce size and characteristics (Chapter 3). There is no specific occupational code that can be used in official reports for community health workers and, therefore, there are no official estimates of the number of community health workers (CHWs) in the United States. Until now, these workers have been reported under existing occupations that have similar but not equivalent job descriptions.

For this study, estimates were made of volunteer and paid CHWs in each of the 50 States, first by making an assessment of the occupations that were likely to have been used as

[1] The terms *promotores* and *promotoras* are used in Mexico, Latin America, and Latino communities in the United States to describe advocates of the welfare of their own community who have the vocation, time, dedication, and experience to assist fellow community members in improving their health status and quality of life. Recently, the terms have been used interchangeably, despite some opposition, with the term community health workers.

proxies for community health worker activities in reports to the Bureau of Labor Statistics and the Census Bureau. Then, the approximate percent of individuals in those occupations likely to be CHWs was determined. The occupations included in the estimates were counseling, substance abuse, educational-vocational counseling, health education, and other health and community services. CHWs were estimated to be from 5 to 40 percent of the workers engaged in these occupation/industry categories and they were either wage earners (67 percent) or volunteers (33 percent) in not-for-profit and for-profit organizations such as schools, universities, clinics, hospitals, physician offices, individual-family-child services, and educational programs.

Approximately 86,000 community health workers assisted American communities in 2000. California and New York were home to about 9,000 and 8,000 CHWs, respectively. Texas, Florida, and Pennsylvania had between 3,500 and 5,000 CHWs each. The States of Illinois, Ohio, and Georgia had, in that order, a CHW workforce of 3,520, 3,503, and 3,250. Ten States employed approximately 2,000 CHWs each, 7 States about 1,000 CHWs and the remaining 25 States, as well as the District of Columbia, only several hundred CHWs each.

The personal and professional characteristics of CHWs were assessed through a CHW National Employer Inventory (CHW/NEI) in all 50 States, never attempted before this study. A list of contacts, verified through phone calls (2,500), received a letter of invitation and appropriate reminders to participate in a Web-based survey. The inventory represents the most comprehensive and systematic effort to date of contacting, in every State, as many organizations employing CHWs as possible.

CHW Race/Ethnicity

The majority of individuals engaged in community health worker activities were either Hispanic or Non-Hispanic White (35 and 39 percent, respectively). The next largest groups were African-Americans (15.5 percent), Native Americans (5.0 percent) and Asian and Pacific Islanders (4.6 percent). Volunteer and paid CHWs had a similar racial and ethnic distribution with a somewhat higher relative proportion of Non-Hispanic Whites in the volunteer group. The majority of CHWs were female (82 percent) between the ages of 30 and 50 (55 percent). The predominance of women in this workforce was partly due to the focus of many programs on underserved children and their mothers as well as to clients' greater acceptance of female caregivers in their homes. One-fourth of the workforce was younger than 30 and one-fifth was older than 50. Volunteers were more numerous in the older groups. More than one-third of all employed and volunteer community health workers had a high school education (35 percent); about one-fifth had completed some college work (20 percent), and almost one-third had at least a 4-year college degree (31 percent). Paid and volunteer CHWs were similar across levels of educational attainment except that more volunteers had less than a high school diploma and more paid workers had completed some college.

Wages

Sixty-four percent of the positions paid new hires an hourly wage below $13; only 3.4 percent of them paid at or near the minimum wage (under $7 per hour) and 21 percent paid $15 per hour or more. The majority of experienced CHWs (70 percent) received an hourly wage of $13 or more and about half of them received more than $15 per hour, indicating that longevity and/or experience received economic recognition.

Health workers have been engaged with different job titles in different models of care. Titles and models of care ranged from those of volunteer workers seeking the general improvement of a community's health status to those of outreach workers with specific jobs aimed at reducing the impact of a single illness such as diabetes or HIV/AIDS. The common traits among these diverse roles have been found to be the commitment of these health workers to both the communities they assisted and the organizations for which they worked, the skill of interacting effectively with both, and the ability to motivate clients.

Volunteer CHWs were employed either by grassroots organizations, usually faith-based, or in outreach and health education efforts designed by university researchers and local health care providers, or in programs with ambitious goals but limiting budgets trying to maximize program impact from limited resources.

Populations Served

The communities receiving CHW services included all ethnic and racial groups but, most often, Hispanic/Latino (as reported by 78 percent of the respondents), Black/African-American (68 percent) and Non-Hispanic White (64 percent). One-third of the respondents reported services to American Indian/Alaska Natives and Asian/Pacific Islanders (32 and 34 percent, respectively). The clients targeted most frequently were females and adults ages 18 to 49. Special populations included the uninsured (as reported by 71 percent of respondents) followed by immigrants (49 percent), the homeless (41 percent), isolated rural residents and migrant workers (31 percent each), and *colonia* residents (9 percent). Programs serving immigrants, migrant workers, and the uninsured were more likely than other types of programs to have volunteer CHWs.

Health Issues and Activities

The most frequently reported health issues for which employers chose interventions that included CHWs were women's health and nutrition (46 and 48 percent of respondents, respectively). These issues were closely followed by child health and pregnancy/prenatal care (41 percent each), immunizations (37 percent), and sexual behavior (34 percent). Next, employers reported CHW interventions targeting specific illnesses such as HIV/AIDS (39 percent), diabetes (38 percent), high blood pressure (31 percent), cancer (27 percent), cardiovascular diseases (26 percent), and heart disease (23 percent). Programs dealing with cancer, cardiovascular disease, diabetes, and high blood pressure

were more likely to have only volunteer CHWs than programs working with other conditions.

The CHW specific work activities involved culturally appropriate health promotion and health education (as reported by 82 percent of the respondents) followed by assistance in accessing medical and non-medical services and programs (84 and 72 percent, respectively) and complemented by "translating" (36 percent), interpreting (34 percent), counseling (31 percent), mentoring (21 percent) and, more generally, social support (46 percent) and transportation (36 percent). Related to these work activities, employers reported specific duties such as case management (45 percent), risk identification (41 percent), and patient navigation (18 percent), and direct services such as blood pressure screening (37 percent).

Key functional areas for CHW activity included creating more effective linkages between communities and the health care system, providing health education and information, assisting and advocating for underserved individuals to receive appropriate services, providing informal counseling, directly addressing basic health needs, and building individual and community capacity in addressing health issues.

Models of Care

The study identified five prevailing models of care engaging CHWs: (1) *Member of care delivery team*. In this model, the CHW was largely subordinate to a lead provider, typically a physician, nurse, or social worker. Tasks were relatively specific and generally delegated by the lead provider. (2) *Navigator.* The navigator role placed greater emphasis on the CHW's capabilities for assisting individuals and families in negotiating increasingly complex service systems and for bolstering clients' confidence when dealing with providers. The navigator model did not necessarily require a high degree of clinical supervision, but it did require a high level of awareness about the health care system. The major contribution by CHWs in this model was that of improving access and educating consumers as to the importance of timely use of primary care. (3) *Screening and health education provider*. This model of care has been one of the more common, and was often included in many categorically funded initiatives on specific health conditions such as asthma and diabetes. CHWs taught self-care methods, administered basic screening instruments and took vital signs. CHWs were able to gain access to hard-to-reach populations and were willing to work in neighborhoods or rural areas where other professionals were reluctant to practice. There were concerns, however, about the quality of services and information provided by CHWs, prompting calls for strict evaluation of the CHWs' training and close supervision of their activities. (4) *Outreach-enrolling-informing agent*. "Outreach worker" was a common job title for CHWs, and it addressed the need of many programs to reach individuals and families eligible for benefits or services and persuade them to apply for help or come to a provider location for care. (5) *Organizer.* This model of care more often involved volunteer CHWs who became active in a community over a specific health issue, promoting self-directed change and community development. The models listed were not always

mutually exclusive and the list was compiled with the intent of integrating several but not all of the existing classification schemes.

Education and training (Chapter 4). Employers hiring community health workers have been looking for individuals with some formal education, specific qualities, and certain skills. Also, while employers have provided post-employment training for general education and specific competencies, they have not always offered opportunities for a career as a CHW. Employers reported that the languages most often used by CHWs to communicate with clients were English and Spanish (87 and 70 percent of the respondents, respectively). Less than 10 percent of the employers reported the use of French, Vietnamese, and Chinese. Few (6.4 percent) reported the use of sign language and knowledge of tribal languages (3.8 percent). Cultural competence was defined in this study as "the ability of understanding and working within the context of the culture of the community being served." This definition was easily understood and agreed upon in field-testing and by employers interviewed in the four States selected for further study. However, responses were mixed as to whether cultural competence required that the CHW be a resident of the area being served.

About half of employers had educational or training requirements for CHW positions. Twenty-one percent mentioned that at least a high school diploma or GED was expected. A Bachelor's Degree was a prerequisite to employment in 32 percent of the organizations. Most employers required post-hire training of CHW personnel through either continuing education (68 percent) with classroom instruction (32 percent) or through mentoring (47 percent) and on-site technical assistance (43 percent). The length of training reported ranged from nine to 100 hours. Employer-based training often was aimed at both enhancing the generic skills of CHWs and at the acquisition of competencies needed for specific programs. Specific training was required for understanding medical and social services, coordinating access to services, home visiting and patient "navigation," providing health education and counseling, and administering first aid and CPR. Texas was the first State to adopt legislation governing the utilization of CHWs (1999). It was followed by Ohio in 2002.

Generally, the occupation of CHW has not been viewed as a career, because CHWs have positions that are often short-term, low paid, and lack recognition by other professionals.

Employers (Chapter 5). Since statistics on employers were not available, their total was derived from the estimates of paid and volunteer CHWs and findings from the CHW National Employer Inventory (CHW/NEI). The number of organizations employing community health workers was estimated to be 6,300 for the Nation as a whole. This rough approximation was obtained by dividing the average number of CHWs engaged by the employers surveyed for the CHW National Employer Inventory into the estimated national total of CHWs. The industries more likely to employ CHWs were "Individual and Family Services" (21 percent), "Social Advocacy Organizations" (14.2 percent), "Outpatient Care Centers" (13.3 percent), and "Administration of Education Programs" (12.9 percent). Additional industries found to have CHWs among their personnel,

although less often, included "Other Ambulatory Health Care Services" (8.4 percent) and "Office of Physicians" (5.3 percent).

The largest percentage of the organizations engaging CHWs (43 percent) were firms employing between 5 and 19 employees. Twenty percent had between 20 and 49 individuals on the payroll, and another 19.1 percent fell in the 50 to 249 employee category. Few, 2.8 percent, employed 250 to 499 individuals and 2.3 percent had 500 or more employees. About 12.5 percent of the firms had fewer than 5 employees.

Employers' Hiring Rationale

The occupational characteristics of CHWs that have been motivating employers to hire them were identified by combining findings from the employers' interviews and information gleaned from the review of the literature. Generally, employers have hired community health workers because they (a) learned about their successful utilization in professional journals, (b) believed that they were cost effective, (c) found that CHWs were capable of organizing communities in developing comprehensive health action plans, or (d) discovered that programs addressing health disparities were more effective when using one-to-one outreach by CHWs. Community health workers were viewed as having contributed to more effective delivery of health-related services because they were (1) effective in gaining access to hard-to-reach populations that had been avoided by other health workers; (2) able to patiently coach clients in culturally appropriate terms and induce behavioral changes; (3) able to successfully communicate with clients, after developing trusting and caring relationships, to impart or gather information and motivate key decisions such as participating in immunization programs; and (4) able to address certain client needs such as adapting health regimens to family and community dynamics.

Recruitment Strategies

Networking has been the recruitment strategy used most often by employers (74 percent). Churches and local businesses have been successful intermediaries in attracting qualified candidates, and clinic-based programs have recruited among patients. Other recruitment methods ranged from mass mailings to partnerships with existing volunteer organizations.

Barriers

Consistently, in the national Inventory, in employers' interviews and in the literature, the prevalence of short-term funding and the necessary reliance on multiple funding sources were cited by employers and other observers as major barriers to the development of the CHW workforce. Federal and State governments provided most of the funds. Private organizations, local governments, and other sources supported about one-third of the employers. HRSA funding supported many CHW programs principally through the Federally Qualified Health Centers of the Bureau of Primary Health Care (BPHC) and the Healthy Start Programs of the Maternal and Child Health Bureau (MCHB). About one-fourth of employers responding to the "funding" section of the national Inventory

survey reported receiving funding from HRSA or having a HRSA-sponsored program. A growing area of support for CHWs was found to be for-profit firms, both through outsourcing or direct employment. However, most of the information on the utilization of CHWs by for-profit organizations was considered proprietary, sensitive from a competitive viewpoint, and was not available for inclusion in this study.

Research on the CHW workforce (Chapter 6). The study described in this report marks the first research effort that used a survey of verified employers in all 50 States to draw a profile of the community health worker workforce. Over the years, there has been a significant increase in the number of published journal articles addressing CHW-related topics, from 62 articles in the 1970s to nearly 400 in the 1990s, and 299 from 2000 to 2005. However, no peer-reviewed journal exists with a specific focus on CHW practice. The quality and scope of research described in the articles varied from few rigorous evaluations of specific medical interventions utilizing CHWs to many descriptive reports of CHW programs. Many studies suffered from small sample sizes, poor research designs, and lack of control groups.

Nine literature reviews have been published between 2002 and 2006 to evaluate the use of community health workers in specific primary care and medical specialty interventions. These reviews represent the best available assessments of findings from research on health interventions that included the use of CHWs. All of the articles reviewed represent contributions to other fields such as pediatrics and health education. Most reported findings were statistically significant, but not all of them had clinical significance. Three of the nine reviews were limited to the involvement of CHWs in interventions addressing diabetes, heart disease/stroke, and pregnancy in minority women. They covered a total of 98 studies, of which 23 were included in more than one review. Two reviews included only randomized controlled trials (RCTs), and one excluded studies measuring only changes in knowledge or attitudes.

Current trends (Chapter 7). There are suggestive indications, but no statistical evidence, of the size and direction of change in the community health worker workforce. Using the estimated proportions of CHWs in selected occupations and projections from the Bureau of Labor Statistics, assuming no changes in the proportions over time, the estimate was made of 121,206 CHWs in 2005, an increase of 41 percent from 85,879 CHWs in 2000.

The majority of employers in Texas and Arizona who participated in telephone interviews were optimistic about continuing the employment of CHWs and even expanding their utilization into health care services addressing diabetes, mental health, and oral health. Few employers mentioned plans of involving CHWs in future clinics, emergency rooms, and additional geographic areas. All employers indicated that continued funding was the key determinant of continued CHW employment.

Reports from selected States (Chapter 8). Regional workforce profiles were assembled with data gathered from published and unpublished studies and reports, special tabulations of the CHW National Employer Inventory, and 48 unstructured interviews

with employers and CHWs. The results of the interviews from the larger States of New York and Texas were compared to the findings from the national Inventory and were found to reinforce those findings. The demographic characteristics of community health workers usually mirrored those of the communities they served. In Arizona, they were primarily American Indians/Alaska Natives, most of them tribal Community Health Representatives (CHRs), and Hispanics, mostly engaged in U.S.-Mexico Border or farmworker programs. In Massachusetts, they were mostly White (80 percent). In New York, 37 percent of CHW personnel were Black/African-American, 35 percent were Non-Hispanic White, and one-fourth were Hispanic/Latino(a). In Texas, the CHW workforce was 68 percent Hispanic/Latino(a), 18.5 percent Non-Hispanic White, and 10.7 percent Black/African-American.

In the selected States, as in the Nation, CHWs were mostly female between the ages of 30 and 50. Exceptions were found in certain programs such as Arizona nutrition programs, or fatherhood, HIV case management, and some youth programs in New York, which maintained a predominance of male workers. Educational levels, wages, utilization, and models of care in the selected States are detailed in Chapter 8.

Table of Contents

List of Tables

List of Figures

Chapter 1. Introduction

Background

Payers and public administrators remember well the unprecedented pressure of the unusually large "baby boomer generation" on the educational facilities of the 1950s and 1960s. During the 1970s, the 1980s and the 1990s, boomers' needs changed and they swayed the political agenda to address jobs and housing, reduce taxes, and attain national and personal economic security. Now that "the big wave," as some demographers call the baby boomers, has arrived on the shores of the 21st century, its impact has been and will continue to be large. Recent projections[1] estimate an elderly population of 87 million people by 2050, a number greater than the entire U.S. population of 1900. For the 21st century, the baby boomer generation has been and will increasingly be demanding adequate preventive, acute, and long-term care. Additionally, in the United States, the changes in the size and structure of the population have been accompanied by unique changes in its diversity, adding special requirements, such as cultural competence, to the type and the quality of health care necessary to improve health outcomes.[2] Demographic diversity will fuel population growth from 2000 to 2050 at a rate that parallels that of the world population and is 10 times greater than that of other developed countries. Seven percent of that increase will come from Non-Hispanic Whites. African-Americans will increase by 71 percent, Hispanics by 188 percent and Asians by 213 percent. The vitality of the minority population has added large cohorts in the youth side of the age spectrum, requiring a broader range of health services for entire families and communities. Cultural understanding, community health education, and translation services have been increasingly needed for delivering effective care to families and communities that are often isolated and underserved.[3]

While consumers had high expectations for the power of medicine and its technical sophistication, they have been disillusioned at times with the care they received and criticized the health system as too complex, impersonal, budget-driven, and expensive. Empowered by simplified and easily accessible health information on the Internet, better-informed patients have been questioning organized medicine and have been willing to explore more economical, accessible, and patient-focused health assistance outside traditional providers.[4]

Some health providers have been in short supply because either not enough graduates exited the educational pipelines, or unequal economic and psychological rewards

---

[1] Murdock SH, Hoque N, McGehee M. Population Change in the United States: Implications of an Aging and Diversifying Population for Health Care in the 21st Century. In: T Miles; A Furino, editors, Annual Review of Gerontology and Geriatrics: Aging Health Care Workforce Issues. New York (NY): Springer Publishing Company, Inc.; 2005; p. 19-63.

[2] Smedley BD, Stith AY, Nelson AR, editors. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington (DC): Institute of Medicine, National Academies Press; 2003.

[3] Murdock et al. (2005).

[4] National Fund for Medical Education. Advancing Community Health Worker Practice and Utilization: The Focus on Financing. San Francisco (CA): Center for the Health Professions, University of California at San Francisco, 2006.

produced uneven geographic distributions of practice locations, or both.[5] Wherever in practice, they have been caring for increasingly large and diverse patient populations in regulated environments that discouraged patient/provider interaction and continuity of care. Budgetary and regulatory constraints have led to mostly short encounters with patients in medical offices, small clinics, and hospitals. Studies about the quality of care and the safety of patients revealed problems that are currently being addressed by industry, the organized professions, and the Federal government.[6] Science and technology offer encouraging solutions such as early detection of illnesses, less-invasive procedures, shorter hospitalizations, new and better materials for body parts, transferability of medical information, and amazing outreach capabilities through telemedicine. While the diffusion of many of these technologies has not yet reached a scale large enough to outpace providers' shortages and the escalating cost of care, the new methods of disseminating scientific information and telemedicine have been empowering individuals with less-extensive clinical training, but strong personal and community skills, to become valuable members of established medical teams to improve access, patient communication and compliance, outreach, prevention, and early diagnoses in underserved communities.

Against this backdrop, community health workers (CHWs) stand out as natural bridges between providers and underserved populations in need of care.

> *Community health workers are lay members of communities[7] who work either for pay or as volunteers in association with the local health care system in both urban and rural environments and usually share ethnicity, language, socioeconomic status, and life experiences with the community members they serve. They have been identified by many titles such as community health advisors, lay health advocates, "promotores(as),"[8] outreach educators, community health representatives, peer health promoters, and peer health educators. CHWs offer interpretation and translation services, provide culturally appropriate health education and information, assist people in receiving the care they need, give informal counseling and guidance on health behaviors, advocate for individual and*

[5] Davis K, Schoen C, Schoenbaum SC et al. Mirror, mirror on the wall: an update on the quality of American health care through the patient's lens. New York (NY): The Commonwealth Fund, April 2006 Report No.: 915.
[6] Kohn LT, Corrigan JM, Donaldson MS, editors. To Err Is Human: Building a Safer Health System. Washington (DC): Institute of Medicine, National Academies Press, 2000; Committee on Quality of Health Care in America. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington (DC): Institute of Medicine, National Academies Press, 2001; Adams K, Corrigan JM, editors. Priority Areas for National Action: Transforming Health Care Quality. Washington (DC): Institute of Medicine, National Academies Press; 2003.
[7] The term "community" is used in a geographic sense describing people living together in a particular area as small as, but not necessarily limited to, a neighborhood, who have some common characteristics and are unified by common interests.
[8] The terms *promotores* and *promotoras* are used in Mexico, Latin America and Latino communities in the United States to describe advocates of the welfare of their own community who have the vocation, time, dedication and experience to assist fellow community members in improving their health status and quality of life. Recently, the term has been used interchangeably, despite some opposition, with the term community health workers.

community health needs, and provide some direct services such as first aid and blood pressure screening.[9]

CHWs have been a worldwide grassroots phenomenon of fellowship, self-reliance, and survival almost as long as communities have existed as social units of individuals sharing residence, cultural heritage and economic conditions.[10] But only in the 1950s did they begin to be part of deliberate strategies for increasing access and delivering cost-effective and culturally sensitive care to the underserved. CHWs were employed in many sectors of social and health services delivery programs.[11] In 2002, the *Directory of HRSA's Community Health Workers (CHWs) Programs* included 35 current and nine recently completed programs that employed CHWs and were funded directly or indirectly by the Health Resources and Services Administration (HRSA). Also, HRSA introduced "health disparities collaboratives," a program that utilized CHWs to improve care and reduce disparities in Federally Qualified Health Centers (FQHCs).[12]

About This Study

Content

Chapter 2 chronicles the involvement of community health workers in the delivery of health services and summarizes the legislative process relevant to their integration into the U.S. health care system. Chapter 3 provides national and State estimates of paid and volunteer workers and describes the CHW workforce. Chapter 4 addresses their requirements at hire, training, certification programs, and career opportunities. Chapter 5 gives an account of the organizations employing them and of the sustainability of their programs. Chapter 6 reviews the extent and nature of current research and cost-effectiveness studies. Chapter 7 discusses trends in CHW utilization. Finally, Chapter 8 summarizes the results of in-depth inquiries on the status and development of the CHW workforce in four States: Arizona, New York, Massachusetts, and Texas.

References to the relevant literature are made throughout the study and a selected annotated bibliography has been assembled into a companion volume.[13]

[9] Definition of CHWs used in this study. More details on the role of CHWs in the U.S. Health Care System are provided in Chapter 3.

[10] Pew Health Professions Commission. Community Health Workers: Integral Yet Often Overlooked Members of the Health Care Workforce. San Francisco (CA): University of California Center for the Health Professions, 1994; Rosenthal EL, Wiggins N, Brownstein JN et al. The Final Report of the National Community Health Advisor Study. Tucson (AZ): University of Arizona, 1998.

[11] See Chapter 2 for an account of the evolution of the CHW workforce and Chapter 6 for an overview of studies on CHW utilization.

[12] Brownstein JN, Bone LR, Dennison CR et al. Community health workers as interventionists in the prevention and control of heart disease and stroke. Am J of Prev Med 2005; 29 (5S1):128-33.

[13] Health Resources and Services Administration. Community Health Worker National Workforce Study: An Annotated Bibliography. U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, March 2007.

Approach

The study employed four research strategies:

- First, a comprehensive list of articles, books, and published and unpublished reports was compiled. These items, including nine published literature reviews from 2002 to 2006, summarized in Chapter 6, were examined for supporting evidence in addressing the topics of the study. Forty-five of the articles judged to be of particular significance because they were published in reviewed journals, seminal, highly quoted, and/or of noteworthy methodology were selected and summarized in an annotated bibliography published separately from the report.[14]
- Second, national and State estimates of the number of CHWs currently engaged in paid and volunteer positions were made using both the Public Use Microdata Sample (PUMS) of the Census Bureau and the Bureau of Labor Statistics' annual survey of industry "staffing patterns."
- Third, a survey of programs utilizing CHWs, referred to in this report as the "CHW National Employer Inventory" (CHW/NEI), was conducted in partnership with the Center for Sustainable Health Outreach of The University of Southern Mississippi. For each of the 50 States, contact information for programs currently employing CHWs was verified and individuals familiar with the programs and community health workers were invited to participate in a Web-based questionnaire – hard copies were made available on request – about the type, health goals, and sustainability of the programs as well as the characteristics, education, skills, type of job held, salary, and career potential of the employed and volunteer community health workers.
- Fourth, in-depth accounts of CHW status and development in the States of Arizona, Massachusetts, New York, and Texas were assembled after discussions with local experts, unstructured interviews (referred to as the "CHW National Workforce Study Interviews" or CHW/NWSI throughout this report) with employers and active CHWs, and reviews of published and unpublished reports.

A national technical advisory group was assembled in consultation with the HRSA project officer to review the research plan and its subsequent revisions. The members' names are listed in Appendix A.

Data sources

The study used both original and extant data. Original data were collected from approximately 900 responses from across the United States[15] and from 48 unstructured interviews with employers and community health workers in Arizona, Massachusetts, New York, and Texas.[16] Existing data were gathered from available reports, comprehensive literature reviews, informative Web sites, literature searches that used both librarians'

[14] Ibid.
[15] The protocol and the questionnaire employed in conducting the CHW/NEI are included in Appendices C and D, respectively.
[16] Copies of the interview protocols are provided in Appendices E1 and E2. Results from the interviews are included throughout the report as appropriate.

protocols and citations from reviewed articles, and from two national databases: the Public Use Microdata Sample (PUMS) of the Census Bureau and the Bureau of Labor Statistics' annual survey of industry "staffing patterns."[17]

[17] The databases used to make National and State estimates of paid and volunteer community health workers are described in Appendix B together with the methodology used for the estimates.

Chapter 2. A Chronology of CHW Workforce Development

Health care planners and administrators are giving increasing attention to community health workers as members of established health care teams. This chapter describes the events that, over time, marked their progressive inclusion in public and private health initiatives. A true history of community health workers would begin more than 300 years ago when communities recognized the advantages of assigning to selected gifted community members the responsibility of assisting other members in health-related matters.[1] However, references in the literature about CHW activities are found mostly after the mid-1960s. Few studies in the 1950s described grassroots self-help projects and basic outreach and education initiatives by indigenous workers.[2] Facts and critical events marking the evolution of those grassroots initiatives into what is now the CHW workforce have been grouped into four periods spanning the years 1966-1972, 1973-1989, 1990-1998 and 1999-2006. The list assembled here is not intended to be comprehensive but only suggestive of significant steps in the development of the CHW workforce.

Early Documentation (1966-1972)

During this period, attempts to engage CHWs in low-income communities were experimental responses to the persistent problems of the poor and were related more to antipoverty strategies than to a specific model of CHW intervention for health improvement. Few early studies described CHW effectiveness and its potential.

- The Federal Migrant Health Act of 1962 mandated outreach, but there was no substantial activity involving indigenous CHWs until the 1970s.[3] Earlier farmworker CHW activity, funded by the former U.S. Children's Bureau, was documented in the 1950s in Florida.[4]
- The earliest documented use of CHWs by the New York City Health Department was in a 1960s tuberculosis program involving "neighborhood health aides."[5]
- Early Federal support of CHW activity came from the Office of Economic Opportunity (OEO) for antipoverty efforts such as "Model Cities" and the "New Careers for the Poor" under the OEO Act of 1964. In these initiatives, job

[1] Rosenthal EL, Wiggins N, Brownstein JN et al. The Final Report of the National Community Health Advisor Study. Tucson (AZ): University of Arizona, 1998.; Fendall NRE. The barefoot doctors: health workers in the front line. The Round Table: The Commonwealth Journal of International Affairs 1976; 264:361-9.
[2] Giblin PT. Effective utilization and evaluation of indigenous health care workers. Public Health Rep 1989; 104 (4):361-8; Richter RW, Bengen B, Alsup PA et al. The community health worker. A resource for improved health care delivery. Am J Public Health 1974; 64 (11):1056-61; Withorn A. Serving the People. Social Services and Social Change. New York (NY): Columbia University Press 1984.
[3] Rosenthal EL et al. (1998).
[4] Johnston HL. Health for the Nation's Harvesters: A History of the Migrant Health Program in its Economic and Social Setting. Farmington Hills (MI): National Migrant Worker Council; 1985.
[5] Wilkinson DY. Indigenous Community Health Workers in the 1960s and Beyond. In: RL Braithwaite; SE Taylor, editors, translator and editor Health Issues in the Black Community. San Francisco, CA: Jossey-Bass, Inc.; 1992; p. 255-66.

creation was an important objective.[6] Studies discussing this initiative were published as early as 1964.[7]

- One of the CHW programs that emerged from the antipoverty initiative was the Community Health Representative Program for Native American populations. It originated under the OEO in 1968 and was gradually transferred to the Indian Health Service between 1969 and 1972.[8]
- One of the first effectiveness studies on CHWs, in which CHWs worked with public health nurses and physicians to encourage compliance with treatment of pediatric respiratory infections, was published in 1970.[9]
- Early university-based research on CHWs was conducted at Tulane in the late 1960s and early 1970s in partnership with Planned Parenthood of Louisiana and included an early systematic look at factors important to successful employment of CHWs.[10]
- Although the Medicare and Medicaid Programs were introduced in this period (1965-1968), no documentation was found of any plan to incorporate CHWs into these programs.

Utilization of CHWs in Special Projects (1973-1989)

No major milestones characterize this period, but there was a steady growth of projects funded by short-term public and private grants. The projects were often linked to research and, therefore, during this period, there was a substantial increase in published studies (see Figure 6.1 in Chapter 6). The studies provided scholarly documentation of CHW potential in interventions aimed at health promotion and access to health services.

- In 1978, a World Health Organization (WHO) declaration concerning CHWs was a symbolic milestone that probably stimulated attention to this workforce in the public health sector.[11]
- The "Resource Mothers" curriculum was developed for the Virginia Task Force on Infant Mortality during the 1980s[12] and became one of the early CHW

[6] Meister JS, Warrick LH, deZapien JG et al. Using lay health workers: case study of a community-based prenatal intervention. J Community Health 1992; 17 (1):37-51: Massachusetts Department of Public Health. Community Health Workers: Essential to Improving Health in Massachusetts, Findings from the Massachusetts Community Health Worker Survey. Boston (MA): Division of Primary Care and Health Access, Bureau of Family and Community Health, Center for Community Health, March 2005.

[7] Reiff R, Riessman F, editors. The indigenous nonprofessional, a strategy of change in community action and community mental health programs. New York (NY): Behavioral Publications, Inc.; 1964.

[8] General CHR Information, History & Background Development of the Program [Internet]. Rockville (MD): U.S. Department of Health and Human Services, Indian Health Service; [updated 2006 Mar 30/cited 2006 Oct 21]. Available from http://www.ihs.gov/NonMedicalPrograms/chr/history.cfm.

[9] Cauffman JG, Wingert WA, Friedman DB et al. Community health aides: how effective are they? American Journal of Public Health Nations Health 1970; 60 (10):1904-9.

[10] Moore FI, Stewart Jr. JC. Important variables influencing successful use of aides. Health Serv Rep 1972; 87 (6):555-61.

[11] Kahssay HM, Taylor ME, Berman PA. Community health workers: the way forward. Geneva (CH): World Health Organization; 1998. Note: "In 1978, the International Conference on Primary Health Care in Alma-Ata proposed the development of National CHW programmes as an important policy for promoting primary health care. Alma-Ata signaled a significant shift in health policy that broadened the means of improving health from the delivery of services to include social, economic, and political development." (p.2)

curricula widely distributed nationally. Indiana used the curriculum to train personnel for the State's community health worker program, which began in 1994 and focused on maternal and child health.[13] International Medical Services for Health (INMED) developed prototype materials for the Resource Mothers programs, renamed the Resource Mothers project *MotherNet* in 1994, and continued to provide handbooks for lay home visitors, implementation guidelines for public and private agencies, and curricular materials for training resource mothers.[14]

- In 1989, the Health Education Training Centers (HETC) program was created to serve primarily the U.S.-Mexico Border region and areas of high immigrant populations. The program has played an important role in promoting the utilization of CHWs in public health projects.
- University-based studies explored the potential of "natural helpers" in improving community conditions through the use of existing social networks for problem-solving and diffusion of positive health-related behaviors.[15]

State and Federal Initiatives (1990-1998)

During this period, standardized training received greater recognition, and communication increased among CHW initiatives across categorical funding programs. Many bills were introduced at the national and State levels, but none passed.

- Arizona Health Start, in 1992, was one of the first CHW programs to receive ongoing appropriations from State general revenue.[16]
- Training centers were opened at the Community Health Education Center in Boston in 1993[17] and at the City College of San Francisco in 1994.[18]
- In 1993, the New Mexico Community Health Worker Association was founded with the support of the University of New Mexico and, in 1996, began annual CHW training conferences under a 3-year development grant from the Robert Wood Johnson and Henry J. Kaiser Family Foundations.[19] Additional associations and networks are listed in Appendix H.

---

[12] Julnes G, Konefal M, Pindur W et al. Community-based perinatal care for disadvantaged adolescents: evaluation of the Resource Mothers Program. J Community Health 1994; 19 (1):41-53.
[13] May ML, Kash B, Contreras R. Southwest Rural Health Research Center: Community Health Worker (CHW) Certification and Training - A National Survey of Regionally and State-based Programs. U.S. Department of Health and Human Services, Health Services and Resources Administration, Office of Rural Health Policy 2005.
[14] Minow M. Revisiting the Issues: Home Visiting. The Future of Children 1994; 4 (2):243-6.
[15] Service C, Sabler E, editors. Community Health Education: The Lay Health Advisor Approach. Durham (NC): Duke University Health Care Systems; 1979.
[16] Office of Women's and Children's Health - Health Start [Internet]. Phoenix (AZ): Arizona Department of Health Services, Division of Public Health Services; 2006 [updated 2006 Sep 13/cited 2006 Oct 9]. Available from http://www.azdhs.gov/phs/owch/healthstart.htm.
[17] Community Health Education Center [Internet]. Boston (MA): Boston Public Health Commission; [cited 2006 Nov 01]. Available from http://www.bphc.org/programs/program.asp?b=7&p=201.
[18] Love MB, Legion V, Shim JK et al. CHWs get credit: a 10-year history of the first college-credit certificate for community health workers in the United States. Health Promotion Practice 2004; 5 (4):418-28.
[19] About Us [Internet]. Albuquerque (NM): New Mexico Community Health Workers Association (NMCHWA); 2006 [cited 2006 Nov 01]. Available from http://www.nmchwa.com/about.html.

- In 1993, the National Advisory Committee on Rural Health and Human Services recommended[20] that "The Secretary should develop initiatives to broaden access and innovation in health care delivery by supporting local programs that utilize indigenous community workers and paraprofessionals as essential members of community health care delivery teams."[21]
- In 1993, the Centers for Disease Control and Prevention (CDC) awarded a grant for one of the first national conferences on CHW programs and related community-based public health activity: "Mobilizing Resources for Practice, Policy and Research."[22]
- In 1994, the Pew Commission for the Health Professions published a landmark descriptive study about CHWs as integral members of the health care workforce. It was excerpted in a 1995 article in the American Journal of Public Health.[23]
- The U.S. Department of Education supported college education for CHWs through a San Francisco program that offered a Community Health Worker Certificate at the City College of San Francisco.[24]
- Kentucky Homeplace was established in 1994 with an annual State appropriation to support "Family Health Care Advisors" to serve 58 counties, mainly rural areas in the Appalachian region.[25]
- A 1997 report sponsored by the Annie E. Casey Foundation described the potential for employing CHWs in contracts with Managed Care Organizations.[26]
- In 1998, the Western Arizona Area Health Education Center, a HRSA-sponsored program, began organizing annual national CHW training conferences.[27] These conferences became a focal point for the *Promotores de Salud,* a distinct CHW workforce devoted to improving the health status of Latino communities.
- The Health Resources and Services Administration, Bureau of Primary Health Care organized, in 1998, the first major national outreach conference on CHW activities to discuss milestones in the field and future strategies across categorical funding programs.[28]

---

[20] Recommendation 93-11: Train Local Health Care Workers

[21] National Advisory Committee on Rural Health and Human Services: Compendium of Recommendations by the National Advisory Committee on Rural Health. [Internet]. Rockville (MD): U.S. Department of Health and Human Services, Health Resources and Services Administration, Office of Rural Health Policy 1993 [cited 2006 Nov 01]. Available from http://ruralcommittee.hrsa.gov/nac_comp.htm.

[22] Brownstein JN. Introductory Remarks. In: Peer Health Education Community-based Programs: Mobilizing Resources for Practice, Policy and Research: Conference Summary, February 7-8, 1993, Tucson, AZ. Arizona Disease Prevention Center and Southwest Border Rural Health Research Center. Tucson, AZ, Rural Health Office, pp. 4-5, 1993.

[23] Witmer A, Seifer SD, Finocchio L et al. Community health workers: integral members of the health care work force. Am J Public Health 1995; 85 (8 part 1):1055-8.

[24] Community Health Works Projects At-A-Glance 2005-2006 [Internet]. San Francisco (CA): Community Health Works of San Francisco 1992 [cited 2006 Nov 03]. Available from http://www.communityhealthworks.org/projects.html#1.

[25] Center of Excellence in Rural Health - Kentucky Homeplace [Internet]. Hazard (KY): University of Kentucky Chandler Medical Center; 1999 [updated 2006 Sep 25/cited 2006 Oct 9]. Available from http://www.mc.uky.edu/RuralHealth/LayHealth/KY_Homeplace.htm.

[26] Rico C. Community Health Advisors: Emerging Opportunities in Managed Care, Annie E. Casey Foundation, Seedco--Partnerships for Community Development, 1997.

[27] Community Outreach Programs [Internet]. Somerton (AZ): Regional Center for Border Health, Inc.; 2006 [updated 2006 Jul/cited 2006 Nov 01]. Available from http://www.rcfbh.com/RCBHPrograms.htm.

[28] Ritchie D. Community Health Workers: Building a Diverse Workforce to Decrease Health Disparities. Providence (RI): Transcultural Community Health Initiative (TCHI), Center for the Study of Race and Ethnicity in America at

- The Annie E. Casey Foundation sponsored the National Community Health Advisor Study, the first project aimed at drawing a national profile of CHWs and their work. The study was released in 1998.[29]

Public Policy Options (1999-2006)

The first State legislation specifically addressing the CHW workforce was passed at the beginning of this period, and the language describing CHWs as "integral members of the health care delivery team," first found in the 1994 study by the Pew Commission, became frequently used with reference to CHWs. Scientific sessions with this title appeared at the American Public Health Association (APHA) Annual Meetings of 2005 and 2006.

- In 1999, CHW training and certification legislation was passed in Texas.[30] This bill mandated pilot projects involving CHWs in Medicaid managed care as well as a feasibility study on CHW certification.
- The El Paso Community College (EPCC) Community Health Worker Program began in the fall of 2000 as a community-driven project.[31]
- In 2000, the National Rural Health Association issued public policy statements supporting expanded roles for CHWs.[32] Similar statements were issued in 2001 by the American Public Health Association[33] and in 2003 by the American Association of Diabetes Educators.[34]
- In 2000, the APHA New Professionals interest group changed its name to Community Health Worker Special Primary Interest Group (CHW SPIG).
- In January 2001, a meeting of State and Federal representatives convened in San Antonio, Texas, to discuss policy options for integrating CHWs into programs such as Medicaid, Women Infants and Children (WIC), Food Stamps and Head Start.[35]
- In 2003, credentialing legislation (HB95) was passed in Ohio.[36]

Brown University, Feb 17-May 17, 2004; Fox D. Strategy sessions held for the development of a national CHW organization. Connections 2002; 3 (2):5.

[29] Rosenthal EL et al. (1998).

[30] HB 1864, which became effective on 9/1/99, created the Promotora Program Development Committee (PPDC). Specifically, it stated: "The purpose of this article is to establish a temporary committee that will study certain issues related to the development of outreach and education programs for *promotoras* or community health workers and that will advise the Texas Department of Health, the governor, and the legislature regarding its findings."

[31] Instructional Programs - Community Health Worker [Internet]. El Paso (TX): El Paso Community College; 2005 [cited 2006 Nov 03]. Available from http://www.epcc.edu/sites/departments/instruction/programs/community/index.html. Flores L. RE: Community Health Worker Program at EPCC [Internet]. Message to: J Martinez. 2006 Nov 8, 12:48 pm [cited 2006 Nov 08]. [1 screen].

[32] Community Health Advisor Programs: An Issue Paper Prepared by the National Rural Health Association-November 2000 [Internet]. Kansas City (MO): National Rural Health Association (NRHA); 2000 [updated 2000 Nov 10/cited 2006 Nov 01]. Available from http://www.nrharural.org/advocacy/sub/issuepapers/ipaper17.html.

[33] American Public Health Association. Policy Statements Adopted by the Governing Council of the American Public Health Association, October 24, 2001. Am J Public Health 2002; 92 (3):467-8.

[34] Albright A, Satterfield D, Broussard B et al. Position Statement on Diabetes Community Health Workers by the American Association of Diabetes Educators (AADE). The Diabetes Educator 2003; 29 (5):818-24.

[35] Sustainability conference [Internet]. San Antonio (TX): Family Health Foundation; 2001 [cited 2006 Nov 01]. Available from http://www.famhealth.org/new_page_3.htm.

[36] HB95 (125th General Assembly); under this act, the Board of Nursing was given the authority to develop and implement a certification program for community health workers and began issuing certificates in February, 2005.

- Three States passed bills mandating studies of the State CHW workforce; they were released in New Mexico (2003),[37] Virginia (2006),[38] and Massachusetts (2005).[39]
- In 2003, the University of Arizona (Project Jump Start), supported by the U.S. Department of Education, Fund for Improvement of Post Secondary Education (FIPSE), began the development of a standardized CHW educational program.[40] A follow-up project, the CHW National Education Collaborative, was funded by FIPSE in 2004.[41]
- The Institute of Medicine's 2003 report on reducing health disparities made recommendations regarding CHW roles.[42]
- A major study in 2003 by Brandeis University recommended a central CHW role in demonstration projects to address disparities in cancer prevention and treatment.[43] The study led to the funding of six demonstration sites for cancer Patient Navigator services to minority Medicare recipients.[44]
- The Federal Office of Minority Health and the Agency for Healthcare Research and Quality discussed the CHW role in culturally sensitive interventions in their 2004 research agenda on cultural competence.[45]
- In June 2005, a Patient Navigator bill was signed into law as the first major CHW legislation adopted at the Federal level.[46]
- In 2006, the Office of Management and Budget solicited public comment on changes to be considered for the existing Standard Occupational Classification system that may include "community health worker" as an occupation. The revision will be completed by the end of 2008.[47] Comments were submitted by the public recommending the creation of a new code for community health workers as a distinct occupation.[48]

---

[37] New Mexico Department of Health. Senate Joint Memorial 076 Report on the Development of a Community Health Advocacy Program in New Mexico. Santa Fe (NM): Department of Health, November 24, 2003.
[38] Virginia Center for Health Outreach. Final Report on the Status, Impact, and Utilization of Community Health Workers. Richmond (VA): James Madison University, Institute for Innovation in Health Human Services, 2006.
[39] MDPH (2005).
[40] Proulx DE, Collier N. Project Jump Start Curriculum Guidebook. Tucson, AZ: University of Arizona, 2003.
[41] Welcome [Internet]. Tucson (AZ): Community Health Worker National Education Collaborative (CHW-NEC); 2005 [updated 2006/cited 2006 Nov 01]. Available from http://www.chw-nec.org/bg.cfm.
[42] Finding 5-2 and Recommendation 5-10; Smedley BD, Stith AY, Nelson AR, editors. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington (DC): Institute of Medicine, National Academies Press; 2003.
[43] Cancer Prevention and Treatment Demonstration for Ethnic and Racial Minorities. Baltimore (MD): U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, 2003.
[44] CMS Selects Sites For Demonstration Seeking Ways to Reduce Disparities in Cancer Health Care [Internet]. Baltimore (MD): U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services; 2006 [updated 2006 Mar 24/cited 2006 Nov 01]. Available from http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=1816.
[45] Report: Setting the Agenda for Research on Cultural Competence in Health Care [Internet]. Rockville (MD): U.S. Department of Health and Human Services, Office of Minority Health; 2004 [updated 2006 Jul 07/cited 2006 Nov 01]. Available from http://www.omhrc.gov/templates/content.aspx?ID=86&lvl=3&lvlID=254.
[46] HR 1812 Patient Navigator Outreach and Chronic Disease Prevention Act of 2005.
[47] Office of Management and Budget. Standard Occupational Classification-Revision for 2010; Notice. Fed Regist 2006; 71 (94).
[48] SkillWorks, The Boston Community Health Worker Initiative, Full Partnership - August 17, 2006 Minutes [Internet]. Boston (MA): Boston Community Health Worker Initiative (BCHWI); 2006 [updated 2006 Apr 17/cited 2006 Nov 02]. Available from http://www.bostonabcd.org/programs/documents/FullPartnersminutes08-17-06.doc.

- A 2-year grant from the Robert Wood Johnson Foundation to the Georgetown University Law Center to create a national network of CHWs began on August 1, 2006.

Chapter 3. The Community Health Worker Workforce

There are no official estimates of the number of community health workers (CHWs) in the United States because there is no specific occupational code to report them in national databases.[1]

Until now, CHWs have been counted in official reports under existing occupations that have similar but not equivalent job descriptions. The distinguishing CHW roles are those enhancing outreach and effectiveness of health services to underserved communities.

An appropriate definition of the CHW occupation for its inclusion in national statistics is now being considered. Comments were submitted by the public to the Office of Management and Budget recommending the creation of a new Standard Occupational Classification (SOC) code for community health workers. As the job descriptions that define the community health worker occupation are better understood and documented, it is possible to estimate the CHW workforce from existing data with greater confidence.

Size of the Workforce: National and State Estimates

After making an assessment of the occupations that were likely to have been used as proxies for community health worker activities in reports to the Bureau of Labor Statistics and the Census Bureau and of the percent of individuals in those occupations likely to be CHWs, estimates were made of volunteer and paid CHWs in each of the 50 States.[2] The occupations included in the estimates were counseling, substance abuse, educational-vocational counseling, health education, and other health and community services. CHWs were estimated to be from 5 percent to 40 percent of the workers engaged in these occupations and they were either wage earners (67 percent)[3] or volunteers (33 percent) in not-for-profit and for-profit organizations such as schools, universities, clinics, hospitals, physician offices, individual-family-child services and educational programs.

---

[1] Data on the American workforce are collected by Federal and State agencies using the 2000 Standard Occupational Classification (SOC) System, which provides a means to compare occupational data across agencies. In the SOC, all workers are classified into one of more than 820 occupations according to their occupational definition. A job description -- indicating job duties, skills, education or experience required to perform that job -- explains each occupation. The SOC does not contain a "community health worker" code and job description. Consequently, CHWs have been undetected by official National and regional data collection programs and, since, by law, all paid employees must be reported by employers, CHWs have been counted under existing occupational classifications. Individuals filling out U.S. Census Bureau questionnaires have been describing their activities as community health workers, which later have been coded under an existing SOC code.

[2] The codes used to identify CHWs from the two data sets were chosen by matching job descriptions of CHW activities in the relevant literature with those in the 2000 SOC system, by asking experts, and by using information gathered in conducting the CHW employer inventory described later in this chapter. The results reported in this study are based on the 2000 Staffing Patterns data collected by the U.S. Bureau of Labor Statistics (BLS) and the Public Use Microdata Data Sample (PUMS, 2000) collected by the U.S. Census Bureau. Estimates of paid CHWs were made using both the Census and the BLS data sets. Estimates of volunteer CHWs were made using the findings from the CHW National Employer Inventory conducted for this study and described later in this chapter. The estimates for the Nation, using the two independent data sources, differed only by 6.1 percent. Larger differences were found for some single States. The totals shown in Table 3.1 are an average of estimates from the two data sets. In Appendix B, the methodology of the estimates is described in detail.

[3] CHW National Employer Inventory (CHW/NEI) (2006).

The estimates, shown in Table 3.1, indicate that in the year 2000 there were approximately 86,000 community health workers assisting American communities. California and New York were home to about 9,000 and 8,000 CHWs, respectively. Texas, Florida, and

Table 3.1 Estimates of Paid and Volunteer CHWs in the United States by States and Census Regions

Census Region and State	Paid CHWs	Volunteer CHWs	Total CHWs*	Rank by Total CHWs
United States	**57,571**	**28,308**	**85,879**	
Northeast	*14,505*	*4,246*	*18,749*	
Connecticut	841	36	877	31
Maine	454	95	549	39
Massachusetts	2,001	440	2,441	10
New Hampshire	373	293	665	35
New Jersey	1,499	45	1,543	18
New York	5,889	2,350	8,239	2
Pennsylvania	2,962	658	3,620	5
Rhode Island	240	303	543	40
Vermont	246	26	271	48
Midwest	*13,115*	*6,929*	*20,041*	
Illinois	2,528	993	3,520	6
Indiana	960	375	1,335	21
Iowa	600	338	938	27
Kansas	520	370	890	30
Michigan	1,807	917	2,724	9
Minnesota	1,403	517	1,920	13
Missouri	1,022	774	1,796	15
Nebraska	437	437	873	32
North Dakota	176	360	536	41
Ohio	2,219	1,285	3,503	7
South Dakota	154	60	213	50
Wisconsin	1,289	504	1,793	16
South	*17,470*	*10,221*	*27,687*	
Alabama	617	274	892	29
Arkansas	496	308	804	34
Delaware	157	62	218	49
District of Columbia	410	162	572	37
Florida	2,650	1,556	4,205	4
Georgia	1,364	1,886	3,250	8
Kentucky	733	197	930	28
Louisiana	748	723	1,471	19

Census Region and State	Paid CHWs	Volunteer CHWs	Total CHWs*	Rank by Total CHWs
South (continued)				
Maryland	1,310	544	1,853	14
Mississippi	390	440	830	33
North Carolina	1,410	557	1,967	12
Oklahoma	606	431	1,037	25
South Carolina	665	429	1,093	24
Tennessee	884	349	1,233	22
Texas	3,098	1,879	4,976	3
Virginia	1,515	210	1,725	17
West Virginia	417	214	631	36
West	*12,495*	*5,166*	*17,657*	
Alaska	209	89	298	46
Arizona	882	62	944	26
California	6,178	3,149	9,327	1
Colorado	896	551	1,447	20
Hawaii	272	30	302	45
Idaho	287	52	339	43
Montana	253	28	281	47
Nevada	234	99	333	44
New Mexico	497	74	571	38
Oregon	796	433	1,229	23
Utah	368	56	423	42
Washington	1,522	500	2,021	11
Wyoming	101	43	143	51

Source: U.S. Bureau of Labor Statistics (2000); Census Public Use Microdata Data Sample (2000); CHW National Employer Inventory (CHW/NEI) (2006).
*May not sum to total because of rounding and adjustments made for the estimates of volunteer CHWs.

Pennsylvania had a workforce between 3,500 and 5,000 CHWs each. The States of Illinois, Ohio, and Georgia had, in that order, a CHW workforce of 3,520, 3,503, and 3,250. Ten States employed approximately 2,000 CHWs each, 7 States about 1,000 CHWs and the remaining 25 States, as well as the District of Columbia, only several hundred CHWs each. The distribution among the four Census regions was: 22 percent of total CHWs in the Northeast, 24 percent in the Midwest, 33 percent in the South, and 21 percent in the West. The methodology employed to produce these estimates is described in detail in Appendix B.

Who are the Community Health Workers?

Personal and professional characteristics of CHWs were assessed through a never-before-attempted CHW National Employer Inventory (CHW/NEI) in all 50 States. A list of contacts (2,500), verified through phone calls, received letters of invitation and appropriate reminders to participate in the survey. The CHW/NEI – not a sample survey, impossible since an official count of all employers of CHWs had never been made –

represents the most comprehensive and systematic effort to date of contacting, in every State, as many organizations employing CHWs as possible. A response rate of 36 percent (900 respondents) yielded the first detailed national- and State-specific information on CHWs and their activities.[4] Table 3.2 displays key demographic indicators of CHWs and Table 3.3 the wages earned by CHWs. The findings from the CHW/NEI did not contradict the information extracted from the extensive review of the literature conducted for this study.[5]

Table 3.2 Demographic Characteristics of CHWs

Race and Ethnicity -- N=504	**Total CHWs**	**Paid**	**Volunteer**
American Indian/Alaskan Native	5.0	7.0	0.5
Asian/Pacific Islander	4.6	5.9	1.8
Black/African-American	15.5	14.9	16.8
Hispanic	35.2	37.3	30.8
Non-Hispanic White	38.5	33.8	48.3
Other	1.2	1.1	1.4
Age -- N=488			
Less than 30	25.4	23.8	28.4
30 to 50	54.8	59.5	46.1
Over 50	19.8	16.7	25.5
Gender -- N=495			
Female	81.6	85.7	72.0
Male	18.4	14.3	28.0

[4] The online CHW/NEI was conducted in partnership with the Center for Sustainable Health Outreach (CSHO) of The University of Southern Mississippi, which, independently from this study, had begun working on a National Inventory of CHW Programs. The research team at The Regional Center for Health Workforce Studies (RCHWS) of The University of Texas Health Science Center at San Antonio developed and implemented an extensive verification and enhancement protocol to refine the original list of contacts provided by CSHO, which took responsibility for sending invitations and reminders and making follow-up calls. The tabulation of the responses were made specifically and exclusively for this study. The Inventory process is included in Appendix C and a copy of the questionnaire is available in Appendix D.

[5] Love MB, Gardner K. The Emerging Role of the Community Health Worker in California. Results of a Statewide Survey and San Francisco Bay Area Focus Groups on the Community Health Workers in California's Public Health System. Community Health Works of San Francisco, California Department of Health Services, 1992; Rosenthal EL, Wiggins N, Brownstein JN et al. The Final Report of the National Community Health Advisor Study. Tucson (AZ): University of Arizona, 1998; Virginia Center for Health Outreach. Community Health Advisor/Worker Program Survey. Harrisonburg (VA): James Madison University, June 2002; New Mexico Department of Health. Senate Joint Memorial 076 Report on the Development of a Community Health Advocacy Program in New Mexico. Santa Fe (NM): Department of Health, November 24, 2003; Prince JA. Job Market Assessment of Family Health and Support Workers: Hillsborough, Orange and Pinellas Counties Maternal and Child Services - Workforce Development Program, The Lawton and Rhea Chiles Center for Healthy Mothers and Babies, Hillsborough Community College, and St. Petersburg College, October 2003; Cowans S. Bay Area Community Health Worker Study. [HED 892 - Final Report]. San Francisco (CA): San Francisco State University, 2005. 29 p; Keane D, Nielsen C, Dower C. Community health workers and promotores in California. San Francisco (CA): UCSF Center for the Health Professions, 2004; Massachusetts Department of Public Health. Community Health Workers: Essential to Improving Health in Massachusetts, Findings from the Massachusetts Community Health Worker Survey. Boston (MA): Division of Primary Care and Health Access, Bureau of Family and Community Health, Center for Community Health, March 2005; Community Health Workers in Texas Demographic Data. Austin (TX): Texas Department of State Health Services, March 2006.

Education -- N=481	**Total CHWs**	**Paid**	**Volunteer**
Less than High School	7.4	4.7	13.5
High School, GED	34.8	34.4	35.6
Some College	20.3	22.4	15.8
Two-year Degree	6.8	7.0	6.4
Four-year+ Degree	30.7	31.6	28.8

Source: CHW/NEI (2006).

Table 3.3 Wages of CHWs

Hourly Wages*	**New hires** N=387	**Experienced workers** N=341
Less than $7.00 ($14,539 or less yearly)	3.4	0.6
$7.00 - $8.99 ($14,560 - $18,699 yearly)	13.4	2.9
$9.00 - $10.99 ($18,720 - $22,859 yearly)	23.8	10.6
$11.00 - $12.99 ($22,880 - $27,019 yearly)	23.0	15.8
$13.00 - $14.99 ($27,040 - $31,179 yearly)	15.8	21.1
$15.00 or more ($31,200 or more yearly)	20.7	49.0

Source: CHW/NEI (2006).

* Wages reflect data for the first of up to five job titles reported by employers. Minimum is wage for new hire and maximum is top range for experienced CHWs.

The majority of individuals engaged in community health worker activities at the organizations responding to the CHW/NEI were either Hispanic or Non-Hispanic White (35 and 39 percent, respectively). The next largest groups were African-Americans (15.5 percent), Native Americans (5.0 percent) and Asian and Pacific Islanders (4.6 percent). Volunteer and paid CHWs had a similar racial and ethnic distribution with a somewhat higher relative proportion of Non-Hispanic Whites in the volunteer group.

The employers responding to the CHW/NEI indicated that a majority of CHWs (55 percent) working for them were predominately female (82 percent) between the ages of 30 and 50. One-fourth of the workforce was younger than 30 and one-fifth was older than 50. Volunteers were more numerous in the older groups.

More than one-third of all employed and volunteer community health workers had a high school education (35 percent), about one-fifth had completed some college work (20 percent), and almost one-third had at least a 4-year college degree (31 percent). Paid and volunteer CHWs were similar across levels of educational attainment with two exceptions: (1) more volunteers (13.5 percent) had less than a high school diploma than paid CHWs and (2) more paid workers had completed some college (22 percent) than their volunteer counterparts.

CHW positions have often been described as low-wage. However, the employers responding to the CHW/NEI survey reported a range of substantially different compensation levels. Sixty-four percent of the positions paid new hires an hourly wage

below $13, only 3.4 percent of them paid at or near the minimum wage (under $7 per hour), and 21 percent paid $15 per hour or more. The majority of experienced CHWs (70 percent) received an hourly wage of $13 or more and about half of them (49 percent) received more than $15 per hour, indicating that longevity and/or experience received economic recognition.

Additional relevant information on CHW wages was found in the literature. According to the Massachusetts Department of Public Health (MDPH), in 2004, the average yearly income for CHWs was approximately $23,000 yearly, $6,000 less than the average for that State.[6] The same report indicated that CHW salaries did not increase proportionally to educational level, work experience, or tenure. In California, a 1998 survey of health care providers in the San Francisco Bay Area revealed that 26 percent of full-time CHWs earned less than $20,000 a year, 44 percent earned between $20,001 and $25,000, 20 percent earned between $25,001 and $30,000, and 10 percent earned more than $30,000.[7] Data from a 1999 multi-State research project reported the compensation of CHWs as ranging from $8,880 to $39,860 annually.[8] Similar annual earnings were documented in a 2003 job market assessment completed in Florida, with entry-level salaries between $17,170.98 and $27,580.89, and an average annual salary of $22,376.[9] A 2002 Virginia survey reported CHW median hourly wages of $10.50.[10] Job postings revealed that State and local health departments in Maryland paid CHWs a range of $20,894 to $32,093,[11] and a "Health Worker III" in San Francisco with a minimum of two years' experience, holding a position similar to that of a CHW's, was paid $1,702 to $2,069 biweekly or $44,252 to $53,794 annually.[12]

The CHW/NEI found that the majority of employers were paying employment benefits to their CHW personnel. The most common were mileage reimbursement (76 percent of employers); health insurance and sick leave (71 percent each); vacation accrual (68 percent); personal leave (56 percent); and a pension or retirement plan (54 percent). Tuition assistance and educational leave benefits were reported by 31 percent and 16.9 percent of employers, respectively. These findings confirm reports from the literature.[13] However, in Massachusetts, many of the CHWs indicated that health insurance was not provided as part of their positions, and 53 percent of the CHWs in New Mexico relied on public health insurance or had no health insurance coverage.[14]

---

[6] MDPH (2005).
[7] Love MB, Gardner K, Legion V. Community health workers: who they are and what they do. Health Educ Behav 1997; 24 (4):510-22.
[8] Zuvekas A, Nolan L, Tumaylle C et al. Impact of community health workers on access, use of services, and patient knowledge and behavior. J Ambulatory Care Manage 1999; 22 (4):33-44.
[9] Prince JA (2003).
[10] VCHO (2002).
[11] Community Health Outreach Worker II (0206) [Internet]. Baltimore (MD): Office of Human Resources, Maryland Department of Health and Mental Hygiene; 1996 [updated 2006 Jul 14/cited 2006 Oct 19]. Available from http://www.dhmh.state.md.us/testingserv/html/opencont/0206.htm.
[12] San Francisco Department of Public Health: Employment Opportunities [Internet]. San Francisco (CA): Department of Public Health, City and County of San Francisco; 2005-2006 [updated 2006 Oct 19/cited 2006 Oct 20]. Available from http://www.dph.sf.ca.us/emplymnt/genljobs.htm#500Class.
[13] Prince JA (2003); Cowans S (2005).
[14] MDPH (2005); NMDH (2003).

How CHWs are Utilized

The utilization of community health workers was found to reflect the definition of their role in the health care delivery system included in Chapter 1.

> *Community health workers are lay members of communities[15] who work either for pay or as volunteers in association with the local health care system in both urban and rural environments and usually share ethnicity, language, socioeconomic status, and life experiences with the community members they serve. They have been identified by many titles such as community health advisors, lay health advocates, "promotores(as),"[16] outreach educators, community health representatives, peer health promoters, and peer health educators. CHWs offer interpretation and translation services, provide culturally appropriate health education and information, assist people in receiving the care they need, give informal counseling and guidance on health behaviors, advocate for individual and community health needs, and provide some direct services such as first aid and blood pressure screening.*

Drafting an operational definition of the CHW occupation has presented challenges because these health workers have been engaged with different job titles in different models of care.[17] Titles and models of care ranged from those of volunteer workers

---

[15] The term "community" is used in a geographic sense describing people living together in a particular area as small as, but not necessarily limited to, a neighborhood, who have some common characteristics and are unified by common interests.

[16] The terms *promotores* and *promotoras* are used in Mexico, Latin America, and Latino communities in the United States to describe advocates of the welfare of their own community who have the vocation, time, dedication and experience to assist fellow community members in improving their health status and quality of life. Recently, the term has been used interchangeably, despite some opposition, with the term community health workers.

[17] Eng E, Young R. Lay health advisors as community change agents. Fam Community Health 1992; 15 (1):24-40; Friedman AR, Butterfoss FD, Krieger JW et al. Allies community health workers: bridging the gap. Health Promot Pract 2006; 7 (2 Suppl):96S-107S; Nichols DC, Berrios C, Samar H. Texas' community health workforce: from state health promotion policy to community-level practice. Prev Chronic Dis [Serial Online] 2005; 2:1-7; Love MB et al. (1992); Blue Cross Foundation. Critical Links: Study Findings and Forum Highlights on the Use of Community Health Workers and Interpreters in Minnesota. Eagan (MN): Blue Cross and Blue Shield of Minnesota Foundation, 2003; Brownstein JN, Bone LR, Dennison CR et al. Community health workers as interventionists in the prevention and control of heart disease and stroke. Am J of Prev Med 2005; 29 (5S1):128-33; Swider S. Outcome effectiveness of community health workers: an integrative literature review. Public Health Nurs 2002; 19 (1):11-20; Nemcek MA, Sabatier R. State of evaluation: community health workers. Public Health Nurs 2003; 20 (4):260-70; Andrews JO, Felton G, Wewers ME et al. Use of community health workers in research with ethnic minority women. J Nurs Scholarsh 2004; 36 (4):358-65; Health Resources and Services Administration. A literature review and discussion of research studies and evaluations of the roles and responsibilities of community health workers (CHWs). Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, July 5, 2002; Lewin SA, Dick J, Pond P et al. Lay health workers in primary and community health care. Cochrane Database of Systematic Reviews, 2005; Norris SL, Chowdhury FM, Van Le K et al. Effectiveness of community health workers in the care of persons with diabetes. Diabet Med 2006; 23 (5):544-56; Pew Health Professions Commission. Community Health Workers: Integral Yet Often Overlooked Members of the Health Care Workforce. San Francisco (CA): University of California Center for the Health Professions, 1994; MDPH (2005); Witmer A, Seifer SD, Finocchio L et al. Community health workers: integral members of the health care work force. Am J Public Health 1995; 85 (8 part 1):1055-8; Alcalay R, Alvarado M, Balcazar H et al. Salud para su corazon: a community-based Latino cardiovascular disease prevention and outreach model. J Community Health 1999; 24 (5):359-79.

seeking general improvement of community health status[18] to those of outreach workers with the specific mission of reducing the impact of a single illness such as diabetes or HIV/AIDS in individuals or entire communities.[19] The common traits among these diverse roles 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.

In an article in the American Journal of Preventive Medicine, researcher John McKnight[20] explained that to achieve and maintain health, it is necessary to have the harmonious operation of two systems. The health care system produces units of service and relies on control and evidence-based accountability to achieve its ends of preventing and treating disease, but only the community itself (the second "system") can produce the self-motivation and supportive relationships needed to actually produce and maintain health.[21]

The harmonious operation of the two systems is particularly challenging in underserved environments, and CHWs were found to be capable of facilitating their interactions. In the following pages, the current utilization of volunteer and paid community health workers is described.

Programs with volunteer CHWs

Programs employ volunteer CHWs for different reasons and these determine how the volunteers are utilized. Programs can be classified under three models.

The grassroots organization model: Grassroots community-based initiatives often have been faith-based, and have had either a broad goal, such as helping welfare families to become self-sufficient and to adopt healthy behaviors, or narrow purposes such as supporting HIV-positive individuals or substance abusers. Because of their origins, many of these models have not been well documented. An exception is the network of farmworker *comités* in California, supported by the Center for Community Advocacy. This model of community self-determination was featured in the design of the *Promotores Comunitarios*, a well-documented initiative funded in 2005 by the California

[18] Many interest groups such as the Community Health Worker Special Primary Interest Group (CHW SPIG) of the American Public Health Association give, in defining the CHW occupation, special emphasis to CHWs as "frontline public health workers" and to their impact on "building individual and community capacity" (in a recent recommended definition by the Policy Committee Chair, July 2006). Altpeter M, Earp JAL, Bishop C et al. Lay health advisor activity levels: definitions from the field. Health Educ Behav 1999; 26 (4):495-512.
[19] Altpeter M et al. (1999).
[20] McKnight JL. Two tools for well-being: health systems and communities. Am J Prev Med 1994; 10 (3 Suppl):23-5.
[21] McKnight contended that we need both "tools" – the health care system and community-based initiatives – to achieve and maintain health, as the health care system cannot *produce* health and the community must do that for itself. Health care systems need/want changes in client behavior – clients who utilize services appropriately, keep appointments, follow provider instructions and practice healthful behaviors; they also need better information in order to manage risk – information about the quality of care currently provided, emerging health problems in the population, and a better understanding of community-generated health risks. Communities need/want improved access to services, information and assistance on self-care and obtaining benefits, improvements in overall community conditions and individual/family opportunities, and a general sense of control over their environments.

Endowment in eight rural communities.[22] Another example was a multi-program initiative in rural Alabama built on community assessments and priority-setting organized by resident committees of volunteer CHWs.[23]

The lay health advisors model: This model is an outreach and/or health education effort, usually designed by university researchers or local health care providers, with "lay health advisors" or "natural helpers" as part of interventions involving the encouragement and support of naturally occurring community-based social networks. These models were aimed at durable changes in knowledge, attitudes, and behaviors that were more likely to occur when supported by communities' social networks.[24]

The program survival model: Programs with ambitious goals and budget constraints have been engaging volunteer CHWs to maximize program impact from limited resources. Some of these programs also employed paid CHWs as recruiters and supervisors of volunteer CHWs and often managed a paid and volunteer workforce.[25]

Table 3.4 shows the percent of employer respondents to the national Inventory who utilized only volunteers, only paid CHWs, or a combination of volunteers and paid CHWs.

[22] Rose D, Quade B. The Agricultural Worker Health and Housing Program: Informing the Community. Los Angeles (CA): The California Endowment, April 2006.
[23] Raczynski JM, Cornell CE, Stalker V et al. Developing community capacity and improving health in African American communities. Am J Med Sci 2001; 322 (5):269-75.
[24] Earp JA, Eng E, O'Malley MS et al. Increasing use of mammography among older, rural African American women: results from a community trial. Am J Public Health 2002; 92 (4):646-54; Erwin DO, Spatz TS, Stotts RC et al. Increasing mammography practice by African American women. Cancer Pract 1999; 7 (2):78-85; Burhansstipanov L, Dignan M, Wound D et al. Native American recruitment into breast cancer screening: the NAWWA Project. J Cancer Educ 2000; 15 (1):28-32; McQuiston C, Flaskerud JH. "If they don't ask about condoms, I just tell them": a descriptive case study of Latino lay health advisers' helping activities. Health Educ Behav 2003; 30 (1):79-96; Watkins EL, Harlan C, Eng E et al. Assessing the effectiveness of lay health advisors with migrant farmworkers. Fam Community Health 1994; 16 (4):72-87.
[25] Andersen M, Yasui Y, Meischke H et al. The effectiveness of mammography promotion by volunteers in rural communities. Am J Prev Med 2000; 18 (3):199-207; Barnes K, Friedman S, Namerow P et al. Impact of community volunteers on immunization rates of children younger than 2 years. Arch Pediatr Adolesc Med 1999; 153 (5):518-24; Brown SA, Garcia AA, Kouzekanani K et al. Culturally competent diabetes self-management education for Mexican Americans: the Starr County border health initiative. Diabetes Care 2002; 25 (2):259-68; Fernandez-Esquer ME, Espinoza P, Torres I et al. A su salud: a quasi-experimental study among Mexican American women. American Journal of Health Behavior 2003; 27 (5):536-45; Krieger J, Castorina J, Walls M et al. Increasing influenza and pneumococcal immunization rates: a randomized controlled study of a senior center-based intervention. Am J Prev Med 2000; 18 (2):123-31.

Table 3.4 Percent of Programs Employing Paid and Volunteer CHWs by Census Region

Census Region	Paid and Volunteer	Volunteer Only	Paid Only
Northeast	25.0	0.7	74.3
Midwest	22.4	6.0	71.6
South	23.1	9.2	67.7
West	32.6	4.1	63.2
U.S.	26.3	5.5	68.3

Source: CHW/NEI (2006).

CHWs' Activities and Roles

Work activities or job descriptions define occupations. The term "role" is used in this section to describe the specific models of care within which CHWs perform the "jobs" that are part of their occupation.[26] These models are described later in this section. Different classification schemes could have been used. The ones adopted here attempt to integrate many useful characteristics of previous analyses into one comprehensive format.

As shown in Table 3.5, the communities reported by employers as those where CHWs have been utilized included all ethnic and racial groups but, most often, Hispanic/Latino (as reported by 78 percent of the respondents), Black/African-American (68 percent), and Non-Hispanic White (64 percent). One-third of the respondents (32 and 34 percent, respectively) indicated that American Indian/Alaska Native and Asian/Pacific Islander communities have been receiving CHW services. The clients targeted most frequently were females and adults ages 18 to 49. Special populations receiving CHW services included the uninsured (as reported by 71 percent of respondents) followed by immigrants (49 percent), the homeless (41 percent), isolated rural residents and migrant workers (31 percent each), and *colonia* residents (9 percent).[27] Programs serving immigrants, migrant workers, and the uninsured were more likely than other types of programs to have volunteer CHWs.

[26] In the literature, the term "role" is also used as a synonym for "functions" or "activities." The semantic differences are noted and accounted for in reporting the findings from the literature review.

[27] The term *colonia* and its plural, *colonias,* mean, in Spanish, community(ies) or neighborhood(s). In the United States, these terms are being used to describe low-income or economically distressed residential areas along the United States/Mexico Border and in other regions in the country that may lack some of the most basic living necessities, such as potable water and sewer systems, electricity, paved roads, and safe and sanitary housing.

Table 3.5 Target Population of CHW Activities by Percent of Respondents

Race/Ethnicity N=587	**Paid Only**	**Volunteer Only**	**Paid and Volunteer**	**Total**
American Indian/Alaskan Native	33.3	11.8	34.4	32.4
Asian/Pacific Islander	35.9	11.8	34.4	34.1
Black/African-American	70.5	58.8	64.4	68.1
Hispanic/Latino	76.3	76.5	81.9	77.9
Non-Hispanic White	65.1	38.2	67.5	64.2
Other	20.6	17.6	19.4	20.1
Gender N=587				
Female	92.6	97.1	92.5	92.8
Male	77.1	76.5	85.0	79.2
Transgendered	23.4	8.8	34.4	25.6
Age groups N=587				
Younger than 1	51.1	23.5	39.4	46.3
1-5	54.2	29.4	46.3	50.6
6-12	48.6	35.3	54.4	49.4
13-17	70.2	50.0	66.3	68.0
18-21	81.4	88.2	78.8	81.1
22-49	81.4	91.2	83.8	82.6
50-64	61.6	76.5	71.9	65.2
65 and older	52.9	73.5	64.4	57.2
Special Population N=587				
Immigrants	48.2	58.8	47.7	48.7
Migrant workers	28.7	41.2	32.7	30.5
Isolated rural residents	28.7	32.4	37.9	31.4
Colonia residents	7.1	17.6	9.8	8.5
Homeless	40.0	26.5	45.1	40.6
Uninsured	68.2	82.4	73.9	70.5
Other	17.9	17.6	20.3	18.5

Source: CHW/NEI (2006); multiple responses permitted.

Table 3.6 lists the most frequently reported health issues for which employers chose interventions that included CHWs. Women's health and nutrition were reported by 46 and 48 percent of respondents, respectively. These issues were closely followed by child health and pregnancy/prenatal care (41 percent each), immunizations (37 percent), and sexual behavior (34 percent). Next, employers reported CHW interventions targeting specific illnesses such as HIV/AIDS (39 percent), diabetes (38 percent), high blood pressure (31 percent), cancer (27 percent), cardiovascular diseases (26 percent), and heart disease (23 percent). Programs dealing with cancer, cardiovascular disease, diabetes, and high blood pressure were more likely to have only volunteer CHWs than programs working with other conditions.

The work activities related to these interventions first involved culturally appropriate health promotion and health education (as reported by 82 percent of the respondents), followed by assistance in accessing medical and non-medical services and programs (84 and 72 percent, respectively) and complemented by "translating"[28] (36 percent), interpreting (34 percent), counseling (31 percent), mentoring (21 percent) and, more generally, social support (46 percent) and transportation (36 percent). Related to these work activities, employers reported specific duties such as case management (45 percent), risk identification (41 percent), patient navigation (18 percent),[29] and direct services (37 percent). Programs involving case management, direct services,[30] risk identification, and transportation were *less likely* to involve only volunteer CHWs than other programs.

Table 3.6 Health Problems Addressed and Services Provided by Percent of Respondents

Health Problems N=620	**Paid Only**	**Volunteer Only**	**Paid and Volunteer**	**Total**
Cancer	22.0	38.2	36.5	26.8
Cardiovascular disease	22.0	38.2	32.9	25.8
Child health	43.4	26.5	36.5	40.6
Diabetes	32.9	55.9	46.1	37.7
Heart disease	19.6	38.2	28.7	23.1
High blood pressure	27.9	44.1	37.1	31.3
HIV/AIDS	35.8	17.6	52.1	39.2
Immunizations	39.6	23.5	32.9	36.9
Infant health	40.3	20.6	35.3	37.9
Nutrition	46.8	55.9	47.9	47.6
Obesity	31.0	32.4	38.3	33.1
Physical activity	27.2	38.2	29.3	28.4
Pregnancy, prenatal care	43.7	20.6	38.3	41.0
Sexual behavior	31.0	17.6	44.3	33.9
Women's health	44.9	29.4	52.1	46.0
Services N=596				
Assist in accessing medical services/programs	85.0	85.3	82.7	84.4
Assist in accessing non-medical services/programs	71.5	67.6	72.8	71.6
Build community capacity	30.8	38.2	44.4	34.9
Build individual capacity	33.8	52.9	48.1	38.8
Case management	46.3	32.4	44.4	45.0
Community advocacy	50.0	52.9	60.5	53.0
Counsel	29.8	20.6	34.6	30.5
Cultural mediation	17.8	29.4	16.0	18.0
Interpretation	33.5	35.3	33.3	33.6
Mentor	18.8	11.8	27.2	20.6
Patient navigation	16.0	29.4	19.8	17.8
Provide culturally appropriate health promotion/education	81.3	79.4	83.3	81.7
Provide direct services	37.8	14.7	41.4	37.4

[28] As explained later in this chapter, "translation" services address both linguistic and cultural mediation.
[29] "Navigation" is a new term/work-activity that indicates specific guidance in using the health care system and which many respondents most likely considered a synonym of "assisting in accessing medical services."
[30] Examples include taking vital signs and blood pressure screenings.

Services (continued)	Paid Only	Volunteer Only	Paid and Volunteer	Total
Risk identification	39.8	17.6	48.8	40.9
Social support	43.3	52.9	50.6	45.8
Translation	36.5	26.5	35.2	35.6
Transportation	35.8	20.6	38.3	35.6
Other	10.3	5.9	12.3	10.6

Source: CHW/NEI (2006); multiple responses permitted.

The work activities listed in the Inventory questionnaire were the result of literature reviews, the judgment of individuals knowledgeable about CHWs, and field testing with employers and community health workers. A 2003 literature review of 18 programs[31] includes a list of CHW duties corresponding to specific health intervention strategies (Table 3.7) that complements the list of health issues in Table 3.6 by indicating the type of programs utilizing CHWs and providing examples of their duties.

Table 3.7 Program Component Description with Community Health Worker Duties

Program Component	Description	Community Health Workers' Duties (Example)
Outreach	Reaching persons and groups beyond and exceeding those customarily contacted	Case finding/locate cases; conduct health screening; schedule appointments; make follow-up calls; send reminder cards; refer as needed; staff mobile units; network in the community with peers
Culturally sensitive care	Use knowledge of language, cultural practices, beliefs, etc., to structure appropriate plan of care and strengthen therapeutic alliance	Translate language; link peers and professionals through liaison activities; develop/select culture-specific health materials for peers; establish/begin new services/programs; train health professionals on culture
Health education/ counseling	Impart knowledge and develop critical reasoning to enable health decision-making and to advise, recommend, suggest	Educate/counsel in groups or one on one; coordinate mass media campaigns: articles, newsletters, brochures, video, radio, etc.; develop and distribute resource guide
Health advocacy	Promote and encourage positive health behaviors among peers	Serve as role model; mentor; do crisis intervention; lobby
Home visits	Meet peers in their home, thus reducing barriers to care	Sojourn; evaluate home environments; give social support (and other duties, see above)
Health promotion/ lifestyle change	Employ behavior change strategies in group or individual meetings	Be a leader/coach
Perinatal care	Support perinatal health of mother and child during prenatal, delivery, and postpartum period	Provide outreach/early prenatal care, nutrition, parenting and child care
Transportation/homemaking	Provide health-related transportation; home chores	Drive/arrange for travel; help with cleaning/food preparation

Source: Nemcek MA et al. (2003, p.262).

[31] Nemcek MA et al. (2003).

Key areas of CHW activity

1. Creating more effective linkages between communities and the health care system

   Gathering information for medical providers. "Maternal-Child Health Advocates" worked in teams with a public health nurse in Chicago to identify health problems and health care deficits.[32]

   Educating medical and social service providers about community needs. CHWs in Ingham County, Michigan, identified the need for customizing primary care services to new enrollees in the Ingham Health Plan (IHP) and were empowered to use appointment slots dedicated to new enrollees, making the primary care system more user-friendly.[33]

   Translating literal and medical languages. Some bilingual "community health advisors" (CHAs) provided literal translation from one language to another or, more commonly, explained medical terms to patients. Actual interpretation during patient-provider encounters was viewed as potentially inappropriate for a CHW without rigorous training.[34]

2. Providing Health Education and Information

   Teaching basic concepts of health promotion and disease prevention. CHWs have been utilized effectively in delivering basic health messages in a culturally appropriate way. *Promotores(as)* in one migrant farmworker project were responsible for distributing protective eyewear and conducting regular eye safety trainings.[35] In one health promotion program emphasizing nutrition and physical activity for older women, each CHW worked with 20 participants whom they contacted every two weeks and motivated to join walking groups.[36]

   Helping to manage chronic illness. CHWs in one pediatric asthma demonstration[37] project participated in a standardized system of care based on the National Asthma

[32] Nacion KW, Norr KF, Burnett GM et al. Validating the safety of nurse-health advocate services. Public Health Nurs 2000; 17 (1):32-42.
[33] Mack M, Uken R, Powers JV. People improving the community's health: community health workers as agents of change. J Health Care Poor Underserved 2006; 17 (1 Suppl):16-25.
[34] Musser-Granski J, Carrillo DF. The use of bilingual, bicultural paraprofessionals in mental health services: issues for hiring, training, and supervision. Community Ment Health J 1997; 33 (1):51-60.
[35] Forst L, Lacey S, Chen HY et al. Effectiveness of community health workers for promoting use of safety eyewear by Latino farm workers. Am J Ind Med 2004; 46 (6):607-13.
[36] Staten LK, Gregory-Mercado KY, Ranger-Moore J et al. Provider counseling, health education, and community health workers: the Arizona WISEWOMAN project. J Women's Health (Larchmt) 2004; 13 (5):547-56; Staten LK, Taren DL, Howell WH et al. Validation of the Arizona activity frequency questionnaire using doubly labeled water. Med Sci Sports Exerc 2001; 33 (11):1959-67.
[37] Beckham S, Kaahaaina D, Voloch K-A et al. A community-based asthma management program: effects on resource utilization and quality of life. Hawaii Med J 2004; 63 (4):121-6.

Education and Prevention Program (NAEPP) Expert Panel Report Guidelines for the Diagnosis and Management of Asthma.[38]

3. Assisting and Advocating for Underserved Individuals to Receive Appropriate Services

Case finding. In one substance abuse program, CHWs were able to gain access to high-risk neighborhoods, recruit intravenous drug users (IDUs) as study participants, deliver educational interventions, and gather initial and follow-up data from participants in those neighborhoods, achieving a 75 percent completion rate for follow-ups.[39]

Helping clients to ask for and receive the services they need. This role was found to be especially important for mental health services.[40] Also, CHWs were reported to be effective in promoting the use of childhood immunization services. In one program, trained volunteer CHWs assisted identified families with referrals, provided reminders, and tracked clients to immunization services through home visits and telephone contacts.[41]

Making referrals. CHWs in a Seattle hypertension program identified at-risk individuals by conducting blood pressure screenings in community locations, providing referrals and appointment assistance, providing appointment reminders, and assisting in resolving barriers to obtaining care.[42]

Advocating for individuals. "Resource Mothers" (RM) in South Carolina recruited pregnant teens through community presentations and other outreach and became their advocates in obtaining the prenatal care they needed.[43]

Advocating for community needs. In one breast cancer screening program, volunteer "lay health advisors" (LHAs), supervised by paid CHWs, developed their own strategies for outreach to African-American women including training sessions for physician practices, community health centers, and local health departments.[44]

Providing follow-up. CHWs in one heart health program took over non-emergency cases with elevated blood pressure, took vital signs, provided education, and identified barriers to access and appointment keeping. CHW notes were recorded

[38] Peterson-Sweeney K, McMullen A, Yoos HL et al. Parental perceptions of their child's asthma: management and medication use. J Pediatr Health Care 2003; 17 (3):118-25.
[39] Birkel RC, Golaszewski T, Koman III JJ et al. Findings from the *horizontes* acquired immune deficiency syndrome education project: the impact of indigenous outreach workers as change agents for injection drug users. Health Educ Q 1993; 20 (4):523-38 (p.526).
[40] Musser-Granski J et al. (1997).
[41] Barnes K et al. (1999).
[42] Krieger J, Collier C, Song L et al. Linking community-based blood pressure measurement to clinical care: a randomized controlled trial of outreach and tracking by community health workers. Am J Public Health 1999; 89 (6):856-61.
[43] Rogers M, Peoples-Sheps M, Suchindran C. Impact of a social support program on teenage prenatal care use and pregnancy outcomes. J Adolesc Health 1996; 19 (2):132-40.
[44] Earp JA et al. (2002).

in the patients' charts. The CHWs also conducted telephone reminders of follow-up appointments.[45]

4. Providing Informal Counseling

Providing individual support. Self-efficacy, fostering individuals' or communities' capability to accomplish desired changes or actions, has been a key goal of the CHW's support function.[46] Maternal outreach worker programs such as North Carolina's "Baby Love Maternal Outreach Worker (MOW) Program" provided support during pregnancy, including encouragement of positive behaviors and development of parenting skills, and were found to reduce the occurrence of depression.[47]

Leading support groups. CHWs performed either clinic-based counseling sessions or home visits and discussion group sessions to provide direct support and encourage the use of the patient's immediate social network in following treatment regimens. These interventions produced significant and sustained improvements in appointment keeping and blood pressure control.[48] "Native Sisters," a volunteer CHW model with Native American women in the Denver area, focused on increasing breast cancer screening rates. This was carried out by having volunteers lead traditional social support circles.[49]

5. Directly Addressing Basic Needs

Providing limited clinical services. Some CHWs were trained in taking vital signs. Others were trained to provide first aid and CPR, an important service in remote rural areas. Community health representatives in the Indian Health Service have been cross-trained as emergency medical technicians.[50]

Meeting basic needs. A CHW-driven survey led to planning and implementation of a farmers' market that increased access to more healthful foods.[51]

---

[45] Bone LR, Mamon J, Levine DM et al. Emergency department detection and follow-up of high blood pressure: use and effectiveness of community health workers. Am J Emerg Med 1989; 7 (1):16-20.
[46] Satterfield D, Burd C, Valdez L et al. The "In-Between People": participation of community health representatives in diabetes prevention and care in American Indian and Alaska Native communities. Health Promotion Practice 2002; 3 (2):166-75.
[47] Navaie-Waliser M, Martin S, Tessaro I et al. Social support and psychological functioning among high-risk mothers: the impact of the Baby Love Maternal Outreach Worker Program. Public Health Nurs 2000; 17 (4):280-91.
[48] Morisky DE, Lees NB, Sharif BA et al. Reducing disparities in hypertension control: a community-based hypertension control project (CHIP) for an ethnically diverse population. Health Promotion Practice 2002; 3 (2):264-75.
[49] Burhansstipanov L et al. (2000).
[50] History | Significant Milestones [Internet]. Window Rock (AZ): Emergency Medical Services and Department of Information Technology, Navajo Nation; 2006 [updated 2006/cited 2006 Oct 24]. Available from http://www.navajoems.navajo.org/history.htm.
[51] Mack M et al. (2006).

6. Building Community Capacity in Addressing Health Issues

> *Building individual capacity.* CHWs practiced nonjudgmental listening, identification of the clients' resources, and step-by-step skills development leading to the clients' ability to advocate for their families.[52]
>
> *Building community capacity.* CHWs in one program were involved in community research and planning, directed educational services, and contributed to the development of grant proposals. The investigators suggested that this model of capacity-building could be translated into an application of "stages of change" theory.[53]

Models of Care Utilizing CHWs

The five prevailing models of care engaging CHWs and identified during this study were (1) member of care delivery team, (2) navigator, (3) screening and health education provider, (4) outreach/enrolling/informing agent, and (5) organizer. These models were not always mutually exclusive. This classification, like the one listing CHW activities, attempts to integrate other classification schemes.

(1) Member of care delivery team

In this model, the CHW was largely subordinate to a lead provider, typically a physician, nurse, or social worker. Tasks were relatively specific and generally delegated by the lead provider. This model was commonly applied to *case management.* The lead provider often was the "case manager of record." However, the CHW, in some cases, had considerable responsibility for coordination of care. The CHW's contribution in this model was that of a more efficient *vehicle* for certain team tasks such as patient-provider communication, including tracking patients with unreliable addresses, limited telephone access, or lack of transportation. A significant benefit sought from this model was the *enhanced productivity* of the medical team.[54]

In a diabetes program in Baltimore, CHWs made weekly contacts by phone or home visitations to reinforce treatment regimens and assure regular contact with primary care providers.[55] In another program, the CHWs' main responsibilities were to monitor participant and family behavior, reinforce adherence to prescribed regimens, and provide feedback. CHWs in a childhood immunization program located eligible families by reviewing medical records, maintained a tracking system on immunization status, and

[52] Becker J, Kovach AC, Gronseth DL. Individual empowerment: how community health workers operationalize self-determination, self-sufficiency, and decision-making abilities of low-income mothers. J Community Psychol 2004; 32 (3):327-42.
[53] Raczynski JM, Cornell CE, Stalker VG et al. A multi-project systems approach to developing community trust and building capacity. J Public Health Management Practice 2001; 7 (2):10-20.
[54] Meister JS. Community outreach and community mobilization: options for health at the U.S.-Mexico Border. Journal of Border Health 1997; 2 (4):32-8.
[55] Fedder DO, Chang RJ, Curry S et al. The effectiveness of a community health worker outreach program on healthcare utilization of West Baltimore City Medicaid patients with diabetes, with or without hypertension. Ethn Dis 2003; 13 (1):22-7.

used postcards, telephone reminders, and home visits with non-responsive parents. They managed a caseload averaging 300 children per worker.[56]

In another example, the CHW was the coordinator of health services for the patient. The CHWs' duties were to maintain regular contact with assigned patients and assist in developing care plans. CHWs assisted clients to resolve issues that created barriers to care.[57]

(2) Navigator

The navigator role placed greater emphasis on the CHW's capabilities for assisting individuals and families in negotiating increasingly complex service systems and for bolstering clients' confidence when dealing with providers.

The navigator model did not necessarily require a high degree of clinical supervision, but it did require a high level of awareness about the health care system. A contribution by CHWs in this model was that of improving access and educating consumers as to the importance of timely use of primary care.

Navigators for the Gateway to Care Collaborative in Houston, Texas, had specific goals of encouraging individuals to seek services at the lowest level of care appropriate to the health problem, utilize services that prevented disease, improve patient-provider communication, and reduce inappropriate emergency room visits. Navigators were also responsible for assisting individuals in developing family preventive care plans.[58]

(3) Screening and Health Education Provider

This model of care has been one of the more common, and was often included in many categorically funded initiatives on specific health conditions such as asthma and diabetes. CHWs taught self-care methods, administered basic screening instruments, and took vital signs.

CHWs were able to gain access to hard-to-reach populations and were willing to work in neighborhoods or rural areas where other professionals were reluctant to practice.[59]

There were concerns, however, about the quality of services and information provided by CHWs, resulting in calls for strict evaluation of the CHWs' training and close supervision

[56] Rodewald LE, Szilagyi PG, Humiston SG et al. A randomized study of tracking with outreach and provider prompting to improve immunization coverage and primary care. Pediatrics 1999; 103 (1):31-8.
[57] Humphry J, Jameson LM, Beckham S. Overcoming social and cultural barriers to care for patients with diabetes. Western Journal of Medicine 1997; 167 (3):138-44.
[58] What is a Navigator [Internet]. Houston (TX): Gateway to Care; 2000 [updated 2006 Oct 19/cited 2006 Sep 29]. Available from http://www.gatewaytocare.org/what_is_a_navigator.htm.
[59] Lacey L, Tukes S, Manfredi C et al. Use of lay health educators for smoking cessation in a hard-to-reach urban community. J Community Health 1991; 16 (5):269-82.

of their activities. Ohio's CHW certification regulations included standards for quality of care by CHWs.[60]

(4) Outreach/enrolling/informing agent

"Outreach worker" has been a common job title for CHWs, and it addressed the need of many programs to reach individuals and families who were eligible for benefits or services and to persuade them to apply for benefits or come to a provider location for care.

(5) Organizer

This model of care more often involved volunteers rather than paid CHWs. These volunteers became active in the community over a specific issue, promoting self-directed change and community development.[61]

[60] Chapter 4723-26 Community Health Workers [Internet]. Columbus (OH): Ohio Board of Nursing; 2005 [updated 2005 Feb 01/cited 2006 Sep 29]. Available from http://www.nursing.ohio.gov/Law_and_Rule.htm.
[61] Williams DM. La Promotora. Linking disenfranchised residents along the border to the U.S. health care system. Health Aff (Millwood) 2001; 20 (3):212-8; Barnes MD, Fairbanks J. Problem-based strategies promoting community transformation: implications for the community health worker model. Fam Community Health 1997; 20 (1):54-65; Mack M et al. (2006).

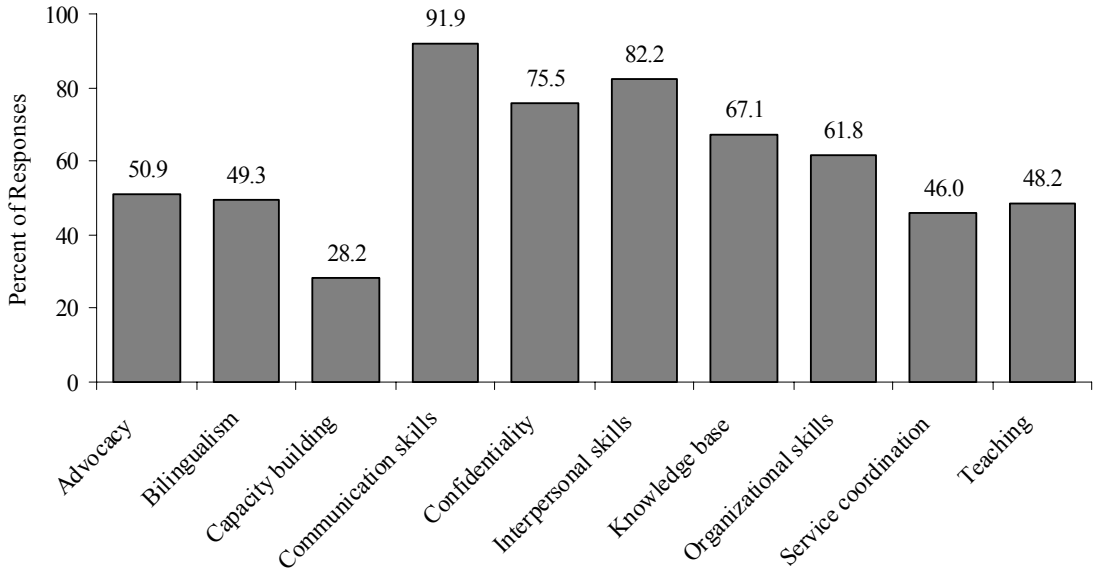
Chapter 4. Education and Training of CHWs

Employers hiring community health workers have been looking for individuals with some formal education, specific qualities, and certain skills. Also, while employers have provided post-employment training for general education and specific competencies, they have not always offered opportunities for a career as a CHW.

Requirements at Hiring

Communication skills, combined with the ability to create interpersonal relationships and maintain confidentiality, were considered by most organizations as essential attributes for a job as a CHW. Organizational skills, such as the ability to set goals, develop action plans, and keep records, were highly regarded as well. Also, almost half of the respondents to the CHW National Employer Inventory (CHW/NEI) placed value on bilingual abilities, the ability to coordinate service referrals, and adeptness in promoting and advocating family and community wellness (Figure 4.1).

Figure 4.1 CHW Skills Required by Employers at Hiring



Source: CHW National Employer Inventory (CHW/NEI) (2006), N=570

Language skills

Employers reported that the languages most often used by CHWs to communicate with clients were English and Spanish (87 and 70 percent of the respondents, respectively). Less than 10 percent of the employers reported the use of French, Vietnamese, and Chinese. Few (6.4 percent) reported the use of sign language and knowledge of tribal

languages (3.8 percent). Most of the employers surveyed and interviewed did not offer language training[1] and selected CHWs on the basis of their existing language competence.

Cultural competence

Cultural competence was defined in this study as "*the ability of understanding and working within the context of the culture of the community being served."* This definition was easily understood and agreed upon in field testing and by employers interviewed in the four States selected for further study. However, responses were mixed as to whether cultural competence required that the CHW be a resident of the area being served.[2] The issue is related to the degree of diversity of the population. In New York City alone, out of 2,217 Census tracts, those defined as including highly diverse cultures increased from 70 in 1970 to 220 in 2000.[3] While reliance on one's culture of origin has been effective in narrow-focus, grant-funded projects targeting persons of similar ethnic or cultural heritage, broader-purpose community or clinic-based programs require that CHWs interact effectively with persons of different cultural backgrounds. Also, relying on CHWs from different communities might be necessary in smaller areas where candidates with the required CHW skills may be scarce.[4] In conclusion, while CHWs were generally hired for their "insider" status and their understanding of underserved populations,[5] employers were ambivalent about the importance of CHWs sharing place of residence with the clients they assisted.

Education

About half of employers responding to the "CHW education" component of the National Employer Inventory (N=487) questionnaire had educational or training requirements for CHW positions. Twenty-one percent mentioned that at least a high school diploma or GED was expected. A Bachelor's Degree was a prerequisite to employment in 32 percent of the organizations.

Training During Employment

Most employers required post-hire training of CHW personnel.[6] Two types of training were commonly offered. One was aimed at reinforcing or standardizing the level of

[1] CHW National Employer Inventory (CHW/NEI) (2006); CHW National Workforce Study Interviews (CHW/NWSI) (2006).
[2] CHW/NWSI (2006).
[3] Berger J. Brooklyn's Technicolor Dream Quilt. New York Times 2005 May 29:33.
[4] Health Resources and Services Administration. Impact of community health workers on access, use of services, and patient knowledge and behavior. Bureau of Primary Health Care, Health Resources and Services Administration, U.S. Department of Health and Human Services 1998.
[5] Love MB, Legion V, Shim JK et al. CHWs get credit: a 10-year history of the first college-credit certificate for community health workers in the United States. Health Promotion Practice 2004; 5 (4):418-28.
[6] CHW/NWSI (2006); CHW/NEI (2006).

competence of the CHW personnel in the skills required at the time of hiring[7] and the other focused on the acquisition of competencies needed for specific programs.[8] The degree to which employer-based training emphasized enhancing the generic skills of CHWs, versus developing special competencies, varied.[9]

Instruction to reinforce CHW cultural awareness, interpersonal communication, and client advocacy was offered by 80, 70, and 59 percent of respondents, respectively (N=518). Training in being a CHW (60 percent) and in leadership skills (38 percent) indicated that health organizations recognized a distinctive CHW role in health service delivery. Many employers required the acquisition of special competencies for addressing specific health issues and diseases (79 and 64 percent) such as asthma,[10] cardiovascular disease (CVD),[11] genetic screening and services,[12] or colorectal cancer.[13] Also, training was required in understanding medical and social services (55 and 73 percent), coordinating access to services, home visiting and patient "navigation" (53, 47, and 41 percent), providing health education and counseling (59 percent), and administering first aid and CPR (40 percent).

Training was administered either as continuing education (68 percent) with classroom instruction (32 percent) or through mentoring (47 percent) and on-site technical assistance (43 percent). The length of training reported ranged from nine to 100 hours.[14]

A recent initiative, the Community Health Worker National Education Collaborative[15] (CHW-NEC) funded by the U.S. Department of Education, has convened 21 institutions of higher education to arrive at a consensus on a standard curriculum for entry-level preparation of CHWs based on a "core basic-competency" definition for this workforce. The project is scheduled for completion in September 2007.

---

[7] CHW/NWSI (2006).

[8] Humphry J, Jameson LM, Beckham S. Overcoming social and cultural barriers to care for patients with diabetes. Western Journal of Medicine 1997; 167 (3):138-44; Rosenthal EL, Wiggins N, Brownstein JN et al. The Final Report of the National Community Health Advisor Study. Tucson (AZ): University of Arizona, 1998.

[9] Ireys HT, Chernoff R, DeVet KA et al. Maternal outcomes of a randomized controlled trial of a community-based support program for families of children with chronic illnesses. Arch Pediatr Adolesc Med 2001; 155 (7):771-7.

[10] Love MB, Gardner K. The Emerging Role of the Community Health Worker in California. Results of a Statewide Survey and San Francisco Bay Area Focus Groups on the Community Health Workers in California's Public Health System. Community Health Works of San Francisco, California Department of Health Services, 1992.

[11] Brownstein JN, Bone LR, Dennison CR et al. Community health workers as interventionists in the prevention and control of heart disease and stroke. Am J of Prev Med 2005; 29 (5S1):128-33.

[12] Bridge M, Iden S, Cunniff C et al. Improving access to and utilization of genetic services in Arizona's Hispanic population. Community Genetics 1998; 1 (3):166-8.

[13] Campbell MK, James A, Hudson MA et al. Improving multiple behaviors for colorectal cancer prevention among African American church members. Health Psychol 2004; 23 (5):492-502.

[14] Campbell MK et al. (2004); DePue JD, Wells BL, Lasater TM et al. Volunteers as providers of heart health programs in churches: a report on implementation. Am J Health Promot 1990; 4 (5):361-6; Iryes HT et al. (2001); Lam TK, McPhee SJ, Mock J et al. Encouraging Vietnamese-American women to obtain Pap tests through lay health worker outreach and media education. J Gen Intern Med 2003; 18 (7):516-24; Quinn MT, McNabb WL. Training lay health educators to conduct a church-based weight-loss program for African American women. Diabetes Educ 2001; 27 (2):231-8; Krieger J, Collier C, Song L et al. Linking community-based blood pressure measurement to clinical care: a randomized controlled trial of outreach and tracking by community health workers. Am J Public Health 1999; 89 (6):856-61; Love MB et al. (1992).

[15] This project is still in progress.

Credentialing

Texas was the first State to adopt legislation governing the utilization of CHWs (1999). It was followed by Ohio in 2003, and other States have been considering it.[16]

Texas

House Bill 1864, enacted by the 76th Texas Legislature in May, 1999, directed the Texas Department of Health (TDH), now the Texas Department of State Health Services (TDSHS),[17] to "establish a temporary committee for studying certain issues related to the development of outreach and education programs for *promotoras* or community health workers and that will advise the Texas Department of Health, the governor, and the legislature regarding its findings."

In 2001, a system of credentialing was implemented. The program was to be voluntary for *promotores(as)/*CHWs[18] who do not receive compensation for their services and mandatory for those who are financially compensated for the services they provide. Credentialing was based on eight areas of "core competencies" identified in the 1998 National Community Health Advisor Study[19] and consisting of communication skills, interpersonal skills, service coordination skills, capacity-building skills, advocacy skills, teaching skills, organizational skills, and a knowledge base on specific health issues.

Applicants for the Certified Community Health Worker credential in Texas must either show successful completion of an approved training program or document equivalent experience.[20] Training programs must include at least 20 clock hours of instruction in each of the eight competency areas. Renewals are biennial and require 20 hours of continuing education. There is no fee for either the original application or for renewal.

Senate Bill 751, enacted in May 2001, called for the Texas Health and Human Services Commission to require health and human services agencies to use certified CHWs/p*romotores(as)*, "to the extent possible," in performing health outreach and education programs for recipients of medical assistance.

[16] Arizona, California, Kentucky, Massachusetts, Nevada, and New Mexico were listed as those considering certification in May ML, Kash B, Contreras R. Southwest Rural Health Research Center: Community Health Worker (CHW) Certification and Training - A National Survey of Regionally and State-based Programs. Office of Rural Health Policy, Health Services and Resources Administration, U.S. Department of Health and Human Services 2005. No additional information was provided as to how each of these States were considering certification.
[17] TDH became the Texas Department of State Health Services (TDSHS) in 2004.
[18] Defined in Chapter 1.
[19] Rosenthal EL et al. (1998).
[20] Required experience includes 1,000 hours of activities using the core competencies in a 12-month period ending no later than January 2005.

Ohio

The Ohio certification program began in 2003 and operated under authority of Chapter 4723-26 of the Ohio Revised Code, the Nursing Practices Act.[21] The credential is called a "certificate to practice" and is awarded after completion of an approved training program. The Ohio provision allowing documentation of experience as a substitute for training expired in 2005. Ohio provided for reciprocity through certification by "endorsement" for CHWs holding similar credentials from other States. Renewals are biennial and require 15 hours of continuing education and a $35 fee.

The Ohio program's rules provided for delegation of some nursing tasks from an RN to a CHW but included the limitation that the nurse may not supervise more than five CHWs at one time.[22] Approved training programs must consist of at least 100 hours of didactic instruction and 130 hours of clinical instruction, which may include community-based fieldwork in a setting where CHWs commonly work. "Nursing task" skills must be taught by an RN. The rules indicated the intent that CHWs be able to apply credit hours from CHW training programs to other health career-related education.[23] As of September, 2006, there were three accredited certification training programs for CHWs.[24]

Other State Initiatives

In 1994, the Indiana Medicaid Program authorized specially trained and supervised CHWs to make reimbursable home visits to high-risk pregnant women. The Indiana CHW certification program was designed to be used only as part of this program. The State health department created its own curriculum and certification was awarded on completion of an approved training program following that curriculum. Trainers were required to be State-certified "care coordinators" (RNs).[25]

Alaska created another certification program limited to one health service. The Community Health Aide/Practitioner (CHA/P) and Dental Health Aide/Practitioner (DHA/P) programs provide basic care in remote villages under medical and dental supervision, including control of certain prescription drugs under standing physician orders. Since the duties of CHA/Ps and DHA/Ps included more direct clinical care activities than those of other CHWs, the required training was more extensive and clinical in nature, covering 520 hours of instruction.

[21] See Chapter 4723-26 Community Health Workers [Internet]. Columbus (OH): Ohio Board of Nursing; 2005 [updated 2005 Feb 01/cited 2006 Sep 29]. Available from http://www.nursing.ohio.gov/Law_and_Rule.htm.
[22] ORC §4723-26-08 and -09
[23] ORC §4723-26-10 and ORC §4723-26-12
[24] Approved Community Health Worker Training Programs in Ohio [Internet]. Columbus (OH): Ohio Board of Nursing; 2006 [updated 2006 May/cited 2006 Oct 02]. Available from http://www.nursing.ohio.gov/CommunityHealthWorkers.htm.
[25] May ML et al. (2005).

Career Opportunities

Generally, the occupation of CHW has not been viewed as a career. The reasons have been short-term and unstable employment, generally low wages, lack of occupational identity, lack of recognition by other professionals, and the fact that CHWs have not been fully integrated into the U.S. health workforce.[26]

In a survey sponsored by the Massachusetts Department of Public Health, 76 percent of CHWs perceived that the only possible advancement available to them consisted of building skills and increasing their levels of responsibility within their current positions. Only 28 percent reported opportunities for promotion despite the fact that 73 percent of CHW supervisors were former CHWs.[27]

CHW credentialing has brought greater emphasis on CHW career patterns, but little has been published on this topic. Some CHW positions have been considered by some to be stepping-stones to other health and social service careers. One California program considered part of its mission to encourage successful CHWs to move on to other employment, thereby opening these positions for other community residents.[28]

The only effort targeted toward CHW career advancement was noted in New Jersey, where the AHEC Program received HRSA funding in 2005 to create (among other objectives) a CHW career development initiative in the State. The initiative would establish model standards for career development as well as a system of supports for CHWs who wished to pursue education and training to enter other health-related occupations.[29]

In California, some local health departments have utilized CHWs in unionized positions, working in standardized job descriptions with up to four levels of seniority.[30] Three of the Texas employers interviewed had multi-level CHW career ladders, but none of the CHWs interviewed in the four selected States had CHW-specific career ladders within the organizations for which they were working.

---

[26] Love MB et al. (2004).

[27] Massachusetts Department of Public Health. Community Health Workers: Essential to Improving Health in Massachusetts, Findings from the Massachusetts Community Health Worker Survey. Boston (MA): Division of Primary Care and Health Access, Bureau of Family and Community Health, Center for Community Health, March 2005.

[28] Rush CH. Telephone Conversation with: Ellen Pais (Urban Education Partnership). 2006 February 10.

[29] HRSA Grant number U77HP03629 to the University of Medicine and Dentistry of New Jersey, School of Osteopathic Medicine, effective September 1, 2005.

[30] E.g., City and County of San Francisco. San Francisco Department of Public Health: Employment Opportunities [Internet]. San Francisco (CA): Department of Public Health, City and County of San Francisco; 2005-2006 [updated 2006 Oct 19/cited 2006 Oct 20]. Available from http://www.dph.sf.ca.us/emplymnt/genljobs.htm#500Class.

Chapter 5. The Employers of Community Health Workers

Statistics were not available on the number or type of CHW employers. Therefore, estimates were derived from the data used to identify the total of paid and volunteer CHWs engaged to assist in the delivery of care to underserved communities.

Industry and Size Estimates

The number of organizations employing community health workers was estimated to be approximately 6,300 for the Nation as a whole. This is a rough approximation obtained when the estimated national total of CHWs is divided by the average number of CHWs engaged by the employers surveyed for the CHW National Employer Inventory (CHW/NEI).[1]

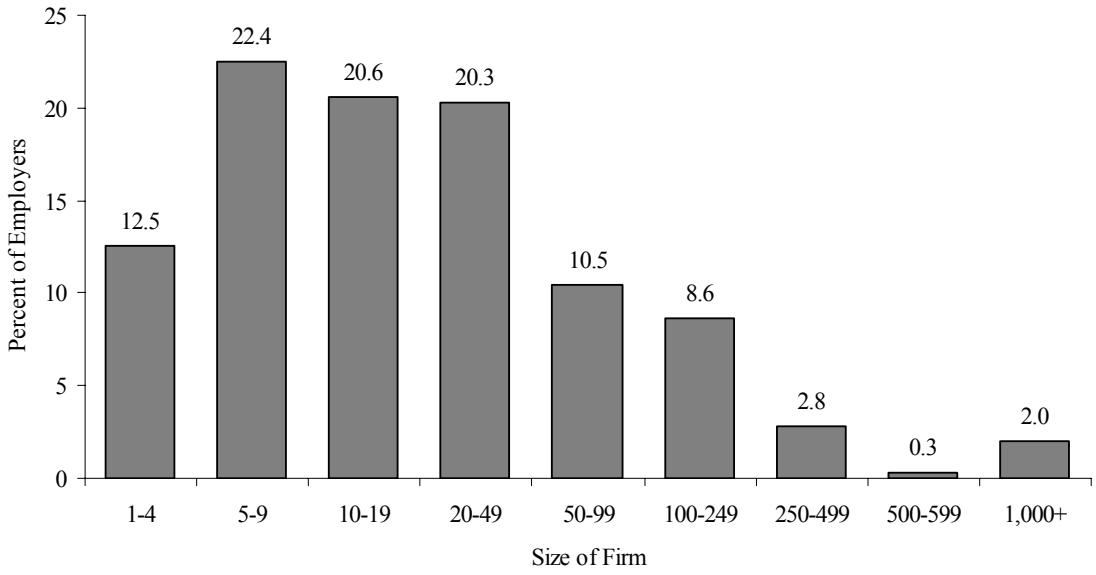
The industries found to be more likely to employ CHWs were "Individual and Family Services" (21 percent), "Social Advocacy Organizations" (14.2 percent), "Outpatient Care Centers" (13.3 percent), and "Administration of Education Programs" (12.9 percent). Additional industries found to have CHWs among their personnel, although less often, included "Other Ambulatory Health Care Services" (8.4 percent) and "Office of Physicians" (5.3 percent).[2]

The sizes of the organizations engaging CHWs are shown in Figure 5.1. The largest percentage (43 percent) were firms employing between five and 19 employees, 20 percent had between 20 and 49 individuals on the payroll, and another 19.1 percent fell in the 50 to 249 employees category. Few were "large" employers: 2.8 percent employed 250 to 499 individuals and 2.3 percent had 500 or more employees. About 12.5 percent of the firms had fewer than five employees.

[1] The estimates and the Inventory are discussed in Chapter 3 and the methodologies employed in each are explained in Appendix B and Appendix C, respectively.

[2] Employers identified during the National survey were matched against listings from the American Labor Market Information System USA-INFO through a special confidentiality agreement with the Texas Workforce Commission (TWC) that protected individual firm records and allowed the use of employers' information only in large aggregates. These records contained the North American Industry Classification System (NAICS) codes of employers as well as the number of total employees, thus allowing the identification of the industries engaging the majority of paid and volunteer CHWs and their average size. Of the verified employers in selected States, 57 percent (759 of 1,327) were successfully matched against the employer records database. For the successfully matched records, 92 percent (701 of 759) corresponded to the industries identified for inclusion in the estimates of paid CHWs. (Additional information on the estimation process, as well as the identification of employers' industry, is available in Appendix B.)

Figure 5.1 Size of Community Health Worker Employers



Source: Study file of CHW employers whose industry affiliation could be verified -- N=744

Perceived Benefits of Hiring CHWs

The occupational characteristics of CHWs that have been motivating employers to hire them were identified by combining findings from the employers' interviews and information gleaned from the review of the literature.

Generally, employers have hired community health workers because they (a) learned about their successful utilization in professional journals,[3] (b) believed that they were cost effective,[4] (c) found that CHWs were capable of organizing communities in

[3] Lam TK, McPhee SJ, Mock J et al. Encouraging Vietnamese-American women to obtain Pap tests through lay health worker outreach and media education. J Gen Intern Med 2003; 18 (7):516-24; Baier C, Grant EN, Daugherty SR et al. The Henry Horner Pediatric Asthma Program. Chest 1999; 116 (4):204S-6S; Butz AM, Malveaux FJ, Eggleston P et al. Use of community health workers with inner-city children who have asthma. Clin Pediatr 1994; 33 (3):135-41; Krieger JW, Takaro TK, Song L et al. The Seattle-King County Healthy Homes Project: a randomized, controlled trial of a community health worker intervention to decrease exposure to indoor asthma triggers. Am J Public Health 2005; 95 (4):652-9; Stout J, White L, Rogers L et al. The asthma outreach project: a promising approach to comprehensive asthma management. J of Asthma 1998; 35 (1):119-27.

[4] Findings from this study's 36 employer interviews (CHW National Workforce Study Interviews (CHW/NWSI)) conducted in four selected States. Note: See also Barnes K, Friedman S, Namerow P et al. Impact of community volunteers on immunization rates of children younger than 2 years. Arch Pediatr Adolesc Med 1999; 153 (5):518-24.

developing comprehensive health action plans,[5] or (d) discovered that programs addressing health disparities were more effective when using one-to-one outreach by CHWs.[6]

Community health workers were viewed as having contributed to more effective delivery of health-related services because they were (1) uniquely effective in gaining access to hard-to-reach populations that had been avoided by other health workers;[7] (2) able to patiently coach clients in culturally appropriate terms and induce behavioral changes;[8] (3) able to successfully communicate with clients, by developing trusting and caring relationships, to impart or gather information[9] and motivate key decisions such as participating in immunization programs;[10] and (4) able to address certain client needs such as adapting health regimens to family and community dynamics.[11]

Recruitment Strategies

Networking has been the recruitment strategy used most often by employers (74 percent).[12] Churches and local businesses have been successful intermediaries in attracting qualified candidates, and clinic-based programs have recruited among patients.[13] Other recruitment methods ranged from mass mailings[14] to partnerships with existing volunteer organizations.[15] Fifty percent of the respondents to the CHW/NEI

[5] Friedman AR, Butterfoss FD, Krieger JW et al. Allies community health workers: bridging the gap. Health Promot Pract 2006; 7 (2 Suppl):96S-107S. Note: In one example, seven local sites of a national asthma control program independently developed comprehensive community action plans. The plans varied in approach; all included significant roles for CHWs.

[6] Siegel B, Berliner H, Adams A et al. Addressing Health Disparities In Community Settings: An Analysis of Best Practices in Community-Based Approaches to Ending Disparities in Health Care. Final Report to The Robert Wood Johnson Foundation. Program In Health Services Management and Policy, Robert J. Milano Graduate School of Management and Urban Policy, New School University & The Robert Wood Johnson Foundation, December 20, 2001; Revised and Updated October, 2003.

[7] CHW/NWSI (2006); Love MB, Gardner K. The Emerging Role of the Community Health Worker in California. Results of a Statewide Survey and San Francisco Bay Area Focus Groups on the Community Health Workers in California's Public Health System. Community Health Works of San Francisco, California Department of Health Services, 1992.

[8] Staten LK, Gregory-Mercado KY, Ranger-Moore J et al. Provider counseling, health education, and community health workers: the Arizona WISEWOMAN project. J Womens Health (Larchmt) 2004; 13 (5):547-56; Bone LR, Mamon J, Levine DM et al. Emergency department detection and follow-up of high blood pressure: use and effectiveness of community health workers. Am J Emerg Med 1989; 7 (1):16-20.

[9] Krieger J, Castorina J, Walls M et al. Increasing influenza and pneumococcal immunization rates: a randomized controlled study of a senior center-based intervention. Am J Prev Med 2000; 18 (2):123-31; Becker J, Kovach AC, Gronseth DL. Individual empowerment: how community health workers operationalize self-determination, self-sufficiency, and decision-making abilities of low-income mothers. J Community Psychol 2004; 32 (3):327-42.

[10] Krieger J et al. (2000).

[11] Rodney M, Clasen C, Goldman G et al. Three evaluation methods of a community health advocate program. J Community Health 1998; 23 (5):371-81; Meister JS, Warrick LH, de Zapien JG et al. Using lay health workers: case study of a community-based prenatal intervention. J Community Health 1992; 17 (1):37-51.

[12] CHW/NEI (2006).

[13] Keyserling TC, Ammerman AS, Samuel-Hodge CD et al. A diabetes management program for African American women with type 2 diabetes. Diabetes Educ 2000; 26 (5):796-805.

[14] Andersen M, Yasui Y, Meischke H et al. The effectiveness of mammography promotion by volunteers in rural communities. Am J Prev Med 2000; 18 (3):199-207.

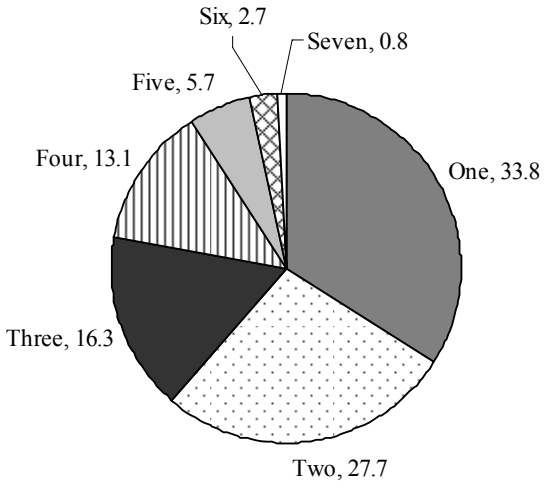
[15] Barnes K et al. (1999).

reported referrals by community members or CHW staff. Many employers (69 percent) complemented networking with traditional advertising.

Funding Sources

Consistently, in the national Inventory, in employers' interviews and in the literature, the prevalence of short-term funding and the necessary reliance on multiple funding sources were cited by employers and other observers as a major barrier to the development of the CHW workforce.[16] Figure 5.2 shows that 66 percent of the employers surveyed for the national Inventory reported two or more sources of funding.

Figure 5.2 Percent of Employers Supporting CHW Programs From One or More Funding Sources



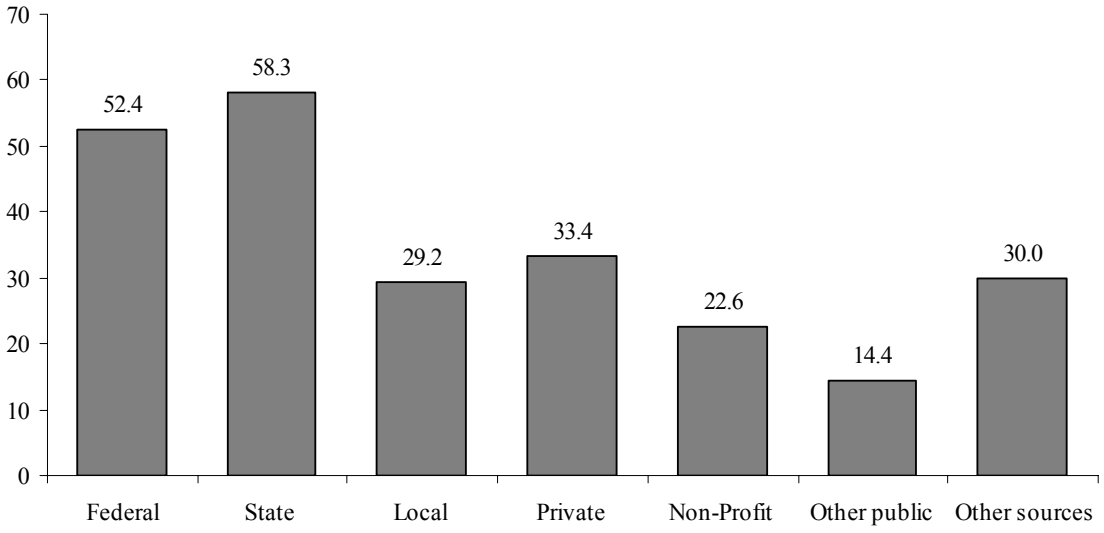
Source: CHW National Employer Inventory (CHW/NEI) (2006), N=527

Figure 5.3 shows the percent of employers by the type of agency that gave financial support to the CHW programs. Federal and State governments provided most of the funds. Private organizations, local governments, and other sources supported about one-

[16] Raczynski JM, Cornell CE, Stalker V et al. Developing community capacity and improving health in African American communities. Am J Med Sci 2001; 322 (5):269-75; Rico C. Community Health Advisors: Emerging Opportunities in Managed Care. Annie E. Casey Foundation, Seedco--Partnerships for Community Development, 1997; Rosenthal EL, Wiggins N, Brownstein JN et al. The Final Report of the National Community Health Advisor Study. Tucson (AZ): University of Arizona, 1998; Pew Health Professions Commission. Community Health Workers: Integral Yet Often Overlooked Members of the Health Care Workforce. San Francisco (CA): University of California Center for the Health Professions, 1994; National Fund for Medical Education. Advancing Community Health Worker Practice and Utilization: The Focus on Financing. San Francisco (CA): Center for the Health Professions, University of California at San Francisco, 2006; Brownstein JN, Bone LR, Dennison CR et al. Community health workers as interventionists in the prevention and control of heart disease and stroke. Am J of Prev Med 2005; 29 (5S1):128-33; Blue Cross Foundation. Critical Links: Study Findings and Forum Highlights on the Use of Community Health Workers and Interpreters in Minnesota. Eagan (MN): Blue Cross and Blue Shield of Minnesota Foundation, 2003.

third of the employers. Similar patterns of funding were found in most recent State and local workforce studies on CHWs.[17]

Figure 5.3 Percent of Funding of CHW Programs by Source



Source: CHW/NEI (2006), N=527 – multiple responses permitted

A 2006 study by the National Fund for Medical Education (NFME) of the University of California at San Francisco was the most current and comprehensive account of how CHW programs are financed.[18] The study, titled *Advancing Community Health Worker Practice and Utilization, The Focus on Financing,* relied on a comprehensive review of the literature and structured interviews with 25 knowledgeable informants representing 14 States plus the District of Columbia who were either employers or directly involved in educating, training, financing, managing, or studying the CHW workforce. The NFME study, confirming findings from the CHW/NEI, concluded that prevailing short-term funding induced frequent modifications in program focus in response to changes in priorities of funding sources. This hindered the evolution of the CHW workforce.

[17] Cowans S. Bay Area Community Health Worker Study. [HED 892 - Final Report]. San Francisco (CA): San Francisco State University, 2005. 29 p; Results of the Southwestern Connecticut Community Outreach Worker Survey. Bridgeport (CT): Southwestern Area Health Education Center and Housatonic Community College, October 2000; Blue Cross Foundation (2003); Massachusetts Department of Public Health. Community Health Workers: Essential to Improving Health in Massachusetts, Findings from the Massachusetts Community Health Worker Survey. Boston (MA): Division of Primary Care and Health Access, Bureau of Family and Community Health, Center for Community Health, March 2005; Virginia Center for Health Outreach. Final Report on the Status, Impact, and Utilization of Community Health Workers. Richmond (VA): James Madison University, Institute for Innovation in Health and Human Services, 2006; New Mexico Department of Health. Senate Joint Memorial 076 Report on the Development of a Community Health Advocacy Program in New Mexico. Santa Fe (NM): Department of Health, November 24, 2003; Keane D, Nielsen C, Dower C. Community health workers and promotores in California. San Francisco (CA): UCSF Center for the Health Professions, 2004.

[18] NFME (2006).

The NFME study predicted that charitable foundations, government grants, Medicaid, State/Federal government general fund appropriations, and private companies will be the major potential funding sources of the future.

The most successful CHW programs, reported the NFME researchers, are those that (1) have the mission of providing specific services to underserved target populations, (2) address the delivery of health care holistically, that is, attending to the total health needs of the population being served, (3) have clearly identified unmet health needs and intervention strategies, (4) can document outcomes with solid data indicating favorable changes in access, cost, or health status, (5) are able to attract the assistance of "champions" who have leverage for winning support for CHWs, and (6) can offer training to the CHWs on the specific services needed.[19]

Sources of Long-term Support

Health Resources and Services Administration (HRSA)

HRSA funding has supported many CHW programs nationally, principally through Federally Qualified Health Centers of the Bureau of Primary Health Care (BPHC) and Healthy Start Programs of the Maternal and Child Health Bureau (MCHB). Some of the programs supported by the HIV/AIDS Bureau included CHWs as "peer educators" or "peer outreach workers." About one-fourth of employers responding to the "funding" section of the national Inventory survey reported receiving funding from HRSA or having a HRSA-sponsored program (26 percent, N=634). A 2002 report from the Health Resources and Services Administration, MCHB listed examples of programs from four Bureaus, and a partial list of shorter-term project grants from the Office of Rural Health Policy.[20]

The Health Education Training Centers (HETC) program of the Bureau of Health Professions (BHPr) was the only program in HRSA with a specific legislative mandate to support the CHW workforce. A report for the 2004 National HETC Annual Meeting described 42 CHW programs supported by HETCs as "best practices."[21]

In conducting the in-depth investigations of the selected States reported in Chapter 8, the following examples of HRSA support were found.

Centro Familiar de Salud San Vicente in El Paso, Texas, was a Federally Qualified Health Center supporting *promotor(a) de salud* (CHW) services in part from its Public Health Service Act (PHSA) Section 330 funding. San Vicente's "Puente de Salud"

---

[19] Ibid (p.7).

[20] Health Resources and Services Administration. Directory of HRSA's Community Health Workers (CHWs) Programs. Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services July 5, 2002. Note: Bureau of Health Professions, Bureau of Primary Health Care, HIV/AIDS Bureau, and Maternal and Child Health Bureau.

[21] Health Education and Training Centers (HETC) Community Health Worker Best Practices Compendium. National HETC Annual Meeting, 2004.

(Bridge of Health) program received a 2003 Border Models of Excellence award from the U.S.-Mexico Border Health Commission. *Promotoras* served primarily Hispanic residents who were economically disadvantaged and uninsured by providing community outreach education, access to referral services, counseling, and group presentations.[22]

Three Healthy Start grantees (HRSA/MCHB) in Texas provided examples of how the same funding source could support different locally determined objectives and approaches.[23] In Dallas, the objectives included reduction of infant mortality, low birth-weight and teen pregnancy. "Outreach Care Workers" (another term for CHWs) were used for case-finding, enrollment and follow-up visits. Fort Worth's objectives involved improving care coordination, increasing rates of early prenatal care, and increasing rates of immunization and screening for post-partum depression; there, the role of Outreach Workers was limited to case-finding and enrollment in informal community settings. In San Antonio, the objectives included those adopted by Dallas and Fort Worth, plus maintenance of participants in interconceptional care[24] for up to 24 months post-delivery.

The New York State Department of Health managed several streams of HRSA funding including maternal and child health services grants and maternal and child health community-integrated services funds.[25] The programs employed CHWs for outreach to pregnant and parenting women, to newborns, and to young children. The New York State "Community Health Worker Program," addressing maternal and child health, was perhaps the most widely recognized CHW program in the State. This may have been due to the fact that the program had long-term funding.[26]

The AIDS Institute of the New York State Department of Health (NYS DOH) managed Federal funds from the Ryan White CARE Act through contracts with community agencies throughout the State. The Finger Lakes Migrant Health Project in Rushville, New York, employed CHWs in a *promotor(a)* model, recruited from migrant camps. The program was originally funded by the March of Dimes and later by a Medical Expansion Grant administered by HRSA. CHWs worked in prenatal clinics to provide education on infant and women's health issues and assisted in outreach services to migrant camps.[27]

Community health centers of Franklin County, Massachusetts, received a Health Center Cluster grant under the Section 330 Healthy Communities Access Program (HCAP) from HRSA. The health center employed two full-time "outreach representatives," both of

---

[22] United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. *Puente de Salud* Model El Paso, Texas. El Paso (TX): United States-Mexico Border Health Commission, 2004.
[23] Project Abstract - H49MC00114, Fort Worth Healthy Start Initiative. Rockville (MD): Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, 2001; Project Abstract - H49MC00101, San Antonio Healthy Start Project. Rockville (MD): Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, 2001; Project Abstract - H49MC00157, Dallas Healthy Start: Eliminating Disparities in Perinatal Health (General Population). Rockville (MD): Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, 2001.
[24] This refers to the care or services provided to women between a birth/infant death/fetal loss and a next pregnancy to address various health and social conditions.
[25] CHW/NWSI (2006).
[26] Ibid.
[27] Ibid.

whom were bilingual.[28] One of the CHWs worked with seasonal migrant farmworkers for half of the year, dedicating the other half to the general population of the health center. The outreach worker assisted migrant workers by providing transportation to health care appointments. Outreach to the community was conducted to inform residents about multiple issues including insurance enrollment, housing, nutrition, and other social and health service needs.[29]

Community health centers in Arizona received funding from HRSA for services that included CHWs. The Mariposa Community Health Center's Women's Health Program was partially funded by HRSA/MCHB. Its CHWs provided linguistically and culturally appropriate health information, education, and referral, and led activities with community members, especially new community members, aimed at changing health behaviors.[30] The CHW programs at Chiricahua Community Health Center and other community health centers in Arizona provided health education and home visitation.[31]

The Office of Family Planning of the Office of Population Affairs (OPA), United States Department of Health and Human Services (USDHHS)[32]

The Family Planning Program is administered within the OPA, although its budget line is located within HRSA. In addition to family planning services and related counseling, Title X[33] supported clinics and provided preventive health services. For many clients, Title X clinics were the only continuing source of care and health education. The program supported a nationwide network of approximately 4,600 clinics delivering reproductive health services to approximately 5 million persons each year.[34] Planned Parenthood was an example of a Title X Family Planning Delegate that received funds and employed CHWs at clinics throughout the country, including California, New York, and Texas.

Community Health Representative (CHR) Program of the Indian Health Service (IHS)

This program is the largest and the longest standing in the United States. The CHR Program was initially funded by the Office of Economic Opportunity (OEO) in 1967 as the Community Health Aide Program, and was transferred to IHS gradually from 1969 to

[28] Ibid.
[29] Ibid.
[30] United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Mariposa Community Health Center of Excellence in Women's Health Model, Santa Cruz County, Arizona. El Paso (TX): United States-Mexico Border Health Commission, 2004.
[31] AACHC Program Overview [Internet]. Phoenix (AZ): Arizona Association of Community Health Care; 2006 [updated 2006/cited 2006 May 10]. Available from http://www.aachc.org/programs.php.
[32] Office of Family Planning [Internet]. Rockville (MD): Office of Family Planning, Office of Population Affairs, Office of Public Health and Science, U.S. Department of Health and Human Services; [updated 2006 Sep 16/cited 2006 Sep 26]. Available from http://opa.osophs.dhhs.gov/titlex/ofp.html.
[33] According to the Office of Family Planning (OFP), Title X is a Federal program solely dedicated to family planning and reproductive health with a mandate to provide a broad range of acceptable and effective family planning methods and services.
[34] Office of Family Planning [Internet]. Rockville (MD): Office of Family Planning, Office of Population Affairs, Office of Public Health and Science, U.S. Department of Health and Human Services; [updated 2006 Sep 16/cited 2006 Sep 26]. Available from http://opa.osophs.dhhs.gov/titlex/ofp.html.

1972. The original intent of IHS, modified somewhat through the years but retaining its general goal, was for the community health representatives (the term used for CHWs) to become community health promoters, educators, advocates, and health paraprofessionals who would regularly visit the homes of clients, conduct health assessments, and provide transportation when needed. Today, the CHR Program has grown to more than 1,400 CHRs representing more than 250 tribes in 12 service areas.[35]

Annual State Appropriations

A few programs were found to be supported by annual State appropriations. The largest of them were the Kentucky Homeplace/SKYCAP[36] and the Arizona Health Start Program.[37] Few local health departments employed CHWs paid from ongoing revenue streams.[38]

Medicaid, State Children's Health Insurance Program (SCHIP), and Medicare

While some outreach programs have been supported by Medicaid *administrative* dollars, only a few programs involving CHWs were established under Medicaid *services* funding, generally under waivers or under Medicaid-managed care plans. Of those employers responding to the Inventory, 18.0 percent included reimbursement by Medicaid and/or SCHIP.[39] Perhaps the largest identified CHW programs funded under Medicaid waivers have been California's Family PACT Program, which provided, among other services, family planning under a waiver,[40] and Alaska's Community Health Aide/Practitioner (CHA/P) Program, primarily funded by the Indian Health Service CHR Program and authorized to bill Alaska Medicaid for CHA/P services.[41]

Many community-based programs had contracts with Medicaid and SCHIP managed care organizations (MCOs) to provide CHW services. Some specific programs were identified in rural New Mexico[42] and Rochester, New York.[43] Medicaid and SCHIP MCOs typically have wide latitude in the use of funding received as capitation payments. At least one Medicaid MCO had directly hired 50 CHWs on the basis of internal return

[35] General CHR Information, History & Background Development of the Program [Internet]. Rockville (MD): Indian Health Service, U.S. Department of Health and Human Services; [updated 2006 Mar 30/cited 2006 Oct 21]. Available from http://www.ihs.gov/NonMedicalPrograms/chr/history.cfm.
[36] Center of Excellence in Rural Health - Kentucky Homeplace [Internet]. Hazard (KY): University of Kentucky Chandler Medical Center; 1999 [updated 2006 Sep 25/cited 2006 Oct 9]. Available from http://www.mc.uky.edu/RuralHealth/LayHealth/KY_Homeplace.htm.
[37] Office of Women's and Children's Health - Health Start [Internet]. Phoenix (AZ): Arizona Department of Health Services, Division of Public Health Services; 2006 [updated 2006 Sep 13/cited 2006 Oct 9]. Available from http://www.azdhs.gov/phs/owch/healthstart.htm.
[38] Fort Worth, TX; San Francisco and Berkeley, CA.
[39] CHW National Employer Inventory (CHW/NEI) (2006).
[40] Gold RB. Special analysis: Medicaid family planning expansions hit stride. The Guttmacher Report on Public Policy 2003; 6 (4).
[41] Health Resources and Services Administration. The Alaska Community Health Aide Program: an Integrative Literature Review and Visions for Future Research. Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services, March 2003.
[42] NFME (2006).
[43] CHW/NWSI (2006).

on investment.[44] Another (CareFirst) received recognition in 2006 from the National Committee for Quality Assurance (NCQA) for its "Closing the Gaps" program, which utilizes CHWs, as an example of innovation in serving linguistically and culturally diverse populations.[45] A 1997 study by Seedco for the Annie E. Casey Foundation suggested that Medicaid-managed care organizations (MCOs) would be amenable to contracting for CHW services with community-based agencies if agency capacity and CHW skills standards were sufficiently high and, further, that this "could provide substantial revenues to support" CHW positions.[46]

Other Medicaid support of CHW services has followed different paths. For example, the New York State Department of Health funded local CHW services in 41 sites in 2006 under its Prenatal Care Assistance Program, which is part of the Medicaid Program.[47] Billing guidelines for HIV case management programs funded by the State of New York, as in other States, were specific in requiring that only the services of the case manager and the case management technician on the service team were directly billable to Medicaid. However, program guidelines allowed the services of a community follow-up worker (the equivalent of a CHW).[48]

Pilot projects for CHW Medicaid services in Texas were authorized under House Bill 1864 in 1999, and the State Department of Health committed $1 million per year in combined Federal and State support for five sites in 2001.[49] The State sought and obtained approval from the Centers for Medicare and Medicaid Services (CMS) in 2003[50] to use private matching funds for one pilot site in Houston, but none of the other sites received funding. A similar situation arose for the "Community Connectors" program serving mainly the African-American elderly in rural Southeastern Arkansas; the pilot program was initially supported under Medicaid administrative funding with private foundation matching funds used for the Federal share of funding.[51]

In 2006, the CMS funded six Cancer Patient Navigator demonstration sites for assistance to minority cancer patients on Medicare fee-for-service benefits, although navigator

---

[44] NFME (2006).
[45] Ten Health Plans Recognized by NCQA for Bridging Cultural and Linguistic Divides in Health Care [Internet]. Washington (DC): National Committee for Quality Assurance; 2006 [updated 2006 Sep 13/cited 2006 Sep 29]. Available from http://www.ncqa.org/Communications/News/CLAS_06.htm.
[46] Rico C (1997).
[47] Governor Pataki Announces $8 Million in Funding for Family Health Services, Perinatal Care. Initiative Supports Expanded Access for Women to These Vital Services [Internet]. Albany (NY): New York State Governor's Page; 2006 [updated 2006 May 4/cited 2006 Sep 26]. Available from http://www.ny.gov/governor/press/06/0504061.html.
[48] Welcome to the COBRA HIV/AIDS Case Management Website! Who are We? [Internet]. Albany (NY): AIDS Institute, New York State Department of Health; 2002 [cited 2006 Sep 26]. Available from http://www.cobracm.org/whoweare/.
[49] Promotora Program Development Committee: Promotora Program Development Committee Meeting Minutes - for 2000 (August 17, 2000) [Internet]. Austin (TX): Texas Department of State Health Services; 2000 [updated 2006 Oct 30/cited 2006 Sep 30]. Available from http://archive.tdh.state.tx.us/legacytdh/ppdc/minutes_2000.htm#August%2017,%202000.
[50] Nichols DC, Berrios C, Samar H. Texas' community health workforce: from state health promotion policy to community-level practice. Prev Chronic Dis [Serial Online] 2005; 2:1-7.
[51] Rush C. Conversation with: M. Kate Stewart. 2004 November 8. Mr. Rush served as a consultant to this project in 2001-2002 through the University of Arkansas for Medical Sciences, Center for Health Improvement.

services were not a regular feature of fee-for-service Medicare.[52] No other examples of Medicaid, SCHIP, and Medicare financing of services were found.

For-Profit Firms

A growing area of support for CHWs was found to be for-profit firms, both through outsourcing and direct employment. The increasingly large chronic disease management industry has changed both the structure of health care finance[53] and the practice of medicine.[54] In 2005, two for-profit disease management firms known to be actively pursuing the use of CHWs were among seven firms receiving annual excellence awards from the Disease Management Association of America.[55] It is also conceivable that for-profit health insurers in the Medicaid, Medicare, and SCHIP programs may follow the lead of non-profit insurers in utilizing CHWs. However, most of the information on the utilization of CHWs by for-profit organizations has been treated as proprietary, sensitive from a competitive viewpoint, and has not been available for public dissemination.

Finally, private insurers may be considering utilizing CHWs. They are already investing heavily in wellness incentives, care management, and the use of paraprofessionals. It is likely that, as CHW capabilities and potential become better known and documented, models of CHW utilization may be considered for health benefit plans for industries with a high percentage of low-wage jobs. However, no current examples of this type of CHW employment could be located.

[52] Awardees Cooperative Agreement Summaries - Cancer Disparities Demonstrations [Internet]. Baltimore (MD): Centers for Medicare and Medicaid Services, U.S. Department of Health and Human Services; 2005 [updated 2006 Oct 18/cited 2006 Sep 26]. Available from http://www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/CPTD_Awardee.pdf.

[53] Bodenheimer T, Fernandez A. High and rising health care costs. Part 4: Can costs be controlled while preserving quality? Ann Intern Med 2005; 143 (1):26-31.

[54] Casalino L. Disease management and the organization of physician practice. JAMA 2005; 293 (4):485-8.

[55] DMAA Recognizes Excellence in Disease Management [Internet]. Washington (DC): Disease Management Association of America; 2005 [updated 2006 Oct 18/cited 2006 Sep 26]. Available from http://www.dmaa.org/news_releases/2005/PressRelease10182005Excellence.html.

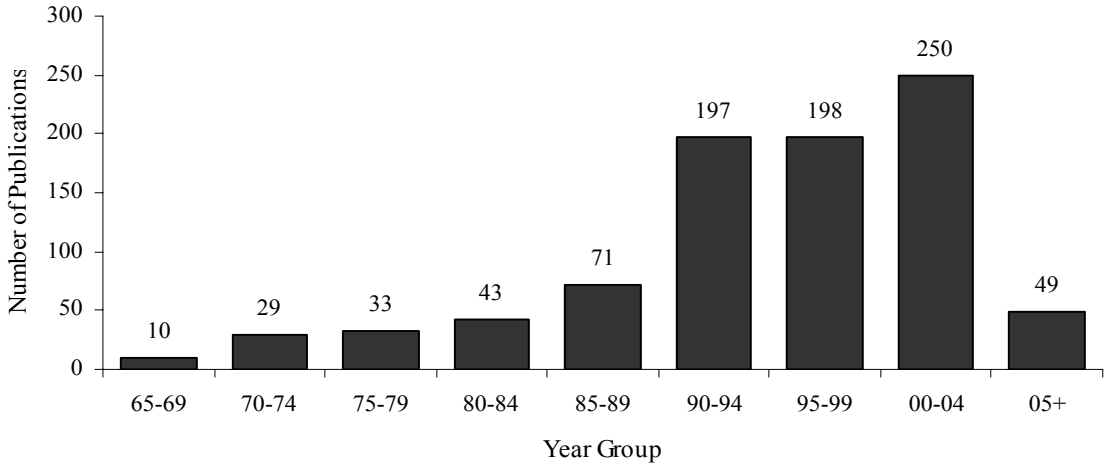
Chapter 6. CHW Workforce Research and Evaluations

This study marks the first research effort that utilized a survey of verified employers in all 50 States to draw a profile of the community health workers (CHWs) workforce. Also, for this study, it was possible to use recent refinements in occupational and industry data,[1] new reviews of the relevant literature, and collaborations with four concurrent, independently funded initiatives in CHW support,[2] education,[3] and research promotion.[4]

Extent and Nature of Current Research

An indicator of the degree of involvement of the research community in any one topic is the number of published journal articles addressing that topic. Figure 6.1 compares journal publications since 1965 in five-year intervals.[5] The increase in volume is significant: from 62 articles in the 1970s to nearly 400 in the 1990s.

Figure 6.1 Publications on CHWs in Academic and Professional Journals, 1965-2005



Source: CHW National Workforce Study (CHW/NWS) (2006).

[1] Appendix B.
[2] The CHW Programs Inventory initiated by the Center for Sustainable Health Outreach (CSHO) of The University of Southern Mississippi under a grant from the W. K. Kellogg Foundation (WKKF) became the starting point for the CHW National Employer Inventory (CHW/NEI) through a partnership agreement with CSHO. Also, the Albuquerque, Miami, Northern Manhattan, Oakland, and FirstHealth (North Carolina) Community Voices sites provided feedback to develop contacts for the CHW/NEI in their respective States.
[3] The Community Health Worker National Education Collaborative (CHW-NEC) initiative explored, under a grant from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education, best practices for CHW education and training and provided a taxonomy of key areas for developing employable CHWs (discussed in Chapter 4).
[4] The preparatory work for a forthcoming invitational conference to set a National research agenda on CHWs, supported by the California Endowment, The Northwest Area Foundation, The California Health Care Foundation, The Health Care Education-Industry Partnership of Minnesota, and The California Wellness Foundation, enhanced the material used in this chapter.
[5] The list of journal articles was obtained from the bibliographic database of 1,068 entries compiled for this study. The 2005+ year group in Figure 6.1 includes nine articles from 2006.

The quality and the scope of research within this pool of sources varied from few rigorous evaluations of specific medical interventions utilizing CHWs to many descriptive reports of CHW programs. Many studies suffered from small sample sizes, poor research designs, and lack of control groups. Rigorous longitudinal studies were needed to clearly isolate the CHW interventions and measure outcomes and cost effectiveness.

Findings From Literature Reviews

Nine literature reviews were published between 2002 and 2006 to evaluate the use of community health workers in specific primary care and medical specialty interventions. These reviews represent the best available assessments of findings from research on health interventions that included the use of CHWs. No peer-reviewed journal exists with a specific focus on CHW practice. All of the articles reviewed represent contributions to other fields such as pediatrics and health education. Most reported findings were statistically significant, but not all of them had clinical significance. Due to the variety of topics, methodologies, and results, the collective research did not provide a systematic evaluation of CHW effectiveness and best practices. It did present, however, valid—if fragmented—evidence of CHW contributions to the delivery of health care, prevention, and health education for underserved communities. Also, these literature reviews could provide a useful framework on which to base future research.

No well-documented differences were found between outcomes from programs involving paid CHWs and volunteers. And, there were no reports on the utilization of CHWs in the private sector, as competitive considerations kept the evaluation of proprietary projects from being made public.

Table 6.1 displays the number and dates of the studies examined, topics addressed, and populations served by the interventions reviewed.[6] Then, each review is briefly described and followed by a summary of findings on cost effectiveness (Table 6.2).

Three of the nine reviews were limited to the involvement of CHWs in interventions addressing diabetes, heart disease/stroke, and pregnancy in minority women. They covered a total of 98 studies, of which 23 were included in more than one review. Two reviews included only randomized controlled trials (RCTs), and one excluded studies measuring only changes in knowledge or attitudes.

[6] Appendix F contains a table that shows selected articles by author, date of publication, and health issue addressed, which were included in the nine reviews.

Table 6.1 Literature Reviews of CHW Research Studies, 2002-2006

Author, Year	Search limited to	Years Covered	Number of studies reviewed	Number of studies with reported results in terms of:				Location and Population Served: Number of Studies Specifying Each Characteristic†							
				Health care behaviors	Awareness/ knowledge, attitudes	Health-related behavior	Clinical outcomes	Urban	Rural	Men	Women	African-American	Hispanic/ Latino(a)	Asian	Native American
Andrews 2004	Minority women	1974, 1989-2002	24	15	7	11	2	17	7	0	24	15	5	1	4
Brownstein 2005	Heart Disease and Stroke	1989-2003	6	4	0	0	4	6	0	3	0	6	1	0	0
HRSA 2002	All	1991-1999	19*	18	6	5	2	12	7	1	7	9	10	1	0
Lewin 2005	All	1972-2001	21*	9	1	7	13	20	1	1	13	4	1	0	0
NFME** 2006	All	2002-2005	7	2	0	2	5	5	0	1	1	3	3	0	0
Nemcek 2003	All	1974-1999	18***	9	2	2	5	13	5	2	4	6	8	0	0
Norris 2006	Diabetes	1987-2003	15*	4	6	9	11	7	5	0	6	3	7	0	2
Persily 2003	Prenatal home visiting	1987-2000	12*	9	3	1	5	3	1	0	12	0	2	0	0
Swider 2002	All	1981-1999	19	14	2	8	3	15	0	1	9	3	4	1	0

Source: CHW/NWS (2006).

† A study was not counted if the characteristic shown was not specifically mentioned in the review.

* HRSA (2002): 19 of 20 studies reviewed were in the U.S.; Lewin (2005): Of 24 U.S. studies, 21 were included and three were excluded because they primarily referred to the provision of paraprofessional clinical care; Norris (2006): 15 of 18 articles reviewed were in the U.S.; Persily (2003): 12 of 14 studies reviewed were in the U.S.

** National Fund for Medical Education.

*** Nine of the 18 studies included were program profiles in one report.[7]

[7] Health Resources and Services Administration. Impact of community health workers on access, use of services, and patient knowledge and behavior. Bureau of Primary Health Care, Health Resources and Services Administration, U.S. Department of Health and Human Services 1998.

Andrews 2004[8]

The evaluation, limited to research studies involving ethnic minority women, found that "[CHWs] are effective in increasing access to health services, increasing knowledge and promoting behavior change…."[9] Only two of the cited studies described clinical outcomes (reduction in low birth weight (LBW) deliveries and weight loss). The remaining 12 lacked a clear reference to the theoretical framework supporting the methods employed; 10 were descriptive; 6 were quasi-experimental; seven were experimental; and one was a cross-sectional pre-post design.

Andrews found that most of the studies reported significant results for increasing access to services, but that the investigators differed in the definition of CHW roles and responsibilities and in the retention of participants, whose attrition ranged from 16 to 60 percent. Andrews concluded that CHW involvement in case management was more successful for retention than the more limited outreach role. Five of the seven studies on increasing knowledge on health behavior showed significant results; the validity of findings in the remaining two was limited by "high attrition rates, small sample size and lack of standardized instruments."

Two of the reviewed studies had positive results in breastfeeding behavior, and favorable reviews were given to single studies on weight loss, drug use, high-risk sexual behavior, and physical activity. A study on diabetes self-care did not show a measurable impact from the CHW intervention. Two studies showed both improved outcomes and reduced costs.

Brownstein 2005[10]

Brownstein's review of six studies related to heart disease and stroke concluded that CHW interventions were associated with "significant improvements in participants' blood pressure care and control."[11]

Home visits by outreach workers "to mobilize the patient's support system" were more effective in hypertension control than group education sessions.[12]

CHWs providing blood pressure (BP) monitoring, education and follow-up (working with nurse practitioners) produced significant increases in appointment keeping and continuity of care.[13]

CHWs teaming with a nurse and a physician increased entry to care and reduced blood pressure;[14] a follow-up RCT combining hypertension (HTN) care and medications with CHW

[8] Andrews JO, Felton G, Wewers ME et al. Use of community health workers in research with ethnic minority women. J Nurs Scholarsh 2004; 36 (4):358-65.
[9] Ibid. (p.358)
[10] Brownstein JN, Bone LR, Dennison CR et al. Community health workers as interventionists in the prevention and control of heart disease and stroke. Am J of Prev Med 2005; 29 (5S1):128-33.
[11] Ibid. (p.132).
[12] Morisky DE, Levine DM, Green LW et al. Five-year blood pressure control and mortality following health education for hypertensive patients. Am J Public Health 1983; 73 (2):153-62.
[13] Bone LR, Mamon J, Levine DM et al. Emergency department detection and follow-up of high blood pressure: use and effectiveness of community health workers. Am J Emerg Med 1989; 7 (1):16-20.

visits for education and for mobilizing family support led, over a 3-year period, to better care and better BP control than a "usual-care" control group.[15]

A related Community-Based Participatory Research (CBPR) project provided further levels of training to CHWs, and compared more- and less-intensive CHW interventions. Both groups experienced significant increase in BP control with no significant differences in degree of improvement between the two intervention groups.[16]

In a Medicaid population with diabetes and hypertension, CHW care management produced significant reductions in ER visits, hospital admissions, and total patient costs to the Medicaid program.[17]

HRSA 2002[18]

This review was developed for the Maternal and Child Health Bureau (MCHB) as an exploratory exercise in preparation for a national cost-effectiveness study on the use of CHWs in MCH programs. The evaluation studies reviewed were selected for their relevance to the design of the study, and the coverage was not meant to be comprehensive.[19] The principal relevance of this review rests in identifying key considerations for research on CHWs.

Lewin 2005[20]

This review of 43 RCTs excluded studies measuring only changes in knowledge, attitudes, or intentions, which "were not considered useful indicators of the effectiveness of [CHW] interventions."

The investigators concluded that CHWs "show promising benefits" in a limited range of health issues, including childhood immunizations.

National Fund for Medical Education 2006[21]

This review was conducted to accompany a study on financing and sustainability of CHW services. It summarized findings of earlier literature reviews and examined seven RCTs

---

[14] Hill MN, Bone LR, Kim MT et al. A clinical trial to improve high blood pressure care in young urban black men: recruitment, follow-up, and outcomes. Am J Hypertens 1999; 12:548-54.
[15] Dennison CR, Hill MN, Bone LR et al. Comprehensive hypertension care in underserved urban black men: high follow-up rates and blood pressure improvement over 60 months. Circulation 2003; 108:381.
[16] Levine DM, Bone LR, Hill MN et al. The effectiveness of a community/academic health center partnership in decreasing the level of blood pressure in an urban African-American population. Ethn Dis 2003; 13 (3):354-61.
[17] Fedder DO, Chang RJ, Curry S et al. The effectiveness of a community health worker outreach program on healthcare utilization of West Baltimore City Medicaid patients with diabetes, with or without hypertension. Ethn Dis 2003; 13 (1):22-7.
[18] Health Resources and Services Administration. A literature review and discussion of research studies and evaluations of the roles and responsibilities of community health workers (CHWs). Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services July 5, 2002.
[19] Ibid. (p.19).
[20] Lewin SA, Dick J, Pond P et al. Lay health workers in primary and community health care. Cochrane Database of Systematic Reviews, 2005.
[21] National Fund for Medical Education. Advancing Community Health Worker Practice and Utilization: The Focus on Financing. San Francisco (CA): Center for the Health Professions, University of California at San Francisco, 2006.

published from 2002 to 2005. Of these, one[22] reported no positive effect in measuring the role of CHWs in reduction of exposure of children to tobacco smoke. Two suggested positive effects but were included with reservations over "shortcomings in the design of the CHW role."[23] The four remaining RCTs showed impact on blood glucose in African-American men with diabetes,[24] on the participation by Hispanic women in an annual comprehensive clinical exam,[25] on smoking cessation by adult Latinos,[26] and on blood pressure control in urban African-Americans.[27]

Nemcek 2003[28]

Nemcek, writing from a nursing standpoint, concluded that "the rationale is strong for using CHWs to improve delivery of community-based preventive care" and that findings suggest roles for CHWs in three domains: (1) developing a "therapeutic alliance" between patient, provider, and family/community support systems; (2) risk reduction; and (3) improving patterns of health care utilization.

Of 18 programs reported in 10 articles, Nemcek found nine acceptable process and outcome evaluations, two with only outcome descriptions, and the remaining seven with process evaluations only. Improved utilization of services, including medical appointment-keeping and less frequent ER visits, were the most commonly reported types of outcomes. Clinical outcomes included reduction of low birth weight deliveries and changes in blood pressure and sugar levels. Changes in health-related knowledge, treatment compliance, and lifestyles were also included.

Nemcek found no useful information for evaluating the structure of CHW programs "because programs have lacked a standard structure" and noted there was "a dearth of CHW process and outcome evaluation evidence in the literature… most reports are not research studies and the use of rigorous controls was not documented."

Norris 2006[29]

Norris et al. reviewed 18 articles evaluating CHW interventions focusing on adults with diabetes and showing client outcomes, including eight RCTs. Multiple CHW roles and activities were identified, and the investigators concluded that there were "some preliminary data demonstrating

[22] Conway TL, Woodruff SI, Edwards CC et al. Intervention to reduce environmental tobacco smoke exposure in Latino children: null effects on hair biomarkers and parent reports. Tob Control 2004; 13 (1):90-2.
[23] Krieger JW, Takaro TK, Song L et al. The Seattle-King County Healthy Homes Project: a randomized, controlled trial of a community health worker intervention to decrease exposure to indoor asthma triggers. Am J Public Health 2005; 95 (4):652-9; Hill MN, Han H-R, Dennison CR et al. Hypertension care and control in underserved urban African American men: behavioral and physiologic outcomes at 36 months. Am J Hypertens 2003; 16 (11):906-13.
[24] Gary TL, Bone LR, Hill MN et al. Randomized controlled trial of the effects of nurse case manager and community health worker interventions on risk factors for diabetes-related complications in urban African Americans. Prev Med 2003; 37 (1):23-32.
[25] Hunter JB, de Zapien JG, Papenfuss M et al. The impact of a promotora on increasing routine chronic disease prevention among women aged 40 and older at the U.S.-Mexico border. Health Educ Behav 2004; 31 (4 Suppl):18S-28S.
[26] Woodruff SI, Talavera GA, Elder JP. Evaluation of a culturally appropriate smoking cessation intervention for Latinos. Tob Control 2002; 11 (4):361-7.
[27] Levine DM et al. (2003).
[28] Nemcek MA, Sabatier R. State of evaluation: community health workers. Public Health Nurs 2003; 20 (4):260-70.
[29] Norris SL, Chowdhury FM, Van Le K et al. Effectiveness of community health workers in the care of persons with diabetes. Diabet Med 2006; 23 (5):544-56.

improvements in participant knowledge and behavior." Other research designs included six before/after designs, three non-randomized comparison studies, and one with post-intervention measures only.

Persily 2003[30]

This review encompassed 14 studies, of which one was not from the United States and one was purely descriptive, limited to programs intended to improve pregnancy outcomes. Persily found that, although "home visiting by lay workers may be more accepted by pregnant women," published studies showed "mixed results." Among the 14 studies on "lay home visiting programs," eight showed positive impact on use of prenatal care; three of five, examining low birth weight delivery, showed impact; and one study showed impact on pre-term delivery. Three studies reported impact on "social support." Only one study (on child abuse) showed no significant impact. However, the review described weaknesses in the studies such as the use of descriptive or quasi-experimental designs, poorly specified interventions, and lack of cost analyses.

Swider 2002[31]

This review covered 19 CHW effectiveness studies of various design from 1981 through 1999. Swider concluded that there was some evidence for supporting CHWs in increasing access to care, particularly for underserved populations, but "inconclusive results" regarding knowledge acquisition, clinical outcomes, and behavioral changes. In most of the studies reviewed, the CHWs' "primary role expectations were not reported, nor were details of the intervention they provided." Therefore, only one of four studies with a primary CHW role of "outreach and case finding" had positive outcomes.

Cost Effectiveness

Ten published studies[32] were found that dealt with cost effectiveness of, or return on investment (ROI) from, CHW activities. In only two of these studies did cost considerations constitute the main topic of the published article.[33] The limited number of studies and the variety of measures used did not allow meaningful conclusions overall.

[30] Persily CA. Lay home visiting may improve pregnancy outcomes. Holist Nurs Pract 2003; 17 (5):231-8.
[31] Swider S. Outcome effectiveness of community health workers: an integrative literature review. Public Health Nurs 2002; 19 (1):11-20.
[32] Published studies in Table 6.2 are referenced in Appendix I.
[33] Whitley EM, Everhart RM, Wright RA. Measuring return on investment of outreach by community health workers. J Health Care Poor Underserved 2006; 17 (1 Suppl):6-15; Wolff N, Helminiak TW, Morse GA et al. Cost-effectiveness evaluation of three approaches to case management for homeless mentally ill clients. Am J Psychiatry 1997; 154 (3):341-8.

In Table 6.2, the articles' health-related objectives, outcome measures, and cost-effectiveness results are displayed by author in alphabetical order.

Table 6.2 Studies

Lead author	Year	Health issue	Outcome measures	Cost-effectiveness results
Barnes-Boyd	2001	Infant mortality reduction	Mortality rates, program retention, health problems identified, immunization rates	Implied cost-saving potential in that outcomes with nurse-CHW team were at least equal to those of nurse-only team (no computation of cost savings)
Beckham	2004	Asthma management	Reported symptoms, doctor visits, emergency department (ED) visits	Total per capita costs reduced from $310 to $129; ED costs reduced from $1,119 per participant to $188
Black	1995	Non-Organic Failure to Thrive (NOFTT)	Child development measures, parent-child interaction scores	Costs of intervention "generally consistent with" other home-visiting programs ($1,709 to $6,200 per year)
Fedder	2003	Diabetes management	ED visits, hospital admissions, quality-of-life indicators	Cost to Medicaid reduced an average of $2,245 per patient per year
Krieger	2000	Older adult flu and pneumonia prevention	Immunization rates	Marginal cost per additional vaccine administered = $117; options for lower cost discussed
Krieger	2005	Asthma (indoor triggers)	Caregiver quality of life; use of urgent health services; symptom days	Projected four-year net savings $189 to $721 per participant
Sox	1999	Cancer screenings for women	Effectiveness of trained Community Health Aides performing clinical exams and Pap smears (Alaska)	Implied cost saving in reduced travel of clinical personnel to remote villages (no estimates)
Weber	1997	Mammography	Rates of mammography use	Marginal cost of CHW activity per additional mammography performed = $375, equivalent to $11,591 per year of life saved
Whitley	2006	Primary care utilization	Utilization, charges and reimbursements	Cost reduction of $14,244 per month, program cost of $6,229 per month = ROI ratio of 2.28:1
Wolff	1997	Mental illness	Treatment contact, psychiatric symptoms, satisfaction with treatment	Total cost of treatment less with CHW but not statistically significant: treatment only, $49,510; treatment with CHW team, $39,913; brokered case management, $45,076

Source: CHW/NWS (2006).

Chapter 7. Current Trends

There are suggestive indications, but no statistical evidence, of the size and direction of change in the community health worker (CHW) workforce. Studies in Minnesota[1] and California[2] suggested the growth of the CHW workforce but could not be used to accurately predict a growth trend. The absence of an official definition of the CHW occupation and the erratic, short-term funding of CHW programs have hampered the collection of CHW data and made estimates difficult. However, two sources of information offer some evidence that the CHW workforce is likely to increase in the forthcoming years: the Bureau of Labor Statistics (BLS) projections of occupations that include CHWs and the interviews of CHW employers conducted for this study. The BLS data can be used to make a very rough estimate of the growth of the CHW workforce from 2000 to 2005.

Estimates of Growth for the Community Health Worker Workforce from BLS Data

The method used in this study to arrive at national and State estimates of community health workers[3] employed data from the Census Bureau and the Bureau of Labor Statistics for two Standard Occupational Classification (SOC) codes:[4] SOC code 21-1010, Counselors, and SOC code 21-1090, Miscellaneous Community and Social Service Specialists. The "Social and Human Service Assistants" (SOC 21-1093), a subgroup of Miscellaneous Community and Social Service Specialists, was "projected to grow much faster than the average for all occupations between 2004 and 2014 and was ranked among the most rapidly growing lines of work."[5]

Current estimates from the Bureau of Labor Statistics for these two occupations, 21-1010 and 21-1090, are shown in Table 7.1.[6] BLS expected that the number of individuals working in these two SOC occupation codes will increase between 2000 and 2005 by 22 and 44 percent, respectively.

[1] Blue Cross Foundation. Critical Links: Study Findings and Forum Highlights on the Use of Community Health Workers and Interpreters in Minnesota. Eagan (MN): Blue Cross and Blue Shield of Minnesota Foundation, 2003; Minnesota Community Health Worker Work Force Analysis: Summary of Findings for Minneapolis and St. Paul. Minnesota Community Health Worker Project in partnership and funded by the Robert Wood Johnson Foundation and the Blue Cross Blue Shield Foundation, 2005.
[2] Love MB, Gardner K, Legion V. Community health workers: who they are and what they do. Health Educ Behav 1997; 24 (4):510-22; Cowans S. Bay Area Community Health Worker Study. [HED 892 - Final Report]. San Francisco (CA): San Francisco State University, 2005. 29 p.
[3] See Chapter 3 and detailed methodology in Appendix B.
[4] Occupational Outlook Handbook, 2006-07 Edition, Social and Human Service Assistants [Internet]. Washington (DC): Bureau of Labor Statistics, U.S. Department of Labor; 2006 [updated 2006 Aug 04/cited 2006 Oct 20]. Available from http://www.bls.gov/oco/ocos059.htm.
[5] Ibid.
[6] Occupational Employment Statistics. Washington (DC): Division of Occupational Employment Statistics, Bureau of Labor Statistics, U.S. Department of Labor; [updated 2006 Oct 04/cited 2006 Oct 20]. Available from http://data.bls.gov/oes/search.jsp?data_tool=OES. Note: Customized tables.

Table 7.1 Percent Change in Selected SOC Codes

SOC	2000	2005	Percent Change
21-1010	434,130	530,710	22.2
21-1090	385,080	555,640	44.3
Total	819,210	1,086,350	32.6

Source: Bureau of Labor Statistics.

Using the estimated proportions of CHWs in SOC 21-1010 and 21-1090 in 2000 (1.8 and 12.4 percent, respectively) and assuming no changes in the proportions over time, an estimate of 9,758 (530,710 x 1.8 / 100) and 68,938 (555,640 x 12.4 / 100) can be made to represent the total of CHWs in these occupations in 2005. The change in those totals from 2000 to 2005 was applied to the CHW total for 2000 (85,879) to arrive at the 2005 figure of 121,206.

Table 7.2 Estimated Number of CHWs in 2000 and 2005

2000	2005	Change	Percent Change
85,879	121,206	35,327	41.1

Source: Bureau of Labor Statistics and CHW National Workforce Study Estimates (Chapter 3).

CHW National Workforce Study Interviews (CHW/NWSI)[7]

During "best-informant" interviews with 36 employers in two large and two small Northern and Southern States,[8] a routine question was asked on future plans relative to continuing or increasing CHW personnel.

The majority of employers in Texas and Arizona who participated in the interviews were optimistic about continuing the employment of CHWs and expanding their utilization into health care services addressing diabetes, mental health, and oral health. Also, a few employers mentioned plans of involving CHWs in future clinics, emergency rooms, and additional geographic areas. All employers interviewed in the four States indicated that continued funding was the key determinant of continued CHW employment.

[7] Interviews with selected candidates in the four in-depth study States were carried out from May to July 2006 to learn more about issues unattainable from extant data, including contributions CHWs have made, demand for CHWs, and future utilization of CHWs. See Appendices E1 and E2 for "workbooks" used by the research team during the interviews.
[8] Arizona, Massachusetts, New York, and Texas were selected as "in-depth" studies for this report.

Chapter 8. The CHW Workforce in Selected States

This chapter describes community health workers' activities in Arizona, Massachusetts, New York, and Texas. These regional workforce profiles were assembled with data gathered from published and unpublished studies and reports, special tabulations of the CHW National Employer Inventory (CHW/NEI), and 48 unstructured interviews with employers and CHWs, elsewhere in the study referred to as the CHW National Workforce Study Interviews (CHW/NWSI). The results of the interviews from the larger States of New York and Texas were compared to the findings from the CHW/NEI and were found to reinforce those findings. The Inventory responses from the smaller States of Arizona and Massachusetts were often too few to allow meaningful comparisons.

The Population of the Selected States[1]

In 2004, Texas and Arizona had higher percentages of Hispanics in their populations (35 and 28 percent, respectively) than did New York (16.1 percent), Massachusetts (7.7 percent), or the Nation (14.2 percent). In New York, the proportion of Blacks/African-Americans (14.7 percent) was greater than that in each of the other three States (3.0 percent in Arizona, 5.6 percent in Massachusetts, and 10.9 percent in Texas) and in the U.S. (12.0 percent). The population of Arizona had the largest percent of American Indian/Alaska Natives (4.2 percent) and Massachusetts the smallest (0.1 percent). Non-Hispanic Whites were half of the population of Texas, 80 percent of the population of Massachusetts, and 61 percent of the populations of New York and Arizona. Median household income was highest and above the U.S. value ($44,684) in Massachusetts ($55,658) and New York ($47,349); lowest, and below the national average, in Arizona ($41,995) and Texas ($41,759). The proportion of individuals without health insurance[2] was 29 percent in Texas, 21 percent in Arizona, 13.7 percent in New York, and 10.3 percent in Massachusetts. In 2004, 14.5 percent of the country's population was uninsured.

CHW Demographics

The demographic characteristics of community health workers usually mirrored those of the communities they served. This finding was to be expected given the nature of their occupation and the fact that some employers required that they actually live in the communities they assisted, sharing language, culture, and socioeconomic status with the residents.[3] In Arizona, CHWs were primarily American Indians/Alaska Natives, most of them tribal Community Health Representatives (CHRs), and Hispanics, mostly engaged in U.S.-Mexico Border or farmworker programs.[4] In Massachusetts, they were mostly White (80 percent).[5] In New York, 37 percent

[1] U.S. Census Bureau, 2004 American Community Survey Data Profile Highlights.
[2] *Behavioral Risk Factor Surveillance System (BRFSS).* Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2005. In the BRFSS, respondents were asked "Do you have any kind of health care coverage?"
[3] Walker MH. Building Bridges: Community Health Outreach Worker Programs. New York (NY): United Hospital Fund of New York; 1994.
[4] Staten LK, Gregory-Mercado KY, Ranger-Moore J et al. Provider counseling, health education, and community health workers: the Arizona WISEWOMAN project. J Womens Health (Larchmt) 2004; 13 (5):547-56; Buller D, Buller MK, Larkey L et al. Implementing a 5-a-day peer health educator program for public sector labor and trades employees. Health Educ Behav 2000; 27 (2):232-40.

of CHW personnel were Black/African-American, 35 percent Non-Hispanic White, and one-fourth (25 percent) were Hispanic/Latino(a). In Texas, the CHW workforce was 68 percent Hispanic/Latino(a), 18.5 percent Non-Hispanic White, and 10.7 percent Black/African-American.[6] A similar predominance of Hispanics/Latinos (77 percent) was found among the State-certified CHWs in Texas,[7] more than twice the proportion of Hispanics/Latinos in the State population (35 percent), a result of the pressing health issues among underserved Latinos and of the cultural acceptance of the role of *promotor(a).*[8]

In the selected States, as in the Nation, CHWs were mostly female between the ages of 30 and 50.[9] Again, the predominance of women in this workforce was partly due to the focus of many programs on underserved children and their mothers[10] as well as to clients' greater acceptance of female caregivers in their homes.[11] Exceptions were found in certain programs such as Arizona nutrition programs,[12] or fatherhood, HIV case management, and some youth programs[13] in New York, which maintained a predominance of male workers.

Socioeconomic Characteristics of the CHWs

Most CHWs in Arizona had a high school diploma,[14] and it was a requirement for CHRs in the Indian Health Service (IHS) program who were asked to be community health promoters, educators, and, when needed, health paraprofessionals.[15] CHRs received wages comparable to those of an entry-level health aide at the county health department (less than $10 per hour)[16] with incentives ranging from full fringe benefits to flexible work hours and reimbursement for training and education.[17]

---

[5] Massachusetts Department of Public Health. Community Health Workers: Essential to Improving Health in Massachusetts, Findings from the Massachusetts Community Health Worker Survey. Boston (MA): Division of Primary Care and Health Access, Bureau of Family and Community Health, Center for Community Health, March 2005. Note: Race and ethnicity were reported separately in this report. In the CHW/NEI, race/ethnicity were reported as Non-Hispanic White or Hispanic/Latino(a).
[6] CHW National Employer Inventory (CHW/NEI) (2006).
[7] Community Health Workers in Texas Demographic Data. Austin (TX): Texas Department of State Health Services, March 2006; reflects 545 certified CHWs in Texas.
[8] Despite subtle differences, the terms *promotores* and *promotoras*, defined in Chapter 1, have been used interchangeably with the term community health worker in Mexico, Latin America, and Latino communities in the U.S.
[9] Staten LK et al. (2004); Ingram M, Staten L, Cohen SJ et al. The use of the retrospective pre-test method to measure skills acquisition among community health workers. Internet Journal of Public Health Education 2004; B6-1-15; United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Mariposa Community Health Center of Excellence in Women's Health Model, Santa Cruz County, Arizona. El Paso, TX: United States-Mexico Border Health Commission, 2004.
[10] CHW National Workforce Study Interviews (CHW/NWSI) (2006).
[11] Ibid.
[12] Staten LK et al. (2004); Buller D et al. (2000).
[13] CHW/NWSI (2006).
[14] Buller D et al. (2000); Ingram M et al. (2004).
[15] Meister JS, Moya EM, Rosenthal EL et al. Community Health Worker Evaluation Tool Kit. El Paso (TX): Funded by The Annie E. Casey Foundation and produced by The University of Arizona Rural Health Office and College of Public Health 2000.
[16] Meister JS, Warrick LH, de Zapien JG et al. Using lay health workers: case study of a community-based prenatal intervention. J Community Health 1992; 17 (1):37-51; Brownstein JN, Cheal N, Ackermann SP et al. Breast and cervical cancer screening in minority populations: a model for using lay health educators. J Cancer Educ 1992; 7 (4):321-6.
[17] CHW/NWSI (2006).

In Massachusetts, the CHW/NEI confirmed the finding, from an earlier survey,[18] that the majority of CHWs had some college training, a higher level of education than the national average. Only 4 percent did not have the equivalent of a high school diploma.[19] Most CHW supervisors had a college degree (88 percent).[20] Organizations operating in the Boston metropolitan area and in unionized shops (i.e. hospital systems) paid the highest wages.[21] The Massachusetts State Department of Public Health has been the main funding source of programs employing CHWs, a unique feature of that State. In large organizations, the outreach workers experienced some wage parity issues, and due to the definitional difficulties of the CHW occupation, they had to be classified by human resource departments in similar but not always comparable occupations that required fewer skills and paid lower wages.[22]

Some employers interviewed in New York expressed preference for a college education (either associate or bachelor's level) but indicated flexibility in those requirements when the candidate had substantial community involvement and work experience.[23] In the CHW/NEI, 30 percent of CHWs working in New York had a college degree, 22 percent had some college education, and 22 percent had a GED or a high school diploma.

In New York, the models of care delivery determined CHW wages. In hospitals, wages were based on pay equity scales for similar workers in the institutions.[24] In municipal agencies, CHWs were provided with salaries and benefits commensurate to the county, city, or town pay scales.[25] Providers with a unionized workforce were subject to union pay scales. Programs with appealing union or municipal benefit packages were able to attract workers from other programs without offering competitive wages.[26] New York employers responding to the CHW/NEI indicated that 21 percent of new hires earned between $9 and $11 per hour and 35 percent between $11 and $13 per hour. The majority of experienced CHWs (62 percent) earned at least $15 per hour. A 1994 study reported that, in the New York metropolitan area, annual salaries for CHWs were between $18,000 and $25,000.[27]

The educational attainment of Texas CHWs was lower than the national average. Graduation from high school or a GED was the highest level of education for 43 percent of CHWs. One-fourth of this workforce (24 percent) had obtained a 4-year degree. Of the CHWs certified by the Texas Department of State Health Services, only 8 percent had not graduated from high school, 40 percent had a high school diploma or a GED, and 21 percent had obtained a 4-year degree or higher.[28] Newly hired CHWs in Texas were paid less than the U.S. average. The majority (66 percent) of them earned less than $11 per hour (13 percent earned less than $7 per hour) and only 9 percent earned $15 or more. Of the more experienced CHWs, 43 percent

[18] Massachusetts Department of Public Health. Community Health Workers: Essential to Improving Health in Massachusetts, Findings from the Massachusetts Community Health Worker Survey. Boston (MA): Division of Primary Care and Health Access, Bureau of Family and Community Health, Center for Community Health, March 2005.
[19] Ibid.
[20] Ibid.
[21] CHW/NWSI (2006).
[22] Ibid.
[23] Ibid.
[24] Ibid.
[25] Ibid.
[26] Ibid.
[27] Walker MH (1994).
[28] TDSHS (2006); reflects 545 certified CHWs in Texas.

received less than $11 per hour and about one-third (29 percent) were paid an hourly wage of $15 or more.[29] Most employers reported providing employee benefits and few mentioned non-monetary rewards such as participation in agency decision-making.[30] Twenty-two percent of Texas employers offered tuition assistance.

Institutional Framework

In Arizona and New York, there were no specific State directives or legislative actions naming community health workers. However, one categorical CHW program, Arizona Healthy Start, after several years of sporadic support, in 1999 received funding by State legislation with the requirement that program sites were to provide a graduated in-kind contribution to match State dollars.[31]

Massachusetts, unique among all other States, funded public health care services at the regional, local, municipal, and community level through the Massachusetts Department of Public Health (MDPH). Also, the State facilitated the formation of a CHW network as well as investigation into the training, education, and certification of CHWs.[32] In 1995, the MDPH convened an internal cross-departmental task force to better understand the current and potential impact of the CHW workforce on health care delivery.[33] In 1997, the task force developed guidelines for organizations receiving funds to support CHW activities.

Following the guidelines, in 2000, with the support of a grant from the Health Resources and Services Administration (HRSA), the MDPH began a 3-year project to implement the recommended goals. In 2000, the Massachusetts Community Health Workers (MACHW) network was established and, the MDPH, in collaboration with the MACHW, produced policy recommendations, a CHW definition, description of best practices, and operational measures for funded programs.[34]

In March 2006, the Massachusetts Legislature passed a health care reform bill[35] to provide access to quality, accountable, and affordable universal health care for the citizens of the Commonwealth, eliminate health disparities, increase the use of primary care, and reduce the use of emergency room services.[36] The law mandated CHW representation on the Massachusetts Public Health Council and required the MDPH to convene a statewide advisory board including the Commissioner of Public Health or designee and representatives of the Office of Medicaid, the Department of Labor, the Massachusetts Community Health Worker Network (MACHW), the Outreach Worker Training Initiative (OTWI) of Central Massachusetts AHEC, the Community Partners' Health Access Network, the Massachusetts Public Health Association, the

[29] CHW/NEI (2006).
[30] CHW/NWSI (2006).
[31] Bridge M, Iden S, Cunniff C et al. Improving access to and utilization of genetic services in Arizona's Hispanic population. Community Genetics 1998; 1 (3):166-8; Meister JS et al. (2000).
[32] CHW/NWSI (2006).
[33] MDPH (2005).
[34] Ibid.
[35] Chapter 58 of the Acts of 2006, called an Act Providing Access to Affordable Quality Accountable Health Care.
[36] An Act Providing Access to Affordable, Quality, Accountable Health Care, House Bill No. 4850, Section 110 [Internet]. Boston (MA): Massachusetts State Government; 2006 [cited 2006 Aug 11]. Available from http://www.mass.gov/legis/bills/house/ht04/ht04850.htm.

Massachusetts Center for Nursing, Blue Cross Blue Shield of Massachusetts, the Massachusetts Medical Society, the Massachusetts Hospital Association, the Massachusetts League of Community Health Centers, and the MassHealth Technical Forum to develop recommendations for a sustainable CHW program involving public and private partnerships.[37]

Another State legislation that influenced some aspects of CHW employment in Massachusetts was the implementation of a 2001 emergency room interpreter law requiring all acute care hospitals and psychiatric inpatient hospitals to provide translator services, refundable by the State, without charge to patients.[38] Fifty of the 80 hospitals in the State addressed the requirement.[39]

In 1999, Texas was the first State to adopt substantive legislation directly affecting the utilization of CHWs.[40] House Bill 1864, enacted by the 76th Texas Legislature, directed the Texas Department of Health (TDH)[41] to design education programs for *promotoras*[42] or community health workers. Two years later, the Promotora Program Development Committee (PPDC) recommended a system of credentialing based on the eight areas of "core competencies" identified in the 1998 National Community Health Advisor Study (NCHAS) sponsored by the Annie E. Casey Foundation.[43] In 2001, Senate Bill 751[44] directed the implementation of a *promotor(a)* or community health worker (CHW) training and certification program. The program has been voluntary for CHWs who do not receive compensation for their services and mandatory for paid CHWs. Also, the Bill required health and human services agencies to use certified CHWs/*promotores(as)* in performing health outreach and education programs for recipients of medical assistance under Chapter 32 of the Human Resources Code. For the first time, directives for Medicaid claims' administration and primary care case management services included the requirement of using certified CHWs in outreach and education activities.[45]

Models of Care

The following State examples have been chosen as illustrations of the five models of care described in Chapter 3.

---

[37] Ibid.
[38] Youdelman M, Perkins J. Providing language Interpretation Services In Health Care Settings: Examples From the Field. New York (NY): The Commonwealth Fund, May 2002.
[39] Ibid.
[40] Family Care Coordination [Internet]. Indianapolis (IN): Indiana State Department of Health; 2006 [updated 2001 Oct 02/cited 2006 Jun 19]. Available from http://www.state.in.us/isdh/programs/mch/fcc.htm. Note: Indiana implemented "Family Care Coordination" services for pregnant women and infants receiving Medicaid under provisions of an Omnibus Reconciliation Act of 1989 and of 1990, which includes home visiting for pregnant women and/or children, although the original legislation did not provide for CHWs as a class of workers in home visiting. In addition, a 1998 Bill in Maryland (House Bill 650) was aimed at requiring HMOs to employ CHWs to educate Medicaid recipients.
[41] Relevant functions of TDH became part of the Texas Department of State Health Services (TDSHS) in 2004.
[42] The term common in Hispanic communities is used in Texas and other U.S./Mexico Border States as a synonym for CHWs despite subtle differences in meaning -- in Spanish the term *promotores(as)* emphasizes "health promotion" involving activities not always strictly defined as health services.
[43] Rosenthal EL, Wiggins N, Brownstein JN et al. The Final Report of the National Community Health Advisor Study. Tucson (AZ): University of Arizona, 1998.
[44] Enacted by the 77th Texas Legislature.
[45] Rush CH: Current issues in the field [Internet]. San Antonio (TX): Family Health Foundation and South Texas Health Research Center; 2004 [updated 2004 Dec 05 /cited 2006 Nov 03]. Available from http://www.family-health-fdn.org/CHWResources/issues.htm.

Members of care delivery teams

HIV programs in New York State used a comprehensive case management strategy employing a team approach that included a case manager, case management technician, and community health worker for follow-up visits to clients at their homes and for escorting them, when necessary, to access needed care.[46]

CHRISTUS Spohn Health Care Hospital System in Corpus Christi, Texas, has assigned CHWs to emergency departments, primary care centers, and hospital floors. The CHWs in the emergency department teamed with clinical staff and followed patients from the emergency department through admission after discharge and visits with primary care physicians to ensure continuity of care. The emergency department found the program beneficial and requested its expansion.[47] Hospital floor CHWs acted as resident patient advocates linking patients to appropriate problem solvers. The workers based in the primary care center spent part of each day taking vital signs but focused mainly on medication compliance.[48]

Navigator

The African Services Committee in New York City used indigenous outreach workers to facilitate legal and immigration counseling, culturally and linguistically appropriate health care, linkages to food pantries, access to housing, and employment opportunities for a largely immigrant and refugee community.[49]

Gateway to Care, a collaborative of 170 safety net health care systems and other organizations serving 1.09 million uninsured and underinsured individuals in Houston, Texas, employed community health workers as "Navigators" to establish cultural linkages between communities and health care providers and to facilitate outreach, eligibility determination, health promotion, referral, patient advocacy, and service coordination.[50] Goals set for the CHW navigators included encouraging the utilization of primary and preventive care, improving patient-provider communication, and reducing inappropriate emergency room visits. Gateway was selected for a State-sponsored demonstration of navigator services to Medicaid recipients.[51]

Screening and education provider

In Arizona, the Mariposa Community Health Center (MCHC) -- the largest provider of medical, dental, public health, and social services in the rural and low-income Santa Cruz County -- used a large group of CHWs (64 in 2004) for outreach programs aimed at informing communities of health care options and encouraging enrollment into available services. MCHC was designated

[46] CHW/NWSI (2006).
[47] Rush CH. Conversation with: Bert Ramos (Director, CHRISTUS Spohn Family Health Center- Westside). 2006 May 01.
[48] Ramos B. Best Practice Entry Form: Community Health Workers in a Primary Care Setting. Corpus Christi (TX): CHRISTUS Spohn Hospital Corpus Christi-*Memorial*, Nueces County Hospital District, March 2005.
[49] CHW/NWSI (2006).
[50] Gateway to Care Opening Doors to Healthcare [Internet]. Houston (TX): Gateway to Care; 2000 [updated 2006 Oct 19/cited 2006 Nov 03]. Available from http://www.gatewaytocare.org/.
[51] Rush CH. Conversation with: Kimberly Camp. 2005 October.

in 2002 by the U.S. Department of Health and Human Services, Office on Women's Health, as a Community Center of Excellence in Women's Health.[52]

CHW education and screening services were utilized by a dozen sites of the statewide perinatal health promotion program, Arizona Health Start, supported by annual State government appropriations.[53]

Outreach/enrolling/informing agent

The Boston HIV Adolescent Provider and Peer Education Network (HAPPENS), housed at Children's Hospital in Boston, addressed case finding, case management, and outreach to adolescents between the ages of 12 and 20 who were lost to the health care system and were diagnosed with HIV. The program combined the CHW outreach role with the role of patient liaison to the clinical staff.[54] The HealthFirst Family Care Center**,** a Federally Qualified Health Center (FQHC) in Fall River, Massachusetts, employed CHWs to promote the health center and its programs through attendance at community events such as health fairs and educational presentations.[55]

Organizer

North End Outreach Network (NEON) of Springfield, Massachusetts, has been operating as a social service community advocacy organization with the Baystate Medical Center, also of Springfield, acting as its fiscal agent. NEON used a multi-intervention approach aimed at reaching every household in its geographic area. Seven community health advocates (CHAs) were responsible for door-to-door outreach in one of 10 geographic zones encompassing the targeted area. Also, CHAs were assigned to neighborhood schools where they worked with students and families in projects especially designed for young people, such as a digital storytelling program for hand-held devices with stories and music created by local youth. NEON maintained a database on the area's residents and addressed, when needed, other issues indirectly related to the health status of the residents such as education, literacy, employment, housing, and public safety.[56]

The role of CHWs (*promotores*) in the Texas *colonias*[57] has been that of connecting residents to health services available outside the community. This assistance has been critical since these communities lack not only health services but also some basic living necessities. *Promotores* developed environmental health community education seminars and facilitated outside groups in

[52] United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Mariposa Community Health Center of Excellence in Women's Health Model, Santa Cruz County, Arizona. El Paso (TX): United States-Mexico Border Health Commission, 2004.
[53] Meister JS et al. (2000); Office of Women's and Children's Health - Health Start [Internet]. Phoenix (AZ): Arizona Department of Health Services, Division of Public Health Services; 2006 [updated 2006 Sep 13/cited 2006 Oct 9]. Available from http://www.azdhs.gov/phs/owch/healthstart.htm.
[54] CHW/NWSI (2006).
[55] Ibid.
[56] Ibid.
[57] The term *colonia* and its plural, *colonias,* mean, in Spanish, community(ies) or neighborhood(s). In the U.S., these terms are being used to describe low-income or economically distressed residential areas along the United States/Mexico Border and in other regions of the country that may lack some of the most basic living necessities, such as potable water and sewer systems, electricity, paved roads, and safe and sanitary housing.

conducting research to bring some relief to the many high-risk health conditions of *colonias'* residents.[58]

CHW Activities

Table 8.1 compares the percentages of New York and Texas employers reporting each type of service provided by their CHW employees relative to the percentage of employers nationwide reporting the same services. The regional differences were minor and suggest that CHWs have been engaged throughout the United States with similar frequency in the same group of health care activities. Emerging duties for CHWs, as reported during State interviews, included providing assistance in organizing and managing care, in investigating clients' concerns, and articulating clients' needs.[59]

The special populations served are shown in Figure 8.1, the health issues addressed by CHWs are in Table 8.2, and the skills required by employers are in Figure 8.2. The State profiles closely shadowed the Nation except for bilingualism which, predictably, was more frequently selected by Texas respondents as an important skill. The description of education requirements, the importance of cultural competence, recruitment methods, training, education, certification, and funding streams presented in Chapters 3 and 5 apply to these selected States as well. Interesting regional examples are included in Appendix G.

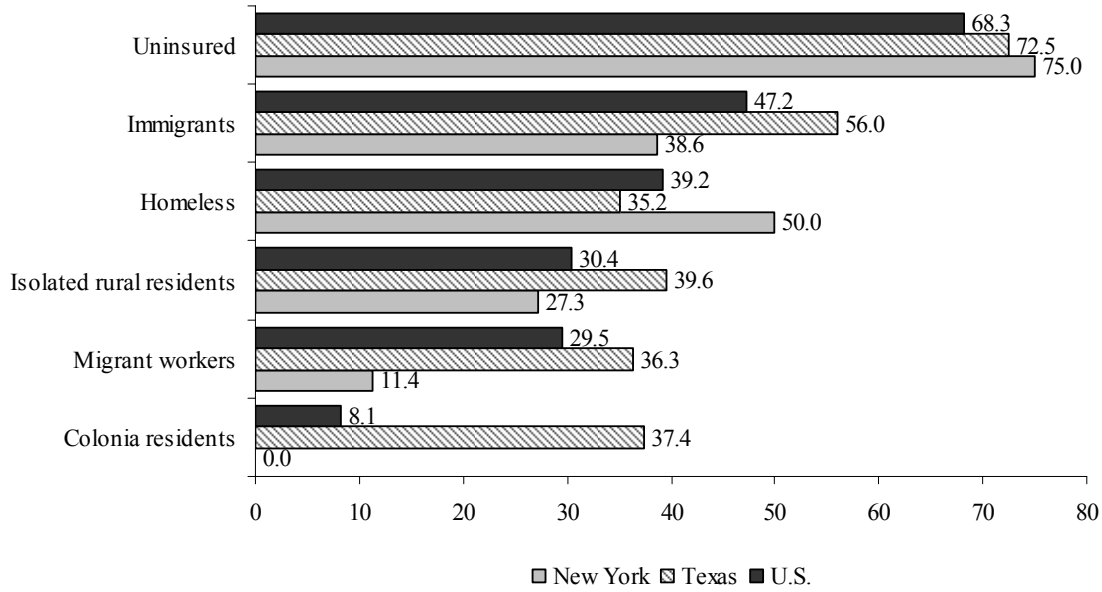
Table 8.1 Services Provided by CHWs in New York, Texas, and the United States by Percent of Respondents

Services	New York (N=44)	Texas (N=91)	U.S. (N=596)
Assisting in gaining access to medical services and programs	90.9	81.3	84.4
Providing culturally appropriate health promotion and education	81.8	87.9	81.7
Assisting in gaining access to non-medical services/programs	77.3	68.1	71.6
Community advocacy	61.4	53.8	53.0
Social support	61.4	42.9	45.8
Case management	65.9	41.8	45.0
Risk identification	68.2	30.8	40.9
Building individual capacity	52.3	39.6	38.8
Providing direct services	34.1	35.2	37.4
Translation	38.6	49.5	35.6
Transportation	40.9	37.4	35.6
Building community capacity	25.0	40.7	34.9
Interpretation	34.1	44.0	33.6
Counseling	36.4	31.9	30.5
Mentoring	22.7	24.2	20.6
Cultural mediation	11.4	24.2	18.0
Patient navigation	22.7	15.4	17.8
Other	15.9	8.8	10.6

Source: CHW National Employer Inventory (CHW/NEI) (2006); multiple responses permitted.

[58] May ML, Bowman GJ, Ramos KS et al. Embracing the local: enriching scientific research, education, and outreach on the Texas-Mexico Border through a participatory action research partnership. Environ Health Perspect 2003; 111 (13):1571-6.
[59] CHW/NWSI (2006).

Figure 8.1 Percent of Employers Reporting CHW Services to Special Populations



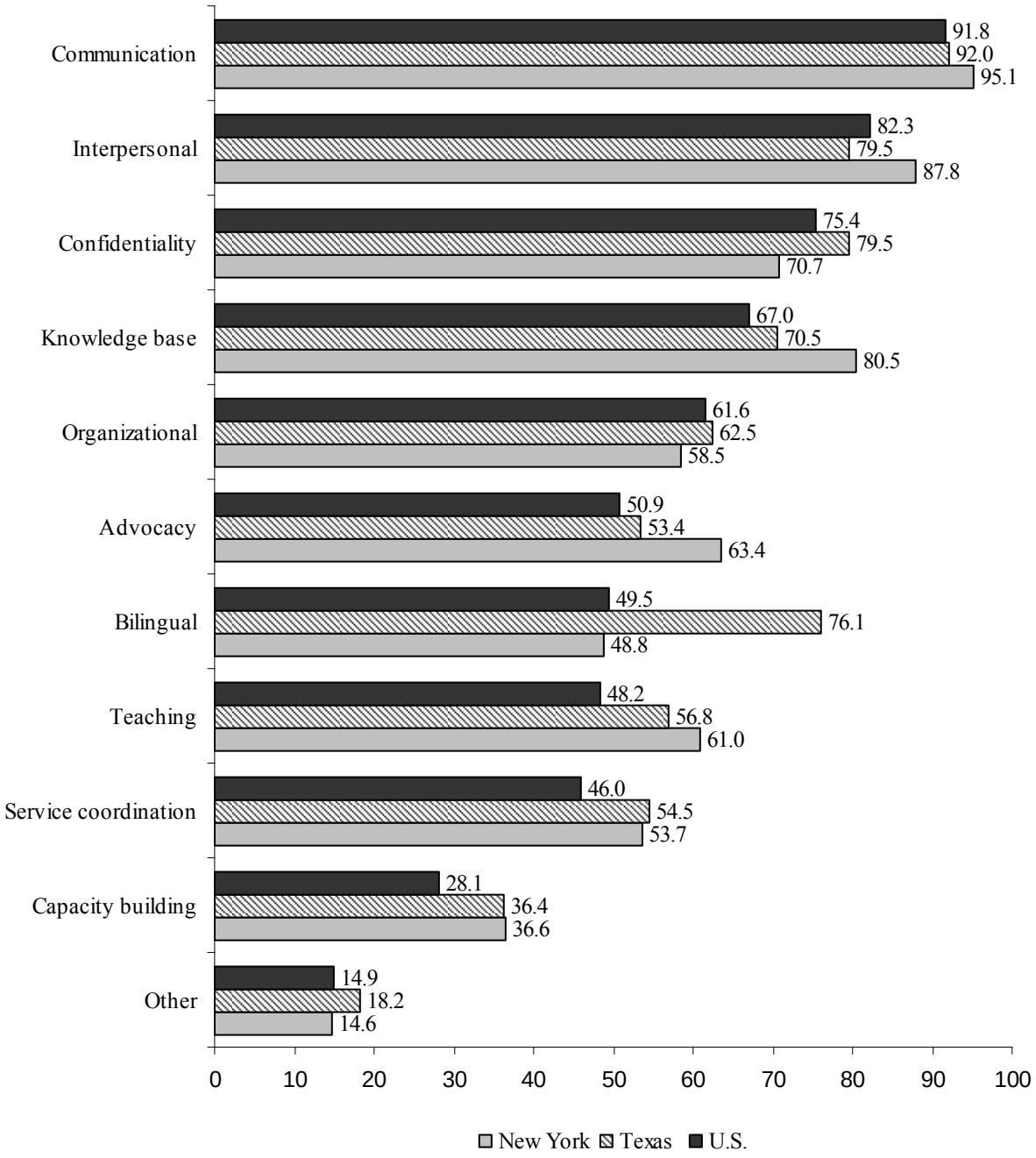
Source: CHW/NEI (2006).

Table 8.2 Health Problems Addressed by Programs, Percent of Respondents

Health Problem or Issue	New York (N=43)	Texas (N=88)	U.S. (N=587)
Nutrition	55.8	52.3	50.3
Women's health	62.8	47.7	48.6
Pregnancy, prenatal care	55.8	33.0	43.4
Child health	53.5	42.0	42.9
HIV/AIDS	76.7	29.5	41.6
Diabetes	30.2	59.1	40.0
Infant health	55.8	34.1	40.0
Immunizations	53.5	38.6	39.0
Sexual behavior	48.8	37.5	35.9
Obesity	30.2	40.9	34.9
Family planning	53.5	33.0	33.7
High blood pressure	23.3	46.6	33.2
Breastfeeding	53.5	28.4	31.9
Tobacco control	44.2	22.7	31.3
Physical activity	20.9	33.0	30.0
Low birth weight prevention, follow-up	48.8	18.2	29.8
Premature birth prevention, follow-up	51.2	22.7	29.1
Substance abuse	48.8	25.0	29.0
Cancer	16.3	34.1	28.3
Cardiovascular disease	18.6	38.6	27.3
Mental health	44.2	26.1	27.3
Heart disease	14.0	27.3	24.4
Men's health	18.6	20.5	23.0
Children w/special health care needs	39.5	22.7	22.8
Asthma	16.3	23.9	19.4
Violence	30.2	23.9	19.4
Lead poisoning	46.5	13.6	19.1
Other	20.9	29.5	18.7
Stroke	9.3	12.5	14.3
Injuries	14.0	10.2	11.8
Tuberculosis	18.6	13.6	11.4
Gay, lesbian, bisexual, transgendered issues	9.3	8.0	11.1
Emergency response	11.6	11.4	10.6
Osteoporosis	7.0	8.0	8.5
Arthritis	2.3	6.8	8.2
Alzheimer's disease, dementia	4.7	5.7	6.0

Source: CHW/NEI (2006); multiple responses permitted.

Figure 8.2 CHW Required Skills at Hire for New York, Texas, and the United States



Source: CHW/NEI (2006).

Selected Examples of HRSA-supported Programs in Arizona, Massachusetts, New York and Texas.

- Border VISION *Fronteriza* (BVF) was funded by HRSA from 1995 to 1998 through the University of Arizona Rural Health Office to conduct a U.S.-Mexico Border Health Collaborative Outreach Demonstration Initiative.[60] It produced a model training curriculum for *promotores* or CHWs in a "Promotora Academy." The services of this academy remained with the Health Education Training Centers Alliance of Texas (HETCAT), with some components absorbed in other educational programs including the Community Health Advocate Program at El Paso Community College. The emphasis of a second phase of BVF has been on improving access to health care for low-income children by expanding enrollment in publicly funded insurance programs.[61]

- Under the Western (Arizona) Area Health Education Center (WAHEC), beginning in March 2001, the Community Access Program of Arizona (CAPAZ) project utilized CHWs to support Yuma County's medical "safety net."[62] CHWs assisted in recruiting people in public health insurance programs, providing information about available medical and social services, and making referrals.

- The New England AIDS Education and Training Center (NEAETC) at the University of Massachusetts was established in 1988 as one of 11 regional HIV education centers funded through the Ryan White Act, Part F, across the United States.[63] The center offered training programs for health care providers in the six New England States including training opportunities for CHWs.[64]

- HRSA supported community health centers in New York through Title III (330) funding; these included the Charles B. Wang Community Health Center, a Federally Qualified Community Health Center that began in 1971 as the Chinatown Clinic. The Center had extensive outreach, education, and navigator services provided by 140 outreach workers to the Asian community in Manhattan and Queens. The frontline health care workers were not called community health workers but had titles indicating similar roles, such as patient service representatives, social work assistants, care managers, and lay health educators.[65]

[60] Laws MA. Foundation approaches to U.S.-Mexico Border and binational health funding. Health Aff (Millwood) 2002; 21 (4):271-7; Southwest Border Health Research Center. An Overview: Health Care Coverage in Arizona. Tucson (AZ): The University of Arizona College of Public Health for The Arizona Health Care Cost Containment System, January 2002.
[61] United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Border Vision Fronteriza 2 New Mexico Model. El Paso (TX): United States-Mexico Border Health Commission, 2004.
[62] United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Community Access Program of Arizona (CAPAZ) and *Entre Amigas* (Between Friends) Model, Yuma County, Arizona. El Paso (TX): United States-Mexico Border Health Commission, 2004.
[63] About Us [Internet]. Boston (MA): The New England AIDS Education and Training Center (NEAETC); 2005 [cited 2006 Sep 01]. Available from http://www.neaetc.org/about/; CHW/NWSI (2006).
[64] CHW/NWSI (2006).
[65] Ibid.

- The Buffalo Prenatal-Perinatal Network was the beneficiary of a $1.5 million grant from HRSA that ended in 2002.[66] The grant permitted the expansion of the Network's home visiting program, enabled recruitment of specific kinds of needed workers, and provided funding for consortia, forums, and conferences to educate providers and clients about CHWs.[67]

[66] Ibid.
[67] Ibid.

Appendix A: The Technical Advisory Group

Appendix A. Technical Advisory Group

J. Nell Brownstein, Ph.D., M.A. – Health scientist, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Atlanta, Georgia.

Susan A. Chapman, Ph.D, R.N. – Assistant Professor, Department of Social and Behavioral Sciences; School of Nursing, The University of California at San Francisco (UCSF), and Director, Allied Health Care Workforce Studies at the UCSF Center for the Health Professions.

Frederick Ming Chen, M.D., M.P.H. – Family physician, Acting Assistant Professor, Department of Family Medicine, University of Washington, Seattle.

Theresa Cosca, B.A. – Supervisory Labor Economist in the Division of Occupational Outlook, Office of Occupational Statistics and Employment Projections, Bureau of Labor Statistics, Washington, D.C.

Eugenia Eng, Dr.PH., M.P.H. – Professor and Director, MPH Degree Program, Department of Health Behavior and Health Education and the Community Health Scholars Program, University of North Carolina's School of Public Health, Chapel Hill, North Carolina.

Zeida L. Estrada – Community Health Worker, President, Community Health Workers National Network Association, Inc., Houston, Texas.

Durrell Fox, B.S. – Project Director, New England HIV Education Consortium, Boston, Massachusetts; Immediate Past Chair, Community Health Worker Special Primary Interest Group, American Public Health Association.

Antonio Furino, Ph.D. – Professor of Economics, Associate Director, Regional Center for Health Workforce Studies, Department of Epidemiology and Biostatistics, The University of Texas Health Science Center at San Antonio.

Robert B. Giffin, Ph.D. – Senior Program Officer, Institute of Medicine of the National Academies, Washington, D.C.

Teresa Hines, M.P.H. – Program Director, Health Education Training Centers Alliance of Texas (HETCAT), El Paso, Texas.

Joel Meister, Ph.D. – Professor of Public Health, Director, Concentration in Public Health Policy and Management, Mel and Enid Zuckerman College of Public Health, University of Arizona in Tucson and an affiliated faculty of the Center for Latin American Studies at the University of Arizona.

Steve H. Murdock, Ph.D. – Professor and Director, Regional Center for Health Workforce Studies, Department of Epidemiology and Biostatistics, The University of Texas Health Science Center at San Antonio; The Lutcher Brown Distinguished Chair in Management Science and Statistics and Director, Institute for Demographic and Socioeconomic Research and the Texas State Data Center at The University of Texas at San Antonio; State Demographer of Texas.

Donald E. Proulx, M.Ed. – Principal Investigator / Project Director, Community Health Worker National Education Collaborative, Arizona Area Health Education Training Centers Program, University of Arizona, Tucson.

John Ruiz, B.B.S. – Assistant Director, Systems Development and Policy Administration, National Association of Community Health Centers, Inc., Bethesda, Maryland.

Jacqueline R. Scott, J.D., M.L. – Co-Director, Center for Sustainable Health Outreach, a part of the Harrison Institute for Public Law, Senior Fellow/Adjunct Professor, The Georgetown University Law Center, Washington, D.C.

Lisa Renee Siciliano, L.S.W.A. – Director, Massachusetts Community Health Worker (MACHW) Network, Shrewsbury, Massachusetts.

Henrie Treadwell, Ph.D. – Senior Social Scientist, Director, Community Voices, and Associate Director of Development, National Center for Primary Care, Morehouse School of Medicine, Atlanta, Georgia.

Appendix B: The National and State Estimates

Appendix B. National and State Estimates

Estimates of Paid Community Health Workers

The Standard Occupational Classification (SOC) System used by occupational data collection entities, including the Census Bureau and the Bureau of Labor Statistics, does not contain a code that clearly identifies the occupation of community health worker (CHW). Until now, CHWs have been counted in official reports under existing occupation codes with job descriptions that are similar, but not equivalent to, the activities performed by CHWs. The method used in this study to estimate the number of paid CHWs is described in the following section.

Despite best efforts, the estimates of the number of paid CHWs are tentative since assumptions had to be made about which occupational codes had been used by individuals and human resource managers to report CHW activities. The assumptions employed were reviewed by scientists knowledgeable about the methods and designs of the Census and BLS surveys, as well as by researchers and specialists who had experience in studying and working with CHWs. All technical advisors expressed the opinion that the estimates, while not ideal, were useful indicators and the best effort possible within the budget constraints of the study.

Data Sources

Two sources of data were available to provide information about employed CHWs: (1) The 2000 Census data collected by the Census Bureau and released to the public in de-identified format as the Public Use Microdata Sample (PUMS) and (2) The Staffing Patterns data, used to calculate occupational estimates, collected by the Bureau of Labor Statistics (BLS). Both of these data sets contain information about workers by occupational title code (from the SOC System) and industry codes (from the North American Industry Classification System – NAICS). The codes used for the estimates were selected through a multistage process that began with a review of the available literature on CHWs.

Even though the coding system is the same, the Bureau of Labor Statistics collects more detailed occupation and industry data than the Census Bureau. This results in some discrepancy in the information available from each of the sources. For example, individuals responding to the Census "long form" may incorrectly identify either the industry in which they are employed or the occupational title used by their employer. Also, the PUMS industry and occupational categories are broader than the BLS categories and may overestimate the number of workers. Table B.1 shows a comparison of the two data sources.

Table B.1 Brief Comparison of Data Used for Computing Estimates of Paid CHWs

Characteristic	PUMS	Staffing Patterns
Federal Agency	Census Bureau	Bureau of Labor Statistics
Collected from	Individuals	Employers
Reflects	Place of residence	Place of employment
Collection schedule	Every 10 years*	Every 3 years**
Occupation codes	Broader categories	Detailed categories
Industry codes	Broader categories	Detailed categories
Unit reported	Persons	Full-time employees
Employee demographics	Available	Not available

* PUMS data from the American Community Survey will be available on a yearly basis, as it will replace the "long form" of the decennial Census.
** Each employer is surveyed every 3 years.

Census Bureau's Decennial PUMS Data

The U.S. Census Bureau makes data collected from the "long form" questionnaires completed by individuals during the decennial Census available to researchers. Sampled persons are identified in PUMS areas of 100,000 or more to protect confidentiality. The PUMS files contain records representing 5 percent of the occupied and vacant housing units in the United States and the people in the occupied units. People living in group quarters are also included in the sample. The records include a large amount of data about persons and the housing units in which they live. The file contains individual weights for each person and housing unit, which, when applied to the individual records, expand the sample to the relevant total.

The person records provide a number of items useful for identifying CHWs, and codes for occupations and the industries in which persons work. A crosswalk between Census codes for industry/NAICS and occupation/SOC, where NAICS is based on the 2002 North American Industry Classification System and SOC is based upon the 2000 Standard Occupational Classification System, is available and described later in this appendix.

While there is no specific occupation code for CHWs, there were a limited number of occupations in which CHWs may be classified. By selecting these and the industries in which CHWs were most likely to be employed, it was reasonable to expect that this set of workers could be identified.

Bureau of Labor Statistics "Staffing Patterns" Data

The U.S. Department of Labor, Bureau of Labor Statistics (BLS), has rigorous guidelines in each State to survey firms in order to collect detailed SOC occupational content in each type of NAICS-based industry category. The resulting statistics are called the "staffing patterns" for each industry. Every year, each State surveys one-third of all of its industries under strict sampling guidelines set forth by the statistical sampling techniques based on employment concentrations. After 3 years, an entire round of all industries has

been updated. Considerable effort is made by each State to deliver survey results that meet these specified criteria, and follow-up activity is utilized to overcome any shortfalls in sampling.

The percentages from these patterns are used to calculate occupational estimates for State and sub-State areas. Since each State must cooperate in these efforts set forth by BLS, the staffing patterns represent a common methodologically collected series of statistical base ranges upon which to calculate estimates and – even more importantly – projections.

Selection of Data Sources for the Estimates

Prior to calculating any estimates of paid CHWs from existing data sources, the Institute for Demographic and Socioeconomic Research (IDSER) at the University of Texas at San Antonio, collaborating with the research team for this component of the study, reviewed possible sources of data to determine which would be used to produce the estimates. This list included the 2000 Census, 2000 Public Use Microdata Sample (5 percent sample), and the 2004 American Community Survey.

Given the NAICS codes identified in the CHW report for inclusion in the estimates, the data sources were reviewed to determine the industry coding or NAICS equivalencies as used by each of the data sources. This process helped identify which data set included the most detailed information for the NAICS categories of interest.

Prior to finalizing this decision, IDSER reviewed the unweighted numbers for the NAICS codes of interest using the 2000 PUMS data. The results were evaluated to ensure sufficient numbers of cases within each industry code to proceed with the CHW estimates. After review, it was determined that the numbers were sufficient to proceed as planned. The PUMS data were then weighted.

Based on the review of the data, it was determined that the 2000 PUMS (5 percent sample) from the decennial Census would be the most appropriate data source for the CHW estimates. Because earlier discussions had also suggested the use of estimates based on BLS data, it was decided that such estimates would be prepared and compared to the PUMS-based estimates.

Standard Occupation Classification (SOC)

According to the Bureau of Labor Statistics, the 2000 SOC System is used by Federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data.[1] Workers are classified into one of more than 820 occupations according to their occupational definition. These occupations are then combined to form 23 major groups, 96 minor groups, and 449 broad occupations. The broader occupation includes detailed occupation(s) requiring similar job duties, skills,

[1] Standard Occupational Classification (SOC) System [Internet]. Washington (DC): Bureau of Labor Statistics, U.S. Department of Labor; 2000 [updated 2006 Jun 13/cited 2005 Dec 14]. Available from http://www.bls.gov/soc/.

education, or experience. As per the American Community Survey,[2] another survey conducted by the Census Bureau, Census occupation codes are classified into 23 major occupational groups based on the *Standard Occupational Classification (SOC) Manual: 2000*, published by the Executive Office of the President, Office of Management and Budget.

While the Census Bureau uses its own classification system for occupations, that is, Census Occupational Categories, the Census makes available a crosswalk[3] to show how occupation codes used by the Census correspond to the SOC. The following is an example from a previous Census Bureau crosswalk:

2000 Code	Category Title	SOC Equivalent
200	Counselors	21-1010
201	Social Workers	21-1020
202	Misc Community and Social Service Specialists	21-1090

In addition, the Census Bureau makes available descriptions for each SOC code[4] when it is linked to occupation codes used by the Census. For instance, Social and Human Service Assistants (SOC 21-1093) corresponds to code 2020[5] where the following SOC description is provided:

> Assist professionals from a wide variety of fields, such as psychology, rehabilitation, or social work, to provide client services, as well as support for families. May assist clients in identifying available benefits and social and community services and help clients obtain them. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or adult day care. Exclude "Rehabilitation Counselors" (21-1015), "Personal and Home Care Aides" (39-9021), "Eligibility Interviewers, Government Programs" (43-4061), and "Psychiatric Technicians" (29-2053).

A useful tool for viewing occupational descriptions was available from the Occupational Information Network (O-Net).[6] O-Net, available online, allows users to select specific SOC codes containing descriptions and classifications of job requirements and worker

[2] The American Community Survey is expected to replace the decennial Census "long form" questionnaire beginning in 2010.
[3] Census 2000 Occupational Categories, With Standard Occupational Classification (SOC) Equivalents, Census 2000 Code Order [Internet]. Washington (DC): Bureau of Labor Statistics, U.S. Department of Labor; 2001 [updated 2001 Jan 01/cited 2005 Dec 14]. Available from http://www.census.gov/hhes/www/ioindex/occ2000t.pdf.
[4] Industry and Occupation 2002 [Internet]. Washington (DC): U.S. Census Bureau, Housing and Household Economic Statistics Division; 2005 [updated 2005 Mar 08/cited 2005 Dec 14]. Available from http://www.census.gov/hhes/www/ioindex/ioindex02/txtnew02.html#21-1011.
[5] In 2002, industry and occupation codes used by the Census Bureau underwent a major renovation from three-digit to four-digit codes in order to accommodate the possible additions of new industries and occupations.
[6] O-Net, administered and sponsored by the U.S. Department of Labor's Employment and Training Administration, is a comprehensive database system that replaced the *Dictionary of Occupational Titles* as the primary source of occupational information.

competencies. In addition, O-Net makes available crosswalks, enabling users to "convert" several widely used occupation coding systems to current SOC codes.[7] The descriptions used by Census, BLS, and O-Net regarding occupations were the same.

Identification of Occupations for Estimates of Paid CHWs

Since the current SOC System did not have a job title or an occupational category specifically named, or designated for, community health workers, using descriptions of the work performed by CHWs and the tools provided by O-Net, Census Bureau, and BLS, it was possible to identify occupational titles in which CHWs were most likely to be classified in the current data collection systems. It was assumed that information collected by both the Census Bureau and BLS about CHWs was stored in existing SOC categories for workers with job duties that were similar to or overlapped with those of CHWs.

Using the descriptions provided in the literature of the roles and functions fulfilled by working CHWs, as well as the titles used to identify CHWs, the research team identified an initial set of occupational classifications (SOC codes). In addition, skills outlined in the National Community Health Advisor Study[8] and other studies provided guidance in identification of CHWs within SOC codes. These skills included:

- **Advocacy skills** – Ability to "speak up" for patients and communities to overcome barriers; ability to act as an intermediary with bureaucracy
- **Bilingual skills** – Fluency in the preferred language of clients and ability to translate technical terms
- **Capacity-building skills** – Empowerment skills; leadership skills; ability to influence communities and individuals to change behavior and take more control of their own health
- **Communication skills** – Ability to listen and use oral and written language confidently
- **Computer skills** – Performing data entry and using the Internet to locate health information
- **Confidentiality skills** – Ability to keep matters private, comply with HIPAA laws
- **Interpersonal skills** – Friendliness, sociability, counseling and relationship building skills; ability to provide support and set appropriate boundaries
- **Organizational skills** – Ability to set goals and develop an action plan, manage time, keep records
- **Service coordination skills** – Ability to identify and access resources; ability to network and build coalitions; ability to make and follow up on referrals
- **Teaching skills** – Ability to share information, respond to questions, and reinforce ideas; ability to adapt methods to various audiences

[7] Occupational Information Network O-Net Online: O-Net Online Help Crosswalk [Internet]. Washington (DC): National Center for O-Net Development; [updated 2005 Dec 14]. Available from http://online.onetcenter.org/help/online/crosswalk.

[8] Rosenthal EL, Wiggins N, Brownstein JN et al. The Final Report of the National Community Health Advisor Study. Tucson (AZ): University of Arizona, 1998.

From all available occupational titles, those that best fit the CHW tasks described in the literature were those of persons employed in health and social services occupations (SOC codes 21-, 29-, 31-). These categories included:

21-0000 **Community and Social Services Occupations**
- 21-1011 Substance Abuse and Behavioral Disorder Counselors
- 21-1012 Educational, Vocational, and School Counselors
- 21-1013 Marriage and Family Therapists
- 21-1014 Mental Health Counselors
- 21-1015 Rehabilitation Counselors
- 21-1019 Counselors, All Other
- 21-1090 Miscellaneous Community and Social Service Specialists
- 21-1091 Health Educators
- 21-1092 Probation Officers and Correctional Treatment Specialists
- 21-1093 Social and Human Service Assistants
- 21-1099 Community and Social Service Specialists, All Other

29-0000 **Healthcare Practitioners and Technical Occupations**
- 29-1000 Health Diagnosing and Treating Practitioners
- 29-1010 Chiropractors
- 29-1020 Dentists
- 29-1030 Dietitians and Nutritionists
- 29-1040 Optometrists
- 29-1050 Pharmacists
- 29-1060 Physicians and Surgeons
- 29-1070 Physician Assistants
- 29-1080 Podiatrists
- 29-1110 Registered Nurses
- 29-1120 Therapists
- 29-1130 Veterinarians
- 29-1190 Miscellaneous Health Diagnosing and Treating Practitioners

- 29-2000 **Health Technologists and Technicians**
- 29-2010 Clinical Laboratory Technologists and Technicians
- 29-2020 Dental Hygienists
- 29-2030 Diagnostic-Related Technologists and Technicians
- 29-2040 Emergency Medical Technicians and Paramedics
- 29-2050 Health Diagnosing and Treating Practitioner Support Technicians
- 29-2060 Licensed Practical and Licensed Vocational Nurses
- 29-2070 Medical Records and Health Information Technicians
- 29-2080 Opticians, Dispensing
- 29-2090 Miscellaneous Health Technologists and Technicians

29-9000 **Other Healthcare Practitioners and Technical Occupations**
- 29-9010 Occupational Health and Safety Specialists and Technicians
- 29-9090 Miscellaneous Health Practitioners and Technical Workers

31-0000 **Healthcare Support Occupations**
- 31-1010 Nursing, Psychiatric, and Home Health Aides
- 31-2000 Occupational and Physical Therapist Assistants and Aides
- 31-2010 Occupational Therapist Assistants and Aides
- 31-2020 Physical Therapist Assistants and Aides

31-9000 **Other Healthcare Support Occupations**
- 31-9090 Miscellaneous Healthcare Support Occupations

The review found that the occupations associated with health care required that the persons have specific professional training or technical skills or be associated with providing direct personal services. Therefore, two occupations categories that initially appeared to hold potential as CHW occupations were eliminated when job descriptions from O-Net were examined. These occupations were: Other Healthcare Practitioners and Technical Occupations (29-9000) and Healthcare Support Occupations (31-0000).

The occupation category that held the most potential to identify community health workers was Community and Social Services Occupations (21-0000). The specific occupations category that seemed likely to be useful in identifying CHWs in PUMS data was Miscellaneous Community and Social Service Specialists (21-1090). Three of the four occupations in this category seemed best suited as occupations most closely related to work CHWs do:

21-1091 Health Educators
21-1093 Social and Human Service Assistants
21-1099 Community and Social Service Specialists, All Other

The selected set was reviewed again by members of the research team and some of their advisors for further assessment of occupational titles. A second set of codes was identified as possible occupational categories in which CHWs might be classified:

21-1010 Counselors
21-1090 Miscellaneous Community and Social Service Specialists
29-1129 Therapists, All Other
29-2090 Miscellaneous Health Technologists and Technicians
29-9000 Other Health Care Practitioners and Technical Occupations
31-909X Medical Assistants and Other Health Care Support Occupations

The list of classified positions was then reviewed by a task force of individuals identified by the office of the State of Texas Regional and Local Services Division. This office oversees CHW accreditations in Texas.[9] The individuals of the task force were chosen because of their knowledge about CHWs and professional interest in this emerging workforce. This review task force included representatives from:

[9] At the time, Texas was the only State in the country that required certification of CHWs when CHWs were compensated for their work.

- Regional and Local Services Division, Texas Department of State Health Services
- Forecasting and Research, Texas Health and Human Services Commission
- Center for Health Statistics, Texas Department of State Health Services

In comparing the descriptions of specific subgroups for specific occupational categories to the work that CHWs perform, members of the Texas task force identified the following categories as those most likely to include CHWs:

21-1011 Substance Abuse and Behavioral Disorder Counselors
21-1012 Educational, Vocational, and School Counselors
21-1014 Mental Health Counselors
21-1019 Counselors, All Other
21-1091 Health Educators
21-1093 Social and Human Service Assistants
21-1099 Community and Social Service Specialists, All Other

The review by the Texas task force was followed by an informal review by the research team of the Center for Health Workforce Studies (CHWS) at the State University of New York at Albany, which had been engaged as a subcontractor for another component of the study. The Albany research team had past experience using data from the BLS and agreed with the SOC codes identified by the Texas task force.

In conclusion, the SOC codes in Table B.2 were those found most likely to include employed CHWs.

Table B.2 Standard Occupational Classification (SOC) Code Included in Methodology for Estimates of Paid CHWs

SOC Code	Description
21-1010*	Counselors
21-1011	Substance Abuse and Behavioral Disorder Counselors
21-1012	Educational, Vocational, and School Counselors
21-1014	Mental Health Counselors
21-1090*	Miscellaneous Community and Social Service Specialists
21-1091	Health Educators
21-1093	Social and Human Service Assistants
21-1099	Community and Social Service Specialists, All Other

*Broad categories reported in PUMS data.

North American Industry Classification System (NAICS)

According to the Census Bureau,[10] "Federal statistical data published for reference years beginning on or after January 1, 2002, should be published using the 2002 NAICS United States codes. Agencies may adopt the 2002 NAICS earlier at their discretion.

[10] Office of Management and Budget. North American Industry Classification System—Revision for 2002; Notice. Fed Regist 2001; 66 (10).

Publication of a *2002 NAICS United States Manual* is planned for January 2002." Some of the new features of NAICS 2002 include: (1) Relevance: new, emerging, and advanced industries are included; (2) International comparability: Canada and Mexico both cooperated in development of the latest industry classification; and (3) Consistency: businesses that use similar production processes are grouped together.[11]

Similar to a crosswalk provided by O-Net for occupational categories, a crosswalk was available from the Census Bureau to assist in converting current NAICS to previous versions of NAICS and to Standard Industrial Classification (SIC).[12]

Identification of Industries for Estimates of Paid CHWs

Since the SOC code 21-1090, Miscellaneous Community and Social Service Specialists, was found to be the one most promising for identifying CHWs, after selecting only individuals with SOC code 21-1090, a list of industries was produced using PUMS data:

5241	Insurance Carriers
6112	Junior Colleges
6113	Colleges, Universities, and Professional Schools
6213ZM	Offices of Other Health Practitioners
621M	Other Health Care Services
622	Hospitals
623M	Residential Care Facilities, Without Nursing
6242	Community Food and Housing, and Emergency Service
6244	Child Day Care Services
6243	Vocational Rehabilitation Services
711	Independent Artists, Performing Arts, Spectator Sports
712	Museums, Art Galleries, Historical Sites, and Similar Institutions
713Z	Other Amusement, Gambling, and Recreation Industries
721M	Recreational Vehicle Parks and Camps, and Rooming and Boarding Houses
8121M	Nail Salons and Other Personal Care Services
8129	Other Personal Services
8132	Grant Making and Giving Services
8133	Social Advocacy Organizations
81393	Labor Unions
813M	Civic, Social, Advocacy Organizations, and Grant-Making Institutions
814	Private Households
9292	State Government, Exclusive Education and Health
9393	Local Government, Exclusive Education and Health

While CHWs may work in these industries, it was found to be unlikely that hospitals, offices of health practitioners, other health care services, etc., were actually employing many persons who work in the community. The review reduced the list of industries

[11] Ibid.
[12] 2002 NAICS United States Structure, Including Relationships to 1997 NAICS United States and 1987 Standard Industrial Classification [Internet]. Washington (DC): U.S. Census Bureau; 2002 [updated 2004 Mar 23/cited 2005 Dec 14]. Available from http://www.census.gov/epcd/naics02/naicod02.htm.

likely to employ community health workers to the following: Community Food and Housing, and Emergency and Other Services (6242) and Civic, Social, Advocacy Organizations, and Grant-Making Institutions (Census NAICS 813M). The BLS provided sub-categories for NAICS 813M: Grant-Making and Giving Services (8132), Social Advocacy Organizations (8133), and Labor Unions (81393).

After the SOC codes were reviewed and the additional SOC of 21-1010 was identified, the research team repeated the process described earlier to identify another set of industries (NAICS codes) most likely to employ CHWs.

As with the SOC codes, the list of NAICS codes identified were reviewed by members from the Texas task force, the research team in New York, and members from the Center for Sustainable Health Outreach[13] (CSHO) at the University of Southern Mississippi.

Matching of Verified Employers to State Employment Data Sets

Each State collects employer and their wage and salary employee records in order to collect payments on unemployment compensation. This information is collected for almost 97 percent of all persons working in the civilian labor force. Under special confidentiality agreement for this project, it was possible to use a selected number of records to match the names of organizations verified as employers of CHWs to the BLS list of employers.

The record of verified employers in 10 States[14] (N=1,327) was used to locate the employer record in the American Labor Market Information System. The matching process started with searching one verified record at a time by telephone number, followed by address, city, and last by organization name.

Of the verified employers in these selected States, 57 percent (759 of 1,327) were successfully matched against the employer records database. For the successfully matched records, 92 percent (701 of 759) corresponded to the industries identified for inclusion in the estimates of paid CHWs. The industries with the most overlap included 6214 or Outpatient Care Centers, 6241 or Individual and Family Services, 8133 or Social Advocacy Organizations, and 9231 or Administration of Education Programs.
The processes just described resulted in the identification of NAICS codes most likely to include employed CHWs. They are listed in Table B.3.

Table B.3 North American Industry Classification System (NAICS) Codes Included in Methodology for Estimates of Paid CHWs

NAICS Code	Description
6111	Elementary and Secondary Schools
6113	Colleges and Universities

[13] CSHO was the partner in the study.
[14] States included: California, Colorado, Connecticut, Florida, Georgia, Hawaii, Kansas, New Jersey, New York, and Texas.

NAICS Code	Description
6211	Offices of Physicians
6214	Outpatient Care Centers
6219	Other Ambulatory Health Care Services
6221	General Medical and Surgical Hospitals
6241	Individual and Family Services
6244	Child Day Care Services
8131	Religious Organizations
8133	Social Advocacy Organizations
8134	Civic and Social Organizations
8139	Professional and Similar Organizations
9211/9992	Executive, Legislative, and General Government
9231/9993	Administration of Education Programs

BLS data contain two BLS-designated NAICS codes, 9992 – State Government sector and 9993 – Local Government sector, which are not found in the 2000 PUMS data. It was determined that these two BLS-designated NAICS categories are comparable to the NAICS categories 9211 – Executive, Legislative, and General Government and 9231 – Administration of Education Programs and will be used as counterparts in the State and national comparisons.

Data from the BLS were used to determine a proportion of individuals employed in each NAICS industry in cases where two or more NAICS codes were combined in the 2000 PUMS data. This assumed that the proportions of the combined NAICS industry codes represented in the BLS data were appropriate to use with the 2000 PUMS data.

Adjustment factors

The list of SOC and NAICS codes provided the occupational/industry categories within which employed CHWs were likely to be classified.

Next, it was determined that an adjustment factor should be employed to reflect the proportion of persons working as community health workers within the identified occupation and industry combinations.

As for the selection of the occupational codes, the adjustment factors were selected by the research team in consultation with their technical advisors and State task force. The agreed-upon proportions were used to adjust the estimate of persons working in each NAICS/SOC category obtained from PUMS or BLS.

The adjustment factors used in the final set of estimates are shown in Table B.4.

Table B.4 Adjustment Factors Applied to NAICS/SOC Categories for Final Estimates

NAICS Code	Description	21-1010	21-1090
6111	Elementary and Secondary Schools	0.00	0.05
6113	Colleges and Universities	0.00	0.05
6211	Offices of Physicians	0.10	0.20
6214	Outpatient Care Centers	0.05	0.50
6219	Other Ambulatory Health Care Services	0.05	0.30
6221	General Medical and Surgical Hospitals	0.03	0.20
6241	Individual and Family Services	0.05	0.30
6244	Child Day Care Services	0.05	0.20
8131	Religious Organizations	0.10	0.40
8133	Social Advocacy Organizations	0.10	0.40
8134	Civic and Social Organizations	0.10	0.40
8139	Professional and Similar Organizations	0.10	0.40
9211/9992	Executive, Legislative, & Gen Government	0.05	0.05
9231/9993	Administration of Education Programs	0.10	0.25

Table B.4 reflects the fact that, as with SOC categories, the Census Bureau collapses some detailed NAICS codes into a single broad industry category. For the final estimates, the adjustment factor for the broad category of 813M as used by PUMS was assigned to all the specific NAICS categories provided in the BLS data.

Reviews of the Methodology

Several groups reviewed the entire methodology in different stages of completion before the final estimates were computed by the IDSER/UTSA group. Those who participated in the reviews included the Texas State task force, research team members from the CHWS in New York, and specialists at the CSHO from The University of Southern Mississippi.

The methodology was shared with the entire State task force at a meeting in January 2005. Since Texas was the only State in the Nation requiring the certification of CHWs, availability of that group was significant as it included very knowledgeable individuals about CHWs, researchers, statisticians, and CHWs. The State task force members are listed in Table B.5.

Table B.5 List of Texas State Task Force Members

Name/title	Organization	Category	City
Cecilia Berrios, MA, Community Health Promotion Specialist	Regional and Local Services, DSHS	Workforce Development	Austin
Oscar J. Muñoz, Regional Director	TAMU Center for Housing and Urban Development	Employer/Workforce Development/DSHS Advisory Committee	Laredo
Graciela Camarena, CHW	Migrant Health Promotions	CHW/DSHS Advisory Committee	Mercedes
Lorenza Hernandez, CHW	Texas Tech University, Office of Border Health	CHW/DSHS Advisory Committee	El Paso
Elizabeth A. Kelly, PhD., Volunteer Consultant	De Madres a Madres	Workforce Development/DSHS Advisory Committee	Houston
Martha Quiroz-Romero, M.D.		DSHS Advisory Committee	Arlington
Larry Morningstar., PhD., MPH, Executive Director	Texas Tech Health Science Center	Employer/Workforce Development/DSHS Advisory Committee	El Paso
Frank Cantu, Field Director	Division of Border Health, Health Resources and Services Administration (HRSA)	Workforce Development	Dallas
Margarita Figueroa-Gonzalez, MD, Medical Officer	Office of Rural Health, Health Resources and Services Administration (HRSA)	Workforce Development	Dallas
Humberto (Bert) Ramos, Outreach Coordinator	CHRISTUS SPOHN Hospital	Employer	Corpus Christi
Catherine Gorham, MPA, LSW, CHES	Texas Workforce Commission	Workforce Development	Austin
Jeanette Chardon, MSA	East Austin Community Health Promoters Project, People's Community Clinic	Employer	Austin
Donna C. Nichols, MSEd., CHES, Senior Prevention Policy Analyst	Center for Policy and Innovation, DSHS	Workforce Development	Austin
Edli Colberg, PhD.	Forecasting and Research, HHSC	Data/CHW Estimates	Austin
Kim Davis	Medicaid/CHIP, HHSC	Employer	Austin
Lee Lane, Executive Director	Texas Assoc. of Local Health Officials	Employer	Cedar Park
Sonia Lara	Texas Assoc. of Community Health Centers (TACHC)	Employer	Austin
R. J. Dutton, PhD., Director	Office of Border Health, DSHS	Workforce Development	Austin

Name/title	Organization	Category	City
Camille Pridgen, EdD, Program Director, Instructional Programs, Health Professions Specialist	Texas Higher Education Coordinating Board, Community and Technical Colleges Division	Workforce Development	Austin
Dr. Janet Lawson, Director	Regional and Local Services, DSHS	Workforce Development	Austin
Trinidad Soto, CHW, President, South Texas Promotor Assoc.	UT Pan Am, Border Health Office	CHW	Edinburg
Marlynn May, PhD.	Southwest Rural Health Research Center, School of Rural Public Health, Texas A&M University System HSC	Workforce Development	Bryan
Teresa Hines, Program Director	Health Education Training Centers Alliance of Texas (HETCAT), Texas Tech University Health Science Center	Workforce Development	El Paso
Sherry Dallas Holt, CHW	Maximus	CHW	Gun Barrel City
Leticia Flores, RDH, MPH, CHES, Instructor/Coordinator CHA Program	El Paso Community College	Workforce Development	El Paso
Rosa Torres	El Buen Samaritano	Workforce Development	Austin
Melanie Gilmore	Harris County Public Health and Environmental Services	Employer	Houston

The study advisory group reviewed the entire methodology for the first time on May 25, 2005. During the meeting, five individuals were selected to participate in a special task force. Members included: Ms. Theresa Cosca, Bureau of Labor Statistics; Dr. Susan Chapman, University of California at San Francisco; Dr. Frederick Chen, University of Washington at Seattle; Dr. Steve Murdock, University of Texas at San Antonio; and Dr. Robert Giffin, Insititute of Medicine of the National Academies. Members of the Estimates Task Force were briefed twice in early 2006 on the progress made to date on the estimates. The final estimates were reviewed during a conference call held on August 29, 2006.

The Estimates

Table B.6 shows a comparison of the estimates of the total number of community health workers (CHWs) nationwide for each of the NAICS codes of interest for the 2000 PUMS and 2000 BLS data. Table B.7 shows the combined totals of CHWs for all NAICS categories by State. Summing the State estimates produced a national estimate of the number of paid CHWs.

Table B.6 CHW Estimates, National Comparison by NAICS Code, PUMS-Based and Staffing Patterns-Based

NAICS Code	PUMS (2000)	Staffing Patterns (2000)
6111	560	114
6113	188	144
6211	800	1,119
6214	4,545	9,272
6219	2,136	582
6221	2,501	2,504
6241	14,368	20,353
6244	1,677	1,569
8131	1,772	961
8133	12,378	4,875
8134	5,894	2,069
8139	3,579	806
9211/9992	1,099	3,467
9231/9993	7,887	7,925
All NAICS codes	59,382	55,759

Table B.7 Estimates of Paid CHWs, PUMS-Based and Staffing Patterns-Based

State	PUMS (2000)	Staffing Patterns (2000)
Alabama	566	669
Alaska	221	197
Arizona	980	784
Arkansas	443	549
California	6,834	5,522
Colorado	927	864
Connecticut	805	877
Delaware	164	149
District of Columbia	450	370
Florida	2,745	2,554
Georgia	1,518	1,209
Hawaii	337	206

State	PUMS (2000)	Staffing Patterns (2000)
Idaho	341	232
Illinois	2,632	2,423
Indiana	995	924
Iowa	663	537
Kansas	492	547
Kentucky	707	759
Louisiana	690	806
Maine	513	395
Maryland	1,630	989
Massachusetts	2,181	1,820
Michigan	1,700	1,914
Minnesota	1,565	1,240
Mississippi	362	418
Missouri	940	1,104
Montana	316	189
Nebraska	517	356
Nevada	224	243
New Hampshire	420	325
New Jersey	1,587	1,410
New Mexico	511	482
New York	5,459	6,319
North Carolina	1,543	1,277
North Dakota	162	190
Ohio	2,018	2,419
Oklahoma	626	585
Oregon	908	684
Pennsylvania	3,097	2,827
Rhode Island	324	155
South Carolina	810	519
South Dakota	157	150
Tennessee	832	935
Texas	2,856	3,339
Utah	426	309
Vermont	271	220
Virginia	1,692	1,337
Washington	1,509	1,534
West Virginia	344	490
Wisconsin	1,261	1,317
Wyoming	112	89
National Total	*59,382*	*55,759*

The difference between the estimates from the Census PUMS and the BLS Staffing Patterns Survey shown in Tables B.6 and B.7 provides an estimated range for the number

of CHWs working within a State. The results indicate that the aggregate estimates of CHWs based on BLS and PUMS Census data are similar at the national level (only a 6.1 percent difference between the two estimates), but they differ substantially for some States.

The estimates shown in Chapter 3 of the report are averages of the BLS- and PUMS-based estimates.

Estimates of Volunteer Community Health Workers

There were no existing databases containing information on the number of CHWs who were serving the community in a volunteer capacity. The only information available was an estimate of all volunteer workers by State.[15]

Two sources of data were used to calculate the estimates of volunteer CHWs: the percent of paid workers from the CHW National Employer Inventory (CHW/NEI) and the estimates of paid CHWs calculated using PUMS and BLS data (discussed above).

The number of CHWs by paid and volunteer status was extracted for every State from the CHW National Employer Inventory. The States were then clustered based on geographic location into four groups designated as "Census Regions": Northeast, Midwest, South, and West.

Using the number of paid community health workers reported in the CHW/NEI, the proportion of paid workers was calculated for each Census Region and State.

The standard deviation for the four Census Regions was calculated, followed by a standardized score for every State. This process was carried out in order to identify those States with an extreme proportion of paid CHWs (either too large or too small) as compared to the regional average. According to the CHW/NEI Inventory, 67 percent of CHWs across the United States received compensation by an employer.

The proportion of paid community health workers using results from the CHW/NEI and estimates of paid CHWs were then used to calculate a total number of CHWs by Census Region and State using the following formula:

(Number of paid CHWs from estimates x 100) /
Proportion of paid CHWs from the CHW/NEI

Adjustments for the proportion of paid workers were made for States that were at least 1.0 unit from the standard deviation; reported a proportion of 100 percent paid from the Inventory; or had no responses to the Inventory (only one State). Adjustments were made as follows:

[15] Points of Light Foundation Announces State Volunteering Rates, Research Highlights Impact of Volunteer Center National Network [Internet]. Washington (DC): The Points of Light Foundation; 2004 [updated 2004 Sep 13/cited 2005 Dec 14]. Available from http://www.pointsoflight.org/about/mediacenter/releases/2004/09-13.cfm.

- One standard deviation was added to the proportion of paid CHWs from the Inventory for a negative standard deviation of 1.0 or greater.
- One standard deviation was subtracted from the proportion of paid CHWs from the Inventory if a positive standard deviation of 1.0 or greater was reported.
- One standard deviation was subtracted from the proportion of paid CHWs for States reporting a workforce that was 100 percent paid.

The number of volunteer CHWs was then calculated by subtracting the number of paid CHWs from the total number of CHWs. Table B.8 shows the number of volunteer CHWs per State.

Table B.8 Estimates of Volunteer CHWs

State	No. of Volunteer CHWs
Alabama	274
Alaska	89
Arizona	62
Arkansas	308
California	3,149
Colorado	551
Connecticut	36
Delaware	62
District of Columbia	162
Florida	1,556
Georgia	1,886
Hawaii	30
Idaho	52
Illinois	993
Indiana	375
Iowa	338
Kansas	370
Kentucky	197
Louisiana	723
Maine	95
Maryland	544
Massachusetts	440
Michigan	917
Minnesota	517
Mississippi	440
Missouri	774
Montana	28
Nebraska	437
Nevada	99
New Hampshire	293
New Jersey	45
New Mexico	74

State	No. of Volunteer CHWs
New York	2,350
North Carolina	557
North Dakota	360
Ohio	1,285
Oklahoma	431
Oregon	433
Pennsylvania	658
Rhode Island	303
South Carolina	429
South Dakota	60
Tennessee	349
Texas	1,879
Utah	56
Vermont	26
Virginia	210
Washington	500
West Virginia	214
Wisconsin	504
Wyoming	43
National Total	*28,308*

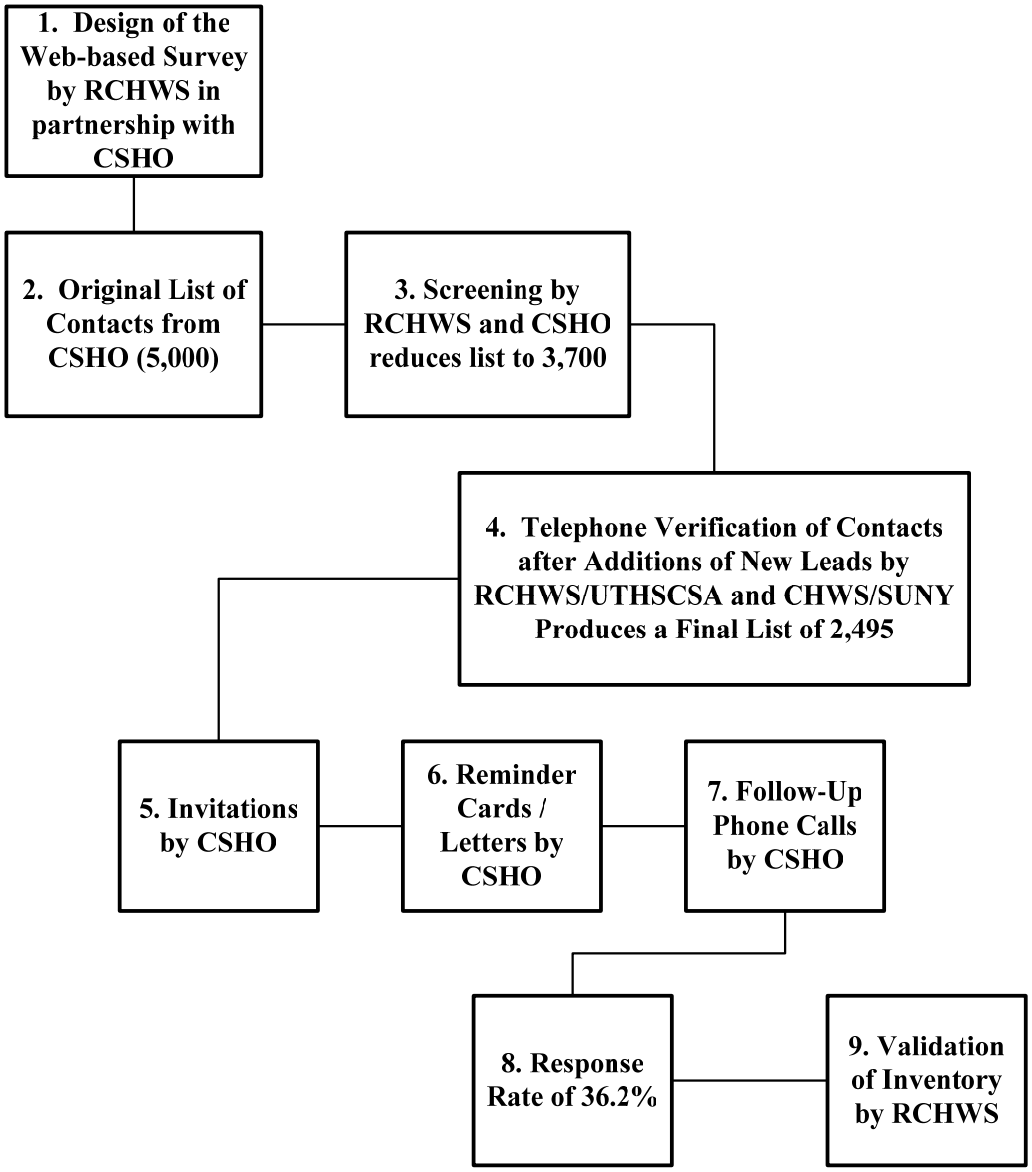
Appendix C: The National Employer Inventory

Appendix C. The National Employer Inventory

The Community Health Worker National Employer Inventory (CHW/NEI) was conducted in partnership with the Center for Sustainable Health Outreach (CSHO) at The University of Southern Mississippi (USM, Hattiesburg).

Figure C.1 charts the process undertaken and indicates the number of employer contacts developed, verified, and invited to participate in this unprecedented national survey with all 50 States represented.

Figure C.1 The Inventory Process



Appendix D: The Inventory Questionnaire

Appendix D. The Community Health Worker (CHW) Programs Inventory

Center for Sustainable Health Outreach in collaboration with the Regional Center for Health Workforce Studies

Thank you for helping us gather information on community health worker programs and to quantify the impact of these programs in our health care system.

To learn more about the Regional Center for Health Workforce Studies (RCHWS), our partner, the Center for Sustainable Health Outreach (CSHO), and the Inventory, please see pages 21-22 of this survey.

If you need assistance in completing the instrument, please contact Paul Philpot at (601) 266-6709, or at Paul.Philpot@usm.edu.

Please fill in the information requested below.

Agency/organization: _____

Mailing address: _____

City: _____ State:_____ Zip:_____

- ❒ Non-Profit *or*
- ❒ Profit

Contact Person

Name: _____

Title: _____

E-mail: _____

Tel.: _____ Ext.: _____

Check all that apply and give your best estimate in blank spaces.

❒ We currently employ CHWs

How many paid? ___

How many volunteer? ___

How many CHW programs? ___

Are programs: <**Please Circle One**>

A. Nationwide
B. Statewide
C. Regional
D. Local

How many HRSA-sponsored programs? ___

❒ We train CHWs How many annually? ____

❒ We work with employers of CHWs How many annually? ____

❒ We employed CHWs in the past, but do not currently train CHWs or work with their employers

❒ We may employ CHWs in the future, but do not currently train CHWs or work with their employers

❒ We are not likely to employ CHWs in the future, and do not currently train CHWs or work with their employers

What titles are used for CHWs in your program? Check all that apply.
(For a basic description of CHWs, please see page 22 of the survey.)

❒ Case Manager
❒ Community Care Coordinator
❒ Community Health Advisor
❒ Community Health Advocate
❒ Community Health Aide
❒ Community Health Educator
❒ Community Health Promoter
❒ Community Health Representative
❒ Community Health Worker
❒ Community Worker
❒ Helper/Supporter

- ❒ Home Visitor/Support Worker
- ❒ Lactation Consultant/Specialist
- ❒ Lay Health Advisor
- ❒ Outreach Specialist
- ❒ Outreach Worker
- ❒ Patient Advocate
- ❒ Patient Navigator
- ❒ Peer Counselor
- ❒ Peer/Teen Educator
- ❒ Promotores(as)
- ❒ Public Health Aide
- ❒ Other (specify): _____

Based on the number of CHW programs you indicated as part of your organization on page 2, please list programs below starting with largest program.

Program Name	Mailing Address	City	State	Zip Code	HRSA Sponsored?
					Y / N
					Y / N
					Y / N
					Y / N
					Y / N

1. Objectives

Please indicate your program's primary purpose (select only one):

- ❒ Access to care/services
- ❒ Community development
- ❒ Direct care
- ❒ Intervention
- ❒ Primary prevention
- ❒ Secondary prevention
- ❒ Tertiary prevention
- ❒ Other (specify): _____

Health problems and issues addressed by the CHW program (please mark all that apply):

- ❒ Alzheimer's disease or Dementia
- ❒ Arthritis
- ❒ Asthma
- ❒ Breastfeeding
- ❒ Cancer (specify type):
  - o All
  - o Breast
  - o Cervical
  - o Colorectal
  - o Leukemia/Lymphoma
  - o Lung
  - o Mouth/Throat
  - o Ovarian/Uterine
  - o Prostate
  - o Skin
  - o Stomach
- ❒ Cardiovascular disease
- ❒ Child health
- ❒ Children with special healthcare needs
- ❒ Diabetes
- ❒ Family planning
- ❒ Gay/Lesbian/Bisexual/ Transgendered issues
- ❒ Heart disease
- ❒ High blood pressure
- ❒ HIV/AIDS
- ❒ Immunizations
- ❒ Infant health
- ❒ Injuries
- ❒ Lead poisoning
- ❒ Low birth weight prevention/follow-up
- ❒ Men's health
- ❒ Mental health
- ❒ Nutrition
- ❒ Obesity
- ❒ Osteoporosis
- ❒ Physical activity
- ❒ Pregnancy/Prenatal care
- ❒ Premature birth prevention/follow-up
- ❒ Sexual behavior
- ❒ Stroke
- ❒ Substance abuse
- ❒ Tobacco control

- ❒ Tuberculosis
- ❒ Violence
- ❒ Women's health
- ❒ Emergency response
- ❒ Other problems or issues (specify): _____

Groups with whom your program is formally affiliated (or partnered) to deliver services (please mark all that apply):

- ❒ Agency/organization's location
- ❒ Community-based agency/organization
- ❒ Community college
- ❒ Faith-based group
- ❒ Hospital/medical clinic
- ❒ IHS/Tribal organization
- ❒ Local health department
- ❒ Local housing authority
- ❒ Non-profit organization
- ❒ School or School District
- ❒ State health department
- ❒ State Medicaid program
- ❒ University/medical School
- ❒ Other (specify): _____

In what year was your CHW program established? _____

2. Services

Services provided by CHWs to clients (please mark all that apply):

- ❒ Assistance in gaining access to medical services or programs
- ❒ Assistance in gaining access to non-medical services or programs
- ❒ Building community capacity
- ❒ Building individual capacity
- ❒ Case management
- ❒ Community advocacy
- ❒ Counseling
- ❒ Cultural mediation
- ❒ Interpretation
- ❒ Mentoring
- ❒ Patient navigation
- ❒ Provide culturally appropriate health promotion/education

- ❒ Provide direct services:
  - o Measure heights and weights
  - o Perform lab tests
  - o Take vital signs
- ❒ Risk identification
- ❒ Social support
- ❒ Translation
- ❒ Transportation
- ❒ Other (specify): _____

3. Population Served

Service Area

List the county(ies) and state(s) or territory(ies) where the CHW program operates. If more than 5 counties, list the 5 largest counties/states or territories where this program operates.

County	State/Territory

The area served by the CHW program is (please mark all that apply):

- ❒ an urbanized area (an area or place with a population > 50,000)
- ❒ an urban area (an incorporated or unincorporated area or place with a population > 2,500)
- ❒ a rural area (an area or place with a population < 2,500 and low population density)
- ❒ both urban and rural areas (the program serves both types)
- ❒ a suburban area (a place that is adjacent to or included in an urbanized area)

The residents served by the CHW program come from (please mark one):

- ❒ a specific neighborhood or neighborhoods
- ❒ within the entire city
- ❒ the city and the vicinity
- ❒ one county
- ❒ a multicounty area or region
- ❒ anywhere in the state
- ❒ other (specify): _____

Where do the CHWs work or deliver program services? (Please mark all that apply):

- ❒ Agency or organization's location
- ❒ Client's home
- ❒ Community events
- ❒ Community health center
- ❒ Faith-based organization
- ❒ Health maintenance organization
- ❒ Hospital
- ❒ Migrant camp
- ❒ Mobile unit
- ❒ Non-profit organization
- ❒ On the street
- ❒ Private clinic
- ❒ Public health clinic
- ❒ Public housing unit
- ❒ School
- ❒ Client's work site
- ❒ CHW's home
- ❒ Shelters
- ❒ Teen centers
- ❒ Other (specify): _____

Number of clients served annually by the CHWs in your program (please mark one):

- ❒ 1-100
- ❒ 101-250
- ❒ 251-500
- ❒ 501-750
- ❒ 751-1,000
- ❒ 1,001-2,500
- ❒ 2,501-5,000
- ❒ 5,001 or more

Target population served (please mark all that apply to your program's targeted population):

Race/Ethnicity

- ❒ American Indian/Alaskan Native (specify): _____
- ❒ Asian/Pacific Islander (specify): _____
- ❒ Black/African-American
- ❒ Hispanic/Latino(a) – any race (specify): _____
- ❒ Non-Hispanic White
- ❒ Other race/ethnicity (specify): _____

Gender

- ❒ Female
- ❒ Male
- ❒ Transgendered (cross dressers, transsexuals, transvestites)

Age

- ❒ Under 1 year
- ❒ 1-5
- ❒ 6-12
- ❒ 13-17
- ❒ 18-21
- ❒ 22-50
- ❒ 50-65
- ❒ 65+

Special Populations

- ❒ Immigrants
- ❒ Migrant workers
- ❒ Isolated rural residents
- ❒ Colonia residents
- ❒ Homeless
- ❒ Uninsured (SCHIP, Medicaid eligible)
- ❒ Other (specify): _____

Client Recruitment Methods

What methods do you use to recruit clients? (Please mark all that apply):

- ❒ We have **no** formal recruitment effort
- ❒ We advertise using:
  - **( )** Billboards
  - **( )** Direct mail
  - **( )** Newspapers
  - **( )** Radio
  - **( )** Television
  - **( )** Other: _____
- ❒ We ask for churches and other nonprofits to identify new clients
- ❒ We conduct outreach activities, such as health fairs, community events, etc.
- ❒ We conduct screening programs
- ❒ We mail or post flyers/posters/brochures
- ❒ We use a mobile unit
- ❒ We use referrals from clients
- ❒ We use referrals from other agencies/providers
- ❒ We use door-to-door inquires
- ❒ Word-of-mouth
- ❒ Other (specify): _____

4. Funding Sources

Funding sources for your CHW program (Please mark all that apply):

Percent Total Funding	**Agency Type**	**Agency <Please Circle or Specify>**
%	☐ Federal agency	- CDC - HRSA - NIH - USDA
%	☐ State agency	- Education - State health depts. - Human/social services - Labor/workforce
%	☐ Local agency/government	-Specify: _____
%	☐ Private foundation	-Specify: _____
%	☐ Non-profit organizations	-Specify: _____
%	☐ Other public funding	- City - County - Multicounty - Parish - Regional group
%	☐ Other sources	-Specify: _____
100%		

Are services provided by CHWs eligible for reimbursement?

- ❒ Yes
- ❒ No

If yes, please mark all that apply:

- ❒ State Children's Health Insurance Program (SCHIP)
- ❒ Medicaid
- ❒ Medicare
- ❒ (Private) Health insurance

5. Skills

Please mark skills that are required of CHWs prior to hire/volunteer with your organization/agency:

- ❒ Advocacy skills
- ❒ Bilingual skills
- ❒ Capacity building skills
- ❒ Communication skills
- ❒ Confidentiality skills
- ❒ Interpersonal skills
- ❒ Knowledge base
- ❒ Organizational skills
- ❒ Service coordination skills
- ❒ Teaching skills
- ❒ Other skills (specify): _____

6. Characteristics

Based on the number of paid and volunteer CHWs you indicated as part of your organization on page 2, please estimate the number of CHWs in each category below.

Race/Ethnicity	**Paid**	**Volunteer**
Non-Hispanic White		
Hispanic/Latino(a) -any race		
Black/African-American		
American Indian/Alaskan Native		
Asian/Pacific Islander		
Other race/ethnicity		
Total		

Age	**Paid**	**Volunteer**
Less than 30		
30-50		
Over 50		
Total		

Gender	**Paid**	**Volunteer**
Female		
Male		
Total		

Highest Education	**Paid**	**Volunteer**
Less than HS		
HS or GED		
Some college		
Bachelors Degree+		
Associates Degree		
Total		

Other	**Paid**	**Volunteer**
Certified		
Employed less than 6 months?		

Communication with clients

Do your program's CHWs speak the languages of those they serve?

- ❒ Yes: (__all __some)
- ❒ No

Which languages do your program's CHWs use to communicate with clients?

- ❒ English (__all __some)
- ❒ French (__all __some)
- ❒ Chinese (__all __some)
- ❒ Sign (__all __some)
- ❒ Spanish (__all __some)
- ❒ Vietnamese (__all __some)
- ❒ Tribal (specify)_____ (__all __some)
- ❒ Other (specify)_____ (__all __some)

7. Compensation and Incentives

The next few questions ask for information on paid or volunteer workers who are part of your CHW program.

Number of CHWs working full-time: ___ Number of CHWs working part-time: ___

In the following section, please indicate starting wages for new hires and wages for experienced (paid) CHWs.

	Range of wages	
CHW job title	***new hires***	***top earners***
	$ _____ per hr.	$ _____ per hr.
	$ _____ per hr.	$ _____ per hr.
	$ _____ per hr.	$ _____ per hr.
	$ _____ per hr.	$ _____ per hr.
	$ _____ per hr.	$ _____ per hr.
	$ _____ per hr.	$ _____ per hr.
	$ _____ per hr.	$ _____ per hr.

Number of CHWs who work:

Hours/Week	**Paid**	**Volunteer**
Less than 20		
20-39		
40 or more		
Total		

Are volunteers' expenses reimbursed?

❒ Yes

❒ No

(If yes, specify allowable expenses):

_____

_____

_____

Do any volunteers receive stipends from the program?

- ❒ Yes
- ❒ No

(If yes, what criteria are used?):

_____

_____

_____

Do workers (paid or volunteer) receive any of the following benefits? (Please mark all that apply):

- ❒ Child care
- ❒ Commuter subsidy
- ❒ Educational leave
- ❒ Health insurance
- ❒ Mileage reimbursement
- ❒ Parking
- ❒ Pension or retirement plan
- ❒ Personal leave
- ❒ Sick leave
- ❒ Tuition assistance
- ❒ Vacation accrual
- ❒ Other (specify): _____

8. Recruitment and Training

What is the average number of years worked in your program by CHWs?

- ❒ Less than 1 year
- ❒ 1-2 years
- ❒ 3-4 years
- ❒ 5 years or more

CHW Training Profile

Are CHWs required to have received any formal education or training prior to being hired or volunteering?

- ❒ Yes
- ❒ No

(If yes, what type?):

- ❒ GED/High school diploma
- ❒ Vocational-technical training
- ❒ College certificate program
- ❒ College Associate's degree
- ❒ College Bachelor's degree
- ❒ Other (specify): _____

Once hired or having volunteered, does the new CHW receive additional training?

- ❒ Yes
- ❒ No

(If yes, what type?):

- ❒ Case management meetings
- ❒ Classroom instruction
- ❒ Continuing education or training (classes, conferences, seminars, etc.)
- ❒ Initial orientation
- ❒ Mentoring
- ❒ On-site technical assistance
- ❒ Other (specify): _____

Please mark all of the skills for which your CHWs are trained:

- ❒ Ability to access resources
- ❒ Being a CHW
- ❒ Client advocacy
- ❒ Coordination of services (medical and social)
- ❒ Cultural awareness
- ❒ Disease specific education
- ❒ Education/Training/Counseling
- ❒ First aid/CPR
- ❒ Home visiting
- ❒ Interpersonal communication skills
- ❒ Knowledge of health issues
- ❒ Knowledge of medical services
- ❒ Knowledge of social services

- ❒ Leadership
- ❒ Organizational skills
- ❒ Patient navigation
- ❒ Record keeping/data reporting skills
- ❒ Other (specify): _____

Please specify the name and sources of any specific curriculum or training materials used for CHW training:

_____

_____

_____

_____

Who conducts the training of your CHWs? (Please mark all that apply):

- ❒ CHW supervisor
- ❒ Doctor
- ❒ Health educator
- ❒ Nurse
- ❒ Nutritionist
- ❒ Other CHWs
- ❒ Outside contractor
- ❒ Psychologist
- ❒ Social worker
- ❒ Other (specify): _____

Methods used to recruit CHWs (Please mark all that apply):

- ❒ Advertising
- ❒ Word-of-mouth/Networking

Type of referrals (Please mark all that apply):

- ❒ CHW program staff
- ❒ Community members
- ❒ Healthcare providers
- ❒ Human services providers
- ❒ Other CHW programs
- ❒ Other community groups
- ❒ Other (specify): _____

Methods used to retain or give recognition CHWs in your program (Please mark all that apply):

- ❒ Academic credit
- ❒ Adding fringe benefits
- ❒ Certificate from program
- ❒ Conference participation
- ❒ Graduation ceremony
- ❒ Program awards or other recognition
- ❒ Promotions
- ❒ Wage increase
- ❒ Other (specify): _____

Please describe the career opportunities (how a CHW can advance) available to CHWs in your program:

_____

_____

_____

_____

_____

_____

9. Effectiveness

Does your program conduct a formal evaluation to assess its success and/or progress in addressing the program's objectives?

- ❒ Yes
- ❒ No

Is formal evaluation mandated by your funding agency?

- ❒ Yes
- ❒ No

If your program is conducting or has conducted an evaluation, who is conducting or has conducted it?

- ❒ College or university personnel
- ❒ Program staff
- ❒ Private consultants
- ❒ Other (specify):_____

What do you collect data on (check all that apply):

- ❒ CHWs themselves
- ❒ Clients/Families served
- ❒ Community/system
- ❒ Outcomes
- ❒ Policy
- ❒ Services

Are findings of evaluations available?

- ❒ Yes
- ❒ No

If findings are available:

- ❒ Respondent can send a copy
- ❒ Please contact respondent to receive a copy

Describe your CHW program's major accomplishments, to date:

_____

_____

_____

_____

In the space below, please describe the type of evaluation methodology being used and briefly discuss the results. We would also like to request copies, if you have them available, of the description of the program design, any data collection forms or other instruments that you use to gather information, and a summary of the program evaluation results. These materials can be mailed to the address shown on page 19 of the survey.

_____

_____

_____

_____

_____

_____

_____

_____

Please mark all of the ways in which your evaluation results are utilized by the CHW program:

- ❒ Annual report
- ❒ Internal reports
- ❒ Peer-reviewed journal articles
- ❒ Program materials
- ❒ Program Web site
- ❒ Report to board or advisory committee
- ❒ Report to clients
- ❒ Report to funding agencies
- ❒ Report to legislative body
- ❒ Report to media
- ❒ Report to other external bodies
- ❒ Report to partners
- ❒ Report to the public
- ❒ Report to staff

The Center for Sustainable Health Outreach also intends to share information regarding evaluations with the Southwest Center for Community Health Promotion. They may contact you about being included in the University of Arizona Community Health Worker Evaluation Tool Kit project: **(Please mark this space _____ if you want your evaluation data and instruments withheld.)**

10. Challenges

What barriers/obstacles have you encountered in trying to implement a CHW program? (**Limit** to three checkboxes):

- ❒ Lack of stable funding
- ❒ Inadequate skill/experience in supervising CHWs
- ❒ Hostility/competition from other health care workers
- ❒ CHW services not reimbursable
- ❒ Lack of solidarity among CHW programs
- ❒ Lack of training resources
- ❒ Turnover due to low wages
- ❒ Shortage of qualified applicants
- ❒ Lack of understanding about CHWs' contributions to community
- ❒ Other (specify): _____

11. Reports

Program Materials and Resources

In order to gain increased knowledge about existing Community Health Worker programs, the Center for Sustainable Health Outreach requests that you share copies of any materials that are currently used in your program, such as the information you provide to clients or with CHWs; brochures or promotional material; copies of articles or reports; and, your evaluation plan, tools or instruments, and summary results.

Please mail a copy of these materials to:
Attn: The Community Health Worker Programs Inventory
The University of Southern Mississippi
Center for Sustainable Health Outreach
118 College Drive # 10015
Hattiesburg, MS 39406-0001

For those materials that you cannot send, please describe the items below. If you need additional space, please list the items on another sheet and mail it to us.

Title	Author	Year	Type	Published (Y/N)?

Other Instructions

STATEMENT CONCERNING SHARING OF INFORMATION:

The Center for Sustainable Health Outreach intends to share parts of the information gathered by the Community Health Worker Programs Inventory with the Centers for Disease Control and Prevention (CDC) for inclusion in the Combined Health Information Database. (**Please mark this space ____ if you want your information withheld**.)

Submitting the Questionnaire

This concludes the Community Health Worker Inventory. We truly appreciate your time, participation and willingness to share information about your program. Thank you again for helping us gather information on community health worker programs and to quantify the impact of these programs in our health care system.

Please mail the questionnaire to the following address:
Attn: The Community Health Worker Programs Inventory
The University of Southern Mississippi
Center for Sustainable Health Outreach
118 College Drive # 10015
Hattiesburg, MS 39406-0001

Please use the following URL (**http://chw.uthscsa.edu)** to go to the CHW Inventory Login Page.

More About Us

The Center for Sustainable Health Outreach (CSHO -- www.usm.edu/csho) was formed in 1999 to provide support and technical assistance to CHWs and CHW programs. The Center is the result of collaboration between The University of Southern Mississippi (USM) in Hattiesburg and the Harrison Institute for Public Law at Georgetown University Law Center in Washington, D.C. It provides assistance to CHWs in the following areas: program development, funding and sustainability; public policy development and strategic planning; program evaluation; and education and training. CSHO also assists CHWs and CHW programs by facilitating partnerships with potential funding sources, policy makers, health systems, and community organizations. The Center serves as a national point of contact for CHWs and CHW programs and provides them with reliable up-to-date information on emerging trends in the field. The Center's responsibilities are divided between the two collaborating institutions. The Georgetown staff of CSHO is responsible for policy development and sustainability information. The USM staff of CSHO is responsible for education, training and evaluation.

The Regional Center for Health Workforce Studies at CHEP (RCHWS -- www.uthscsa.edu/rchws) is one of six regional centers in the country operating under the oversight of the National Center for Health Workforce Analysis of the Bureau of Health Professions, Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (DHHS). This specialized research facility is housed in the Center for Health Economics and Policy (CHEP) of The University of Texas Health Science Center at San Antonio. CHEP was founded in 1987 to address problems of efficiency, effectiveness, and equity in the delivery of adequate health care. Operating within the Medical School, Dental School, Graduate School of Biomedical Sciences, Nursing School, and School of Allied Health Sciences, CHEP draws expertise from a broad range of health care specialties as it conducts research on the supply and demand for health care in our changing social, economic, and industrial environments. RCHWS at CHEP serves the five-state region of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas, has a special mandate to address the health workforce issues of the entire United States/Mexico border region, and participates in numerous national studies on the health workforce with a focus on access to care for underserved populations.

More on the Inventory

More on The Community Health Worker (CHW) Inventory

Community Health Workers have been contributing to the well being of communities for a very long time but, only recently, are being recognized as a significant component of the health workforce. Yet, information needed to guide policies that would support, promote and integrate CHWs in the health delivery system is scarce, fragmentary or altogether unavailable. This inventory is a first comprehensive and systematic assessment of CHWs in their working environment. A thorough response to this survey is vital to developing adequate data about this extraordinary community-based phenomenon for CHW voluntary organizations, employers, and policy makers.

"Community Health Worker*" (CHW) is an umbrella term covering a variety of job titles and responsibilities, both paid and unpaid. CHWs may be known in different communities as lay health advisors, community health aides, outreach workers, community health representatives, promotores(as), or peer educators (to name a few). One general condition is that CHWs rely for their effectiveness on membership in, or other close relationship to, the community served. Job duties include one or more of the following, generally for underserved communities: (1) Acting as a "bridge" or cultural mediator between communities and the health and social service systems; (2) Providing culturally appropriate and accessible health education and information; (3) Assuring that people get the services they need, including provision of referrals and follow-up; (4) Providing informal counseling and social support; (5) Advocating for individual and community needs; (6) Providing direct services which do not require other professional licensure (such as nursing); and, (7) Building individual and community capacity.
*The above description is largely adapted from Rosenthal EL, Wiggins N, Brownstein JN et al., *National Community Health Advisor Study.* University of Arizona, 1998.

The Center for Sustainable Health Outreach (CSHO) and other organizations supporting CHWs have been working with the Health Resources and Services Administration (HRSA) of the Department of Health and Human Services (DHHS), including the Maternal Child Health Bureau (MCHB) and the Office of Rural Health Policy and other programs, to create a national CHW evaluation project, designed to show the impact of programs incorporating CHWs on the health of their communities.

While adequate funding for the national CHW evaluation project is being marshaled, an inventory of organizations employing or assisting community health workers is being developed by CSHO, with the support of the W.K. Kellogg Foundation. The inventory, a first basic step toward a national evaluation project, consists of a Web-based survey complemented, when necessary, by printed questionnaires and telephone interviews to reach as many organizations as possible. As CSHO was completing the testing of the inventory instrument, a complementary project - The Community Health Worker National Workforce Study -- was proposed by the Regional Center for Health Workforce Studies (RCHWS) at CHEP and funded by HRSA. The RCHWS project is aimed at producing a comprehensive national profile of the CHW workforce and in-depth studies of selected states to better describe models of care that employ CHWs, estimate their availability and potential, and identify facilitators and barriers to CHW demand and supply.

The work of the RCHWS and CSHO are obviously complementary to one another and the two centers decided to collaborate. Both projects are now benefiting from the unique strengths and resources of the two organizations. The list of potential respondents combines known CHWs' employers with a sample of those organizations fitting the profile of "possible" CHW employers. The survey asks for an accurate estimate of employed CHWs, their job title, descriptive information on the program engaging CHWs, the type of work they perform, the type of funding sources utilized and the expected long-term sustainability of the program.

Appendix E1: The Study Interviews - Employers

Appendix E1.
Regional Center for Health Workforce Studies
The University of Texas Health Science Center at San Antonio
The Community Health Worker (CHW) National Workforce Study
Employer-guided telephone interviews to complement studies of the States of
Arizona, Massachusetts, New York, and Texas

Respondent's Name: _____

Agency/Organization: _____

City: _____ Telephone Number: _____

Has respondent provided answers to the online survey?

- ❒ Yes, survey has been completed
- ❒ Yes, but survey is incomplete (some questions have not been answered)
- ❒ No response to survey (there are no answers)
- ❒ Other (specify): _____

Date of interview: May / June ____, 2006

Time of interview: _____ am / pm to _____ am / pm

Interviewer: _____

Introduction

Thank you for agreeing to participate in this interview.

You have been identified as one of a select group of individuals in Texas (Arizona, New York, Massachusetts) who has the opportunity to contribute to the first federally sponsored national workforce study of community health workers (CHWs). This unprecedented study will use information provided by you and other informants in the State to draw a profile of the community health worker workforce. An important part of this profile is learning about the experience of employers with CHWs.

During the interview, we will focus on four main areas: (1) the contributions that community health workers have made/can make to the organization, (2) what skills are in demand and what positions are available within the organization for CHWs, (3) the demand for CHWs in your organization and how easy or difficult it has been for your organization to employ CHWs, and (4) what is your experience and future expectations for the utilization of CHWs within your organization.

Before we begin, I'd like to reassure you that your identity and the information you provide during this interview will be kept strictly confidential. (*If asked, state: All information provided by you in the interview will be reviewed and analyzed by the research team and is confidential.*)

Do you have any questions at this point?

We estimate this interview will take approximately 45 minutes of your time. Have I called you at a good time?

(If not, what time do we need to end and when can we call you again? _____)

If respondent has questions, ask: Would you like to discuss your questions with me or would you prefer to speak to the Principal Investigator?

If he/she requests to speak to the PI, state: You can contact the project's Principal Investigator, Dr. Antonio Furino, at 210-567-3168.

Profile of the Respondent

What is your current position in the organization?

- ❒ CEO
- ❒ Director
- ❒ Program Director
- ❒ Program Coordinator
- ❒ Other (specify): _____

How many years have you worked in your current position? _____

Do you work directly with CHWs?

- ❒ Yes
- ❒ No

How many years have you worked with CHWs? ____

Did you work as a CHW in the past?

- ❒ Yes—If yes, how long did you work as a CHW? ___ (years)
- ❒ No

Additional comments:

_____

_____

_____

_____

_____

Profile of the Organization

Is your agency a __ (for) profit or __ non-profit?

- ❒ 501c3 entity
- ❒ State agency
- ❒ Umbrella agency
- ❒ Other (specify): _____

What is the primary industry of your organization?

- ❒ 6111 – Elementary, secondary school
- ❒ 6113 – College or university
- ❒ 6211 – Offices of physicians
- ❒ 6214 – Outpatient care centers
- ❒ 6219 – Other ambulatory health care services
- ❒ 6221 – General, medical, surgical hospitals
- ❒ 6241 – Individual family services
- ❒ 6244 – Child, daycare services
- ❒ 8131 – Religious organizations
- ❒ 8133 – Social advocacy organizations
- ❒ 8134 – Civic advocacy organizations
- ❒ 9190 – Federal government (excluding postal services)
- ❒ 9290 – State government (excluding health, education)
- ❒ 9390 – Local government (excluding health, education)
- ❒ Other (specify): _____

Is sustainability of the CHW program:

- ❒ Long-term (part of institution): _____
- ❒ Short-term (program only): _____

Does the Health Resources and Services Administration provide funding for the CHW program(s)?

- ❒ Yes
- ❒ No

Which population is targeted for services by CHWs in your program(s)?

- ❒ By health condition: _____
- ❒ By demographics: _____
- ❒ Other (specify): _____

When did your organization first hire paid, or recruit volunteer, CHWs? **Year** _____

Do you have paid CHWs in your organization?

- ❒ Yes, how many: _____
- ❒ No

Do you have volunteer CHWs in your organization?

- ❒ Yes, how many: _____
- ❒ No

Do you have certified CHWs in your organization? (NOTE: Only applicable to Texas.)

- ❒ Yes, how many: _____
- ❒ No

General - Profile of the CHW

Now I would like to talk about community health workers in your organization.
(NOTE FOR INTERVIEWERS: Interviewers will use the term "community health worker" throughout the interview to describe the workforce/employees. The employer may use any term that they would normally use to describe this workforce. For instance, lay health advisor; community health representative; and *promotor(a) de salud* would all be considered "community health workers" for the purposes of the National Workforce Study and for discussion during interviews.)

Is the term "community health worker" used in your organization to identify a certain type of employed personnel?

- ❒ Yes
- ❒ No

If not, what is the title used for positions filled by CHWs?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Community health advocate		
Community health liaison		
Family support worker		
Lay outreach worker		
Promotor(a)		
Other (specify):		
Other (specify):		
Other (specify):		

Do you know what official titles are used for positions filled by CHWs (i.e. the titles used in reporting employment data to Bureau of Labor Statistics or to the State Employment Commission)?

- ❒ Yes, note title(s): _____
- ❒ No
- ❒

Additional comments:

_____

_____

PAID CHWs – Job description

Please describe the functions of **paid** or **employed** CHWs in your organization.

- ❒ I. Assistance in gaining access to medical services or programs
- ❒ I. Assistance in gaining access to social services or programs
- ❒ I. Building community capacity
- ❒ I. Building individual capacity
- ❒ I. Case management
- ❒ I. Community advocacy
- ❒ I. Counseling
- ❒ I. Cultural mediation
- ❒ I. Interpretation
- ❒ I. Mentoring
- ❒ I. Patient navigation
- ❒ I. Provide culturally appropriate health promotion/education
- ❒ I. Provide direct services
- ❒ I. Risk identification
- ❒ I. Social support
- ❒ I. Translation
- ❒ I. Transportation
- ❒ O. Conducting surveys of target population
- ❒ O. Enroll population into health insurance programs
- ❒ O. Determine eligibility for services
- ❒ O. Provide health screenings
- ❒ O. Refer population to health care system
- ❒ O. Refer population to social services system
- ❒ Other (specify): _____

Additional comments:

VOLUNTEER CHWs – Job description

Please describe the functions of **volunteer** CHWs **serving** in your organization.

- ❒ I. Assistance in gaining access to medical services or programs
- ❒ I. Assistance in gaining access to social services or programs
- ❒ I. Building community capacity
- ❒ I. Building individual capacity
- ❒ I. Case management
- ❒ I. Community advocacy
- ❒ I. Counseling
- ❒ I. Cultural mediation
- ❒ I. Interpretation
- ❒ I. Mentoring
- ❒ I. Patient navigation
- ❒ I. Provide culturally appropriate health promotion/education
- ❒ I. Provide direct services
- ❒ I. Risk identification
- ❒ I. Social support
- ❒ I. Translation
- ❒ I. Transportation
- ❒ O. Conducting surveys of target population
- ❒ O. Enroll population into health insurance programs
- ❒ O. Determine eligibility for services
- ❒ O. Provide health screenings
- ❒ O. Refer population to health care system
- ❒ O. Refer population to social services system
- ❒ Other (specify): _____

Additional comments:

Which departments, **programs or projects** in your organization utilize CHWs?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Diabetes		
Cancer _____		
Community Outreach		
Head Start		
Health education		
Healthy Families		
Healthy Start		
HIV/AIDS		
Hypertension		
Maternal and Child Health		
Pregnancy Prevention		
Prevention		
WIC		
Women's Health		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Do CHWs work **alone or as part of a team**? (Describe work settings as well).

	Paid CHWs	**Volunteer CHWs**
Alone		
Part of team		
Other (specify):		

If the CHW is part of a team, who are the other **team members**?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Case manager		
Health educator		
Nurses		
Nutritionist		
Other CHWs		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Qualifications

Knowledge

What knowledge base do you seek when looking for CHWs?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
CHW roles and functions		
Community		
General health		
Health care system		
Health insurance coverage		
Medicaid, Medicare, SCHIP		
Social services system		
Specific diseases/health issues		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Skills

What are the minimum skills you are seeking in CHWs at time of hire?

What are the desired skills you would like for paid CHWs to have at hire?

	Paid CHWs		**Volunteer CHWs**	
Skills	Minimum	Desired	Minimum	Desired
Advocacy skills – ability to "speak up" for patients and communities to overcome barriers, act as intermediary with bureaucracy				
Bilingual skills – be fluent in the preferred language of clients, translate technical terms				
Capacity building skills – empowerment skills; leadership skills; influence communities and individuals to change behavior and take more control of their own health				
Communication skills – ability to listen, use oral & written language confidently				
Computer skills				
Confidentiality skills – ability to keep matters private, comply with HIPAA laws				
Interpersonal skills – friendliness, sociability, counseling & relationship building skills, ability to provide support and set appropriate boundaries				
Organizational skills – ability to set goals and develop an action plan, manage time, keep records				
Service coordination skills – ability to identify & access resources; network & build coalitions; make and follow-up on referrals				
Teaching skills – ability to share information, respond to questions & reinforce ideas, adapt methods to various audiences				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

Are the skills that you are seeking in CHWs, as an employer, easily found at hire? Can they be developed through training?

	Paid CHWs		**Volunteer CHWs**	
	At hire	Training	At hire	Training
Yes				
No				

Additional comments:

Are the knowledge-bases that you are seeking in CHWs, as an employer, easily found at hire? Can they be developed through training?

	Paid CHWs		**Volunteer CHWs**	
	At hire	Training	At hire	Training
Yes				
No				

Additional comments:

Are different positions available for **different skills** levels as a CHW in your organization?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

When seeking to fill a CHW position, is there a sufficient **supply of workers** with the minimum qualifications?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

_____

_____

And, when seeking to fill a position, is there a sufficient **supply of experienced CHWs**?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

_____

_____

Traits

Are there any other traits that you look for in CHWs?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Membership in the community		
Recognized community leader		
Shared cultural experience		
Shared health experience		
Similar demographics as target pop.		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Cultural competence

(NOTE FOR INTERVIEWERS: Following is a description of "cultural competence" that can be used to describe the term to respondent.) Now I would like to ask you about a quality that is often attributed to CHWs—that is, I'd like to talk about cultural competence. *Cultural competence may be defined as the ability of understanding and working within the context of the culture of the community being served*.

Do you agree with this general definition?

- ❒ Yes
- ❒ No

Would you define "cultural competence" differently?

- ❒ Yes
- ❒ No

If so, how would you define it?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
they live/have lived there for some time		
they grew up there		
they are accepted as part of the community even if they are new here		
they are already known and trusted by people in this community		
they have had similar life experiences to people in this community		
they come from a similar cultural background		
they understand some aspect of the disease		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

How important is it that a CHW **be culturally competent**?

Score	Paid CHWs	Volunteer CHWs
1-- Not important		
2-- Somewhat important		
3-- Important		
4-- Very important		
5-- Extremely important		

Additional comments:

Now, "cultural competence" is sometimes viewed of in terms of "membership" of CHWs in the community they are serving, that is, being "indigenous" to that community. How important is it that a CHW **be from the community** in which he/she works?

Score	Paid CHWs	Volunteer CHWs
1-- Not important		
2-- Somewhat important		
3-- Important		
4-- Very important		
5-- Extremely important		

Additional comments:

In your opinion, if an **experienced CHW, from a different community**, applied for an available opening (in your organization) would you hire them and why? That is, how would you evaluate his/her suitability for hire if he/she is not from the target community?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
No—we only hire (agencies should only hire) actual community members		
Yes—if they are accepted or *seen* as part of the community, even if they are new		
Yes— if they are already known and trusted by people in the community		
Yes—if they come from a similar cultural background		
Yes—if they have already worked in the community for some time		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Demand for CHWs (Why the organization uses CHWs)

Why does your organization **employ** CHWs?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Funding source requirement		
CHWs are viewed as cost effective resources		
CHWs are connected to/"know" the target population		
Interest by management to test the CHW/*promotora* model		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Why are CHWs important to your organization? (In other words, what do CHWs contribute that makes them different from other workers?) Which of these are the key factors?

Possible answers:	**Paid CHWs**	**Key?**	**Volunteer CHWs**	**Key?**
Can help reach clients who couldn't be reached before				
Helped improve communication between providers and clients				
Program/services are now more responsive to community's needs				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

What factors, external to your organization, appear to induce the hiring of CHWs? Which of these are the key factors?

Possible answers:	**Paid CHWs**	**Key?**	**Volunteer CHWs**	**Key?**
Economic conditions				
Funding streams				
Catchment areas				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

Have **effectiveness measures** suggested that CHWs are important to your program?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

If **yes**: Have **any types of evaluations** been conducted which try to measure the effectiveness of CHWs?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

If **yes**: What types of evaluations have been conducted?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Formal evaluations		
Cost analysis (increased revenue)		
Surveys		
Collect output data		
Track outcomes		
Other (specify):		
Other (specify):		
Other (specify):		

If **no** formal evaluations have been conducted **how else does your organization know** that CHWs are being effective?

- ❒ Patients state "they feel better about their health"
- ❒ Health care practitioners report improved compliance
- ❒ Social service representatives report improved compliance
- ❒ CHWs state "they feel they are making a contribution"
- ❒ Other (specify):_____

Additional comments:

How do you measure the productivity of CHWs?

Output measure	**Paid CHWs**	**Volunteer CHWs**
Number of clients served		
Number of services provided		
Other (specify):		
Other (specify):		
Other (specify):		

Are community health workers as productive as you expected?

Score	**Paid CHWs**	**Volunteer CHWs**
1-- Not productive		
2-- Somewhat productive		
3-- Productive		
4-- Very productive		
5-- Most productive		

Additional comments:

Employers' Experience

How does your organization **locate (recruit)** individuals who will be hired as CHWs?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Advertising		
Employment agencies		
Networking, word-of-mouth		
Referrals from _____		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Have you encountered any **obstacles to hiring CHWs**?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Lack of funding		
Lack of qualified applicants		
Not a legal resident		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

What has **made possible (eased, facilitated) the hiring** of CHWs by your organization?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Funding by outside source		
Reimbursement (Medicaid, Medicare, Private Insurance)		
Support by upper management		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Does your organization use formal **incentives to attract** CHWs?

Does your organization use formal **incentives to retain** CHWs?

	Paid CHWs		**Volunteer CHWs**	
Possible answers:	Attract	Retain	Attract	Retain
Academic credit				
Adding fringe benefits				
Bonus (monetary)				
Certificate from program				
Company vehicle				
Conference participation				
Graduation ceremony				
Program awards or other recognition				
Promotions				
Wage increase				
Other (specify):				

Other (specify):				
Other (specify):				

Additional comments:

What are the **minimum job performance** expectations of CHWs at hire?

Career Ladders

Are there formal career ladders available for CHWs within your organization? (**NOTE FOR INTERVIEWER: By "formal" we mean sequential titles involving progressively higher responsibilities and compensation available**)

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

If yes, what advancements are available? _____

_____

_____

_____

_____

_____

In hiring personnel for CHW positions, do you consider previous on-the-job experience as a prerequisite for employment?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

_____

_____

_____

_____

_____

Have any **problems been encountered** in employing CHWs to accomplish your organization's goals?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
CHW services are not reimbursable		
CHWs go beyond duties and fall behind on other assignments		
CHWs need training in office etiquette		
Hostility/competition from other health care workers		
Inadequate skill/experience in supervising CHWs		
Lack of solidarity among CHW programs		
Lack of stable funding		
Lack of training resources		
Lack of understanding about CHWs contributions to the community		
Turnover due to low wages		
Shortage of qualified applicants		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Training

Is **training** provided within your organization or do you outsource it? Is it formal or informal training? **(NOTE FOR INTERVIEWER: by "formal" we mean training has an objective, a variety of learning methods are used to reach the objective, and there is an evaluation component to determine if objective has been accomplished.)**

	Paid CHWs		**Volunteer CHWs**	
Possible answers:	Formal	Informal	Formal	Informal
Internally (by your org./agency)				
Externally (outsource)				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

What informal training methods are used?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Mentoring		
Ad hoc training sessions by staff		
Group briefings/guest speakers		
Internal communications		
Web-based training and computer tutorials		
Books and references		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

In what areas is **training** provided?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Advocacy skills		
Bilingual skills		
Capacity building skills		
Communication skills		
Computer skills		
Confidentiality skills		
Interpersonal skills		
Organizational		
Service coordination		
General health		
Health care system		
Health insurance coverage		
Medicaid, Medicare, SCHIP coverage		
Social services system		
Specific diseases/health issues		
Other (specify):		
Other (specify):		
Other (specify):		

Does your organization participate in any ***cooperative training sessions***? (That is, if a different organization hosts a training session, are CHWs from your organization invited to participate?)

	Paid CHWs		**Volunteer CHWs**	
Possible answers:	Host	Attend	Host	Attend
Yes				
No				

Does your organization pay for trainings or do you require the CHWs to pay for their training?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Paid for by the employer		
Paid for by the CHW		
Reimbursed to the CHW		
Other (specify):		
Other (specify):		

How often is **training** provided?

- ❒ Monthly
- ❒ Quarterly
- ❒ Annually
- ❒ Other (specify):_____

Have any problems been encountered in providing **training** for CHWs?

- ❒ Availability of trainers
- ❒ Cost of training
- ❒ Location of training sites (inaccessible, too far)
- ❒ Training offered in language that CHWs not comfortable with
- ❒ Other (specify):_____

Additional comments:

Certification

Are you aware of activity within your State regarding certification or licensing of CHWs?

- ❒ Yes, licensing
- ❒ Yes, certification
- ❒ Yes, other (specify):_____
- ❒ No

What are your thoughts about the values of certification to employers such as yourself?

_____

_____

_____

_____

In TEXAS: Do you prefer hiring certified CHWs versus non-certified CHWs?

- ❒ Certified
- ❒ Non-certified
- ❒ Other (specify):_____

_____

_____

_____

_____

In TEXAS: Is it easy to find certified CHWs?

_____

_____

_____

_____

In TEXAS: Are you aware of any obstacles to certification or re-certification?

Additional comments:

Future – Goals and Sustainability

Now I would like to talk about your thoughts and concerns about the future utilization of CHWs in your organization. Please describe whether you believe that your organization will continue to employ CHWs in its programs as CHWs.

Does your organization plan to continue employing CHWs as part of its workforce?

- ❒ Yes
- ❒ No

Does your organization plan to expand the use of CHWs into other programs or departments within the organization?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Yes – expand		
No – maintain at current level		
No – decrease		
Other (specify):		
Other (specify):		

Additional comments:

If plan to expand, ask:
What programs or departments will CHWs be utilized in? (Compare these answers to prior answers on **page 10**—flip back to this section; show respondent that you are paying attention.)

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Diabetes		
Cancer _____		
Community Outreach		
Head Start		
Health education		
Healthy Families		
Healthy Start		
HIV/AIDS		
Hypertension		
Maternal and Child Health		
Pregnancy Prevention		
Prevention		
WIC		
Women's Health		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Does your organization see any changes in roles/functions for CHWs over the next few years?

- ❒ Yes
- ❒ No

Additional comments:

Of the ways CHWs are utilized in your organization, which, in your estimation, are the most **appropriate and productive assignments** for CHW personnel?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Patient navigator		
Provider: services, screening, education		
Outreach/enroll/inform		
Organizer/advocate		
Part of a care team (extender)		
Other (specify):		
Other (specify):		
Other (specify):		

Why? (Please explain):

What challenges or issues does your organization face in maintaining CHWs as part of its workforce? (Compare these answers to prior answers on **page 30**—flip back to this section; show respondent that you are paying attention.)

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
CHW services are not reimbursable		
Hostility/competition from other health care workers		
Inadequate skill/experience in supervising CHWs		
Lack of solidarity among CHW programs		
Lack of stable funding		
Lack of training resources		
Lack of understanding about CHWs contributions to the community		
Turnover due to low wages		
Shortage of qualified applicants		
Other (specify):		
Other (specify):		
Other (specify):		

Funding Sources, Reimbursement

Based on current funding sources, how many more years of funding do you have available at this time for the program(s) which employ CHWs?

- ❒ Less than one year
- ❒ 1 year
- ❒ 2 years
- ❒ 3 years
- ❒ 4 years
- ❒ Other (specify): _____

What are your current funding sources for CHW programs?

Will current funding sources provide future funding?

- ❒ Yes
- ❒ No

If not, where will funding be sought?

	Paid CHWs		**Volunteer CHWs**	
Possible answers:	***Current***	Future	***Current***	Future
HRSA/BPHC (comm. health centers)				
HRSA/ORH (rural health)				
HRSA/MCHB (maternal & child health)				
HRSA/HIV-AIDS				
Other HRSA				
CHIP				
Medicaid				
Medicare				
Block Grants				
State: _____				
Local: _____				
Other (specify):				
Other (specify):				
Other (specify):				

Other Federal Categorical:

Other HIV/AIDS
WIC
NIH
EPA
CDC
Food stamps
Head Start
Child welfare
Family planning

Has CHIP, Medicaid, or Medicare been considered (explored) as a funding source? What about private or public health insurance?

- ❒ Yes, CHIP (Children's Health Insurance Program)
- ❒ Yes, Medicaid
- ❒ Yes, Medicare
- ❒ Yes, private health insurance
- ❒ Yes, public health insurance
- ❒ Other (specify): _____
- ❒ No

What was the outcome?

Summary

Ask question 1 if we know that respondent has not participated in survey:

1. You should have received an invitation to participate in the current CHW Programs Inventory…we are showing that you have not had a chance to participate (or complete it). Would you like to have an opportunity to complete it? I can have someone contact you about this, would that be okay? (If yes) Would you like to be contacted by phone or e-mail?

Phone: (____) _____ e-mail: _____

One of the staff will contact you soon so that you are able to complete the online survey.

2. Do you have any other comments you would like to make about anything we have discussed today? If yes, note comments.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Closing Statement

Thank you very much for participating in this interview. You are one of a select group of individuals from your state who have been asked to participate in this manner and to contribute to the national workforce study of community health workers. This study will use information provided by you and other informants in the State to draw a profile of the community health worker workforce. As with any workforce, an important part of this profile is learning about the experience that employers have had with CHWs. We truly thank you for taking the time out of your busy schedule to speak with me about your experience with CHWs.

If you have any questions following the conclusion of this interview, please feel free to contact the project's Principal Investigator, Dr. Antonio Furino at 210-567-3168.

Have a great day and thank you again for you time and participation.

Appendix E2: The Study Interviews - CHWs

Appendix E2.
Regional Center for Health Workforce Studies
The University of Texas Health Science Center at San Antonio
The Community Health Worker (CHW) National Workforce Study
CHW-guided telephone interviews to complement studies of the States of

Arizona, Massachusetts, New York, and Texas

Respondent's Name: _____

Agency/Organization: _____

City: _____ Telephone Number: _____

Is respondent:

- ❒ Paid employee
- ❒ Volunteer
- ❒ Other (specify): _____

Date of interview: May ____, 2006

Time of interview: _____ am / pm to _____ am / pm

Interviewer: _____

Introduction

Thank you for agreeing to participate in this interview.

You have been identified as one of a select group of individuals in Texas (Arizona, New York, Massachusetts) who has the opportunity to contribute to the first federally sponsored national workforce study of community health workers (CHWs). This unprecedented study will use information provided by you and other informants in the State to draw a profile of the community health worker workforce. An important part of this profile is learning about the experience of employers with CHWs.

During the interview, we will focus on four main areas: (1) the contributions that you, as a community health worker, have made/can make to the organization, (2) what skills are in demand and what positions are available within the organization for CHWs, (3) the demand for CHWs in your organization and any difficulties finding employment as a CHW, and (4) what is your experience and future expectation as a CHW within your organization.

Before we begin, I'd like to reassure you that your identity and the information you provide during this interview will be kept strictly confidential. (*If asked, state: All information provided by you in the interview will be reviewed and analyzed by the research team and is confidential*.)

Do you have any questions at this point?

We estimate this interview will take approximately 45 minutes of your time. Have I called you at a good time?

(If not, what time do we need to end and when can we call you again? _____)

If respondent has questions, ask: Would you like to discuss your questions with me or would you prefer to speak to the Principal Investigator?

If he/she requests to speak to the PI, state: You can contact the project's Principal Investigator, Dr. Antonio Furino, at 210-567-3168.

Profile of the Respondent

What is your current position in the organization?

- ❒ Community health representative
- ❒ Community health worker
- ❒ Lay outreach worker
- ❒ Promotor(a)
- ❒ Other (specify): _____

How many years have you worked in your current position? _____

Can you briefly describe your background working as a community health worker?

NOTE TO INVERVIEWER: The following are questions that should be answered during the discussion. If he/she does not include this information, please ask the respondent:

How many years have you worked as a CHW? ____

How many programs have you worked for as a CHW? _____

Were these programs within the same organization? ____

Profile of the Organization

Is your agency a __ (for) profit or __ non-profit?

- ❒ 501c3 entity
- ❒ State agency
- ❒ Umbrella agency
- ❒ Other (specify): _____

What is the primary industry of your organization? (NOTE TO INTERVIEWER: CHW may *not* know the answer to this question.)

- ❒ 6111 – Elementary, secondary school
- ❒ 6113 – College or university
- ❒ 6211 – Offices of physicians
- ❒ 6214 – Outpatient care centers
- ❒ 6219 – Other ambulatory health care services
- ❒ 6221 – General, medical, surgical hospitals
- ❒ 6241 – Individual family services
- ❒ 6244 – Child, daycare services
- ❒ 8131 – Religious organizations
- ❒ 8133 – Social advocacy organizations
- ❒ 8134 – Civic advocacy organizations
- ❒ 9190 – Federal government (excluding postal services)
- ❒ 9290 – State government (excluding health, education)
- ❒ 9390 – Local government (excluding health, education)
- ❒ Other (specify): _____

Does the Health Resources and Services Administration provide funding for the CHW program(s)?

- ❒ Yes
- ❒ No

Which population is targeted for services by CHWs in your program?

- ❒ By health condition: _____
- ❒ By demographics: _____
- ❒ Other (specify): _____

When did your organization first hire paid, or recruit volunteer, CHWs? **Year** _____

Do you have paid CHWs in your organization?

- ❒ Yes, how many: _____
- ❒ No

Do you have volunteer CHWs in your organization?

- ❒ Yes, how many: _____
- ❒ No

Do you have certified CHWs in your organization? (NOTE: Only applicable to Texas.)

- ❒ Yes, how many: _____
- ❒ No

General - Profile of the CHW

Now I would like to talk about community health workers in your organization. **(NOTE FOR INTERVIEWERS: Interviewers will use the term "community health worker" throughout the interview to describe the workforce/employees. The employer may use any term that they would normally use to describe this workforce. For instance, lay health advisor; community health representative; and *promotor(a) de salud* would all be considered "community health workers" for the purposes of the National Workforce Study and for discussion during interviews.)**

Is the term "community health worker" used in your organization to identify a certain type of employed personnel?

- ❒ Yes
- ❒ No

If not, what is the title used for positions filled by CHWs?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Community health advocate		
Community health liaison		
Family support worker		
Lay outreach worker		
Promotor(a)		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Job description

Please describe the work you perform as a CHW.

- ❒ I. Assistance in gaining access to medical services or programs
- ❒ I. Assistance in gaining access to social services or programs
- ❒ I. Building community capacity
- ❒ I. Building individual capacity
- ❒ I. Case management
- ❒ I. Community advocacy
- ❒ I. Counseling
- ❒ I. Cultural mediation
- ❒ I. Interpretation
- ❒ I. Mentoring
- ❒ I. Patient navigation
- ❒ I. Provide culturally appropriate health promotion/education
- ❒ I. Provide direct services
- ❒ I. Risk identification
- ❒ I. Social support
- ❒ I. Translation
- ❒ I. Transportation
- ❒ O. Conducting surveys of target population
- ❒ O. Enroll population into health insurance programs
- ❒ O. Determine eligibility for services
- ❒ O. Provide health screenings
- ❒ O. Refer population to health care system
- ❒ O. Refer population to social services system
- ❒ Other (specify): _____

Additional comments:

Which departments, **programs or projects** in your organization have been employing you or fellow CHWs?

Possible answers:	**Self**	**Other CHWs**
Diabetes		
Cancer _____		
Community Outreach		
Head Start		
Health education		
Healthy Families		
Healthy Start		
HIV/AIDS		
Hypertension		
Maternal and Child Health		
Pregnancy Prevention		
Prevention		
WIC		
Women's Health		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Have **you** worked **alone or as part of a team**? (Describe work settings as well).

Do you know if **fellow (other) CHWs** work **alone or as part of a team**?

	Self	**Other CHWs**
Alone		
Part of team		
Other (specify):		

If you have worked as part of a team, who are the other **team members**?

What about **other CHWs** that you know of?

Possible answers:	**Self**	**Other CHWs**
Case manager		
Health educator		
Nurses		
Nutritionist		
Other CHWs		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Qualifications

Knowledge

What knowledge base did your employer require when you were hired as a CHW? What do other employers that you know about require?

Possible answers:	**Current Employer**	**Other Employers**
CHW roles and functions		
Community		
General health		
Health care system		
Health insurance coverage		
Medicaid, Medicare, SCHIP		
Social services system		
Specific diseases/health issues		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Skills

What skills did your employer, or others you know about, ***require*** when you were hired as a CHW? Is there a ***minimum*** set of skills that employers are looking for?

	Paid CHWs		**Volunteer CHWs**	
Skills	Minimum	Desired	Minimum	Desired
Advocacy skills – ability to "speak up" for patients and communities to overcome barriers, act as intermediary with bureaucracy				
Bilingual skills – be fluent in the preferred language of clients, translate technical terms				
Capacity building skills – empowerment skills; leadership skills; influence communities and individuals to change behavior and take more control of their own health				
Communication skills – ability to listen, use oral & written language confidently				
Computer skills				
Confidentiality skills – ability to keep matters private, comply with HIPAA laws				
Interpersonal skills – friendliness, sociability, counseling & relationship building skills, ability to provide support and set appropriate boundaries				
Organizational skills – ability to set goals and develop an action plan, manage time, keep records				
Service coordination skills – ability to identify & access resources; network & build coalitions; make and follow-up on referrals				
Teaching skills – ability to share information, respond to questions & reinforce ideas, adapt methods to various audiences				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

Are different positions available for **different skills** levels as a CHW in your organization?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

Do you believe there are sufficient **openings/opportunities for CHWs** who have the **minimum** qualifications?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

Do you believe there are sufficient **openings/opportunities for experienced CHWs**?

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

Additional comments:

_____

_____

Cultural competence

(NOTE FOR INTERVIEWERS: Following is a description of "cultural competence" that can be used to describe the term to respondent.) Now I would like to ask you about a quality that is often attributed to CHWs—that is, I'd like to talk about cultural competence. *Cultural competence may be defined as the ability of understanding and working within the context of the culture of the community being served*.

Do you agree with this general definition?

- ❒ Yes
- ❒ No

Would you define "cultural competence" differently?

- ❒ Yes
- ❒ No

If so, how would you define it?

Possible answers:	**Definition**
they live/have lived there for some time	
they grew up there	
they are accepted as part of the community even if they are new here	
they are already known and trusted by people in this community	
they have had similar life experiences to people in this community	
they come from a similar cultural background	
they understand some aspect of the disease	
Other (specify):	
Other (specify):	
Other (specify):	

Additional comments:

How important is it that a CHW **be culturally competent**?

Score	**Culturally competent**
1-- Not important	
2-- Somewhat important	
3-- Important	
4-- Very important	
5-- Extremely important	

Additional comments:

Now, "cultural competence" is sometimes viewed of in terms of "membership" of CHWs in the community they are serving. How important is it that a CHW **be from the community** in which he/she works?

Score	**From community**
1-- Not important	
2-- Somewhat important	
3-- Important	
4-- Very important	
5-- Extremely important	

Additional comments:

In your opinion, if an **experienced CHW, from a different community**, applied for an available opening, should he/she be hired and why? That is, how would his/her suitability for hire be evaluated if he/she is not from the target community?

Possible answers:	**Suitability**
No—we only hire (agencies should only hire) actual community members	
Yes—if they are accepted or *seen* as part of the community, even if they are new	
Yes— if they are already known and trusted by people in the community	
Yes—if they come from a similar cultural background	
Yes—if they have already worked in the community for some time	
Other (specify):	
Other (specify):	
Other (specify):	

Additional comments:

Demand for CHWs (Why the organization uses CHWs)

Why does your organization, or other organizations you know of, **employ** CHWs?

Possible answers:	**Current Employer**	**Other Employers**
Funding source requirement		
CHWs are viewed as cost effective resources		
CHWs are connected to/"know" the target population		
Interest by management to test the CHW/promotora model		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

Why are CHWs important to your organization or other organizations you know of? (In other words, what do CHWs contribute that makes them different from other workers?) Which of these are the key factors?

Possible answers:	**Current Employer**	**Key?**	**Other Employers**	**Key?**
Can help reach clients who couldn't be reached before				
Helped improve communication between providers and clients				
Program/services are now more responsive to community's needs				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

What factors, external to your organization, appear to induce the hiring of CHWs? Which of these are the key factors?

Possible answers:	**Current Employer**	**Key?**	**Other Employers**	**Key?**
Economic conditions				
Funding streams				
Catchment areas				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

In your opinion, are there different external or factors that induce the employment of paid versus volunteer CHWs? Please describe.

- ❒ Yes
- ❒ No

Do volunteer CHWs perform the same duties as paid CHWs in organizations where volunteer and paid workers are employed?

- ❒ Yes
- ❒ No

What motivates you or you fellow CHWs to seek a paid or a volunteer position?

Given the availability of both, which position would you or other CHWs prefer most often and why?

- ❒ Paid
- ❒ Volunteer

Employment Experience

Which **strategies** have you or other CHWs used to locate paid or volunteer positions?

Possible answers:	**Self**	**Other CHWs**
Advertising		
Employment agencies		
Networking, word-of-mouth		
Referrals from _____		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

_____

_____

Are you aware of any **obstacles** to finding CHW positions?

Possible answers:	**Self**	**Other CHWs**
Lack of funding		
Lack of positions		
Not a legal resident		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

_____

_____

Does your organization (others you know of) use formal **incentives to attract** CHWs?

Does your organization (others you know of) use formal **incentives to retain** CHWs?

	Current Employer		**Other Employers**	
Possible answers:	Attract	Retain	Attract	Retain
Academic credit				
Adding fringe benefits				
Bonus (monetary)				
Certificate from program				
Company vehicle				
Conference participation				
Graduation ceremony				
Program awards or other recognition				
Promotions				
Wage increase				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

During your career as a CHW, have you ever worked as a volunteer CHW rather than as a paid employee?

- ❒ Yes, for how long? _____. If yes, go to next question.
- ❒ No. If no, skip next question.

If yes, ask:
Is there any difference between the work you have performed as a volunteer CHW and the work you have performed as a paid employee? (If yes, ask for explanation.)

- ❒ Yes
- ❒ No

If yes, note explanation _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

In which **assignments** have you worked as a CHW?

Possible answers:	**As Paid CHW**	**As Volunteer CHW**
Patient navigator		
Provider: services, screening, education		
Outreach/enroll/inform		
Organizer/advocate		
Part of a care team (extender)		
Other (specify):		
Other (specify):		
Other (specify):		

Why? (Please explain):

Do you think you were sufficiently prepared to carry out these assignments?

- ❒ Yes
- ❒ No

Additional comments:

Do you think you were underutilized in these assignments?

- ❒ Yes
- ❒ No

Additional comments:

What **minimum job performance** requirements are usually expected of you or other CHWs by your employer?

Career Ladders

Are there formal career ladders available for CHWs within your organization? (**NOTE FOR INTERVIEWER: By "formal" we mean sequential titles involving progressively higher responsibilities and compensation available**)

	Paid CHWs	**Volunteer CHWs**
Yes		
No		

If yes, what advancements are available? _____

_____

_____

_____

_____

_____

_____

_____

Training

Are trainings held by your employer for CHWs? Do you receive trainings from outside your organization? Do you receive formal or informal training for your job as a CHW? **(NOTE FOR INTERVIEWER: by "formal" we mean training has an objective, a variety of learning methods are used to reach the objective, and there is an evaluation component to determine if objective has been accomplished.)**

	Paid CHWs		**Volunteer CHWs**	
Possible answers:	Formal	Informal	Formal	Informal
Internally (by your org./agency)				
Externally (outsource)				
Other (specify):				
Other (specify):				
Other (specify):				

Additional comments:

_____

_____

What informal training methods are used?

Possible answers:	**Paid CHWs**	**Volunteer CHWs**
Mentoring		
Ad hoc training sessions by staff		
Group briefings/guest speakers		
Internal communications		
Web-based training and computer tutorials		
Books and references		
Other (specify):		
Other (specify):		
Other (specify):		

Additional comments:

In which areas are trainings **available**?

What training have you actually **received**?

Possible answers:	**Available**	**Received**
Advocacy skills		
Bilingual skills		
Capacity building skills		
Communication skills		
Computer skills		
Confidentiality skills		
Interpersonal skills		
Organizational		
Service coordination		
General health		
Health care system		
Health insurance coverage		
Medicaid, Medicare, SCHIP coverage		
Social services system		
Specific diseases/health issues		
Other (specify):		
Other (specify):		
Other (specify):		

How did this training help you?

- ❒ Helped CHW obtain a better job (advancement)
- ❒ Helped CHW obtain better pay (increase in wages)
- ❒ Helped CHW feel more comfortable in performing duties as a CHW
- ❒ Other (specify):_____

Does your organization participate in any ***cooperative training sessions***? (That is, if a different organization hosts a training session, are CHWs from your organization invited to participate?)

	Paid CHWs		**Volunteer CHWs**	
Possible answers:	Host	Attend	Host	Attend
Yes				
No				

Additional comments:

Certification

Are you aware of activity within your State regarding certification or licensing of CHWs?

- ❒ Yes, licensing
- ❒ Yes, certification
- ❒ Yes, other (specify):_____
- ❒ No

What are your thoughts about the values of certification to CHWs such as yourself?

_____

_____

_____

_____

In TEXAS: Have CHWs encountered any obstacles in obtaining certification (or re-certification)?

_____

_____

_____

_____

Additional comments:

_____

_____

_____

_____

_____

Future – Goals and Sustainability

Do you plan to continue your work as a CHW with your current employer?

- ❒ Yes
- ❒ No

Additional comments:

Is there a good chance that the program you are working in will continue?

- ❒ Yes
- ❒ No

Additional comments:

How long do you think the program will continue to operate?

- ❒ Less than one year
- ❒ 1 year
- ❒ 2 years
- ❒ 3 years
- ❒ 4 years
- ❒ Other (specify): _____

Summary

Do you have any other comments you would like to make about anything we have discussed today? If yes, note comments.

Closing Statement

Thank you very much for participating in this interview. You are one of a select group of individuals from your state who have been asked to participate in this manner and to contribute to the national workforce study of community health workers. This study will use information provided by you and other informants in the State to draw a profile of the community health worker workforce. As with any workforce, an important part of this profile is learning about the experience that the workers themselves have had. We truly thank you for taking the time out of your busy schedule to speak with me about your experience as a CHW.

If you have any questions following the conclusion of this interview, please feel free to contact the project's Principal Investigator, Dr. Antonio Furino at 210-567-3168.

Have a great day and thank you again for you time and participation.

Appendix F: Health Issues in Literature Reviews

Appendix F. Health Issues Addressed in Selected Articles in Published Literature Reviews

Table F.1 organizes a selection of articles from the nine reviews included in Chapter 6 by author, date of publication, and health issue addressed.

Table F.1 Published Literature Included by Author and Content

Author, Year	Authors of Literature Reviews [1]	Diabetes	Heart	MCH	Women - Cancer	Other Health Issue
Andersen 2000	L				Yes	
Arlotti 1998	A			Yes		Breastfeeding
Barnes 1999	L			Yes		Immunizations
Barnes-Boyd 2001	A			Yes		
Barth 1991	L, P					Child abuse prevention
Batts 2001	A	Yes				
Bird 1998	A, S				Yes	
Birkel 1993	H, S					HIV
Black 1995	L, S			Yes		Child development (NOFTT)
Bone 1989	B, S		Yes			
Bradley 1994	P, S			Yes		
Bray 1994	A			Yes		
Bridges 2000	H					ER follow-up
Brooks-Gunn 1989	S			Yes		
Brown 1995, 2002	H, No	Yes				
Burhansstipanov 2000	A				Yes	
Butz 1994	Ne, S					Asthma
Caulfield 1998	A,L				Yes	
CDC 1999	S					HIV
Ctr for Future of Children 1999	H			Yes		Child development
Conway 2004	Na					Smoking
Corkery 1997	A, Ne, No, S	Yes				
Daaleman 1997	P			Yes		
Dennison 2003	B		Yes			
Dignan 1996, 1998	A				Yes	
Duan 2000	L				Yes	
Earp 2002	A				Yes	
Fedder 2003	B, No	Yes	Yes			
Flax 1999	A, H				Yes	
Gary 2003	Na, No	Yes				
Graham 1992	L			Yes		

Author, Year	Authors of Literature Reviews [1]	Diabetes	Heart	MCH	Women - Cancer	Other Health Issue
Griffin 1999, 2000	No	Yes				
Hawthorne 1997	No	Yes				
Heath 1987	No	Yes				
Heins 1987	P			Yes		
Hill 1999	B, Ne		Yes			
Hill 2003	Na		Yes			
Holtrop 2002	No	Yes				
HRSA 1998	H, Ne					Access and Pt knowledge
Humphrey 1997	No	Yes				
Hunter 2004	O	Yes	Yes			
Ireys 1996,2001	L					Children with chronic disease
Joseph 2001	No	Yes				
Julnes 1994	P			Yes		
Keyserling 2002	A, No	Yes				
Komaroff 1974	L	Yes	Yes			
Korfmacher 1999	P			Yes		
Krieger 1999	H, S		Yes			
Krieger 2000	L			Yes		Immunizations
Krieger 2005	Na					Asthma
Lacey 1991	A, H, S					Smoking
Lapham 1995	L					Substance abuse/recovery
Levine 2003	B, Na		Yes			
Linnan 1990	Ne		Yes			
Lorig 2000, 2003	No	Yes				
Mahon 1991	P			Yes		
Marcenko 1994	P			Yes		
Margolis 1998	S				Yes	
McCormick 1989	A, S			Yes		
Meister 1992	Ne			Yes		
McFarlane 1997	P			Yes		
Moore 1974	A			Yes		
Moore 1981	S			Yes		Immunizations
Moore 2002	No	Yes				
Morisky 1983	B		Yes			
Navaie-Walliser 2000	P			Yes		
Navarro 1998	A, H, S				Yes	
Nyamathi 2001	A					HIV
Olds 2002	L			Yes		
Philis-Tsimikas 2001, 2004	No	Yes				
Poland 1992	P			Yes		

Author, Year	Authors of Literature Reviews [1]	Diabetes	Heart	MCH	Women - Cancer	Other Health Issue
Quinn 2000	A				Yes	Weight loss
Richter 1974	Ne		Yes			
Rodney 1998	H, Ne					Misc. access
Rogers 1996	P			Yes		
Schuler 2000	L			Yes		Child development
Siegel 1980	L			Yes		Child development
Silver 1997	L			Yes		Children with chronic disease
Sox 1999	A				Yes	
St. James 1999	S			Yes		Phenylketonuria
Stewart 1970	Ne			Yes		Immunizations
Sung 1997	A, H, L, S				Yes	
Swider 1990	Ne				Yes	Access
Thomas 2000	A				Yes	STDs
Von Korff 1998	L				Yes	Back pain
Voorhees 1996	L				Yes	Smoking
Warrick 1992	H			Yes		
Watkins 1994	A, H					Access
Weinberger 1989	L					Arthritis
Wolff 1997	S					Mental health
Woodruff 2002	Na					Smoking
Zhu 2002	A				Yes	

Source: CHW/NWS (2006).

[1] A=Andrews; B=Brownstein; H=HRSA; L=Lewin; Na=National Fund for Medical Education; Ne=Nemcek; No=Norris; P=Persily; S=Swider

Appendix G: Selected Profiles

Appendix G. Additional Program Profiles in Arizona, Massachusetts, New York, and Texas

Arizona

Mariposa Community Health Center, Center of Excellence in Women's Health[1]
Location: Santa Cruz County, Arizona
Services provided by CHWs: Goal is to improve the health and social well-being of women. Strategy for achieving the goal and objectives is a strong linkage between clinic services and health promotion efforts. CHWs deliver health education, and work on community mobilization through neighborhood-based outreach to engage women, in partnerships and collaborative efforts in order to reduce health disparities and increase access to care. Information is available in Spanish and services are free. Baby-sitting and transportation assistance are also provided to decrease barriers of access to care. Plans for the replication of some programs developed in the Center of Excellence in Women's Health are under way at the El Rio Community Health Center in Tucson, Arizona.

Arizona Health Start[2]
Location: Statewide
Services provided by CHWs: Lay health workers provide education, support, and advocacy services to pregnant and postpartum women and their families. Nurses and social workers provide oversight as families receive home visits and case management services. Families are monitored through the enrolled child's second year of life. Goals of the program are to prevent low birth weights in infants, to increase care for high-risk pregnant women, to ensure that every child in the program is appropriately immunized and has a medical home, to provide health education to women and their families on topics ranging from prenatal care to proper child care and safety, and, finally, to screen for early identification of developmental delays and make appropriate referrals. According to the Web site, 39 community health workers completed 9,718 visits during 2004 (average of 4.5 visits per client) and documented that 94 percent of two-year old children had been properly immunized.

Luchando Contra el SIDA, Campesinos Sin Fronteras **(CSF)**[3]
Location: Yuma County, Arizona
Services provided by CHWs: Volunteer *promotores* provide information, counseling, and referrals on HIV/AIDS and other sexually transmitted diseases. *Promotores* go into the fields with the farmworkers, facilitate the community's linkage with local social service and health programs, and perform follow-up for the services provided. All

[1] United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Mariposa Community Health Center of Excellence in Women's Health Model, Santa Cruz County, Arizona. El Paso (TX): United States-Mexico Border Health Commission, 2004.
[2] Office of Women's and Children's Health - Health Start [Internet]. Phoenix (AZ): Arizona Department of Health Services, Division of Public Health Services; 2006 [updated 2006 Sep 13/cited 2006 Oct 9]. Available from http://www.azdhs.gov/phs/owch/healthstart.htm.
[3] United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. *Luchando Contra el SIDA* Model, Somerton, Arizona. El Paso (TX): United States-Mexico Border Health Commission, 2004.

outreach and education, including content of presentations, literacy level, and language, is sensitive to farmworkers' working conditions and culture. *Promotores* have also been able to mediate for the health care system to assist farmworkers with HIV counseling and testing services, scheduling appointments, facilitating transportation, as well as translation and buffering costs. In addition, they contact and refer farmworkers at high risk for HIV infection for HIV counseling and testing. *Promotores* have developed innovative ways to educate the community, including a play on HIV/AIDS, two *fotonovelas* that discuss the importance of condom use, and an appealing distribution of condoms inside of paper flowers.

Massachusetts

Action for Boston Community Development, Inc. (ABCD, Inc.);[4] two programs highlighted: *Entre Nosotras* (Between Us) and Boston Family Planning

Location: Boston, Massachusetts

Services provided by CHWs:

Entre Nosotras: A community-based peer educator program takes place in locations like beauty salons and private homes; provides risk reduction education about reproductive and sexual health, domestic partner violence, and healthy relationships to Latina women between the ages of 18 and 45. The program used both paid and volunteer staff as part of the peer network.[5]

Boston Family Planning: Trained reproductive health and sexuality educators hold workshops and programs for women, teens, men, and parents in community settings. They provide sexual health education and counseling as well as promote informed sexual and reproductive choices. The family planning community outreach initiatives included outreach education in schools, faith-based programs, prisons and pre-release programs, community agencies, and after-school programs.

The Bowdoin Street Health Center

Location: Dorchester, Massachusetts

Services provided by CHWs: In the past, CHWs worked as generalists, acting as links for the neighborhood population to various city services. A change from the generalist model occurred when funding streams changed roles and functions (grants were now issue-oriented). Several of the CHWs worked in individual specialty health areas: a childhood obesity program with an objective of involving youth in sports and increasing their physical activity; an environmental justice and safety program, visiting auto shops in the area and working with employers on workplace safety; and an initiative involving local schools to reach at-risk children and families. In addition, some of the workers at the Bowdoin Street Clinic were called CHWs, outreach workers, or family advocates. The Bowdoin Street Clinic had five CHWs, a family advocate for domestic abuse clients, a family planning/tobacco outreach worker, and two other outreach workers funded through a recent diabetes prevention and management grant. Clients served by the diabetes outreach workers were identified through the clinic as either having diabetes or

[4] Health Programs. [Internet] Boston (MA): Action for Boston Community Development, Inc.; 2005 [updated 2006/cited 2006 Sep 29]. Available from http://www.bostonabcd.org/programs/health-programs.htm.

[5] CHW National Workforce Study Interviews (CHW/NWSI) (2006).

being at risk for developing diabetes. CHWs made home visits to these patients.[6] Two of the CHWs at the clinic remained in generalist roles working on a range of issues from public safety to community organizing. A main objective of CHWs at the clinic was to assure that each client had a primary care medical provider who was accessed regularly either at the Bowdoin Street Clinic or elsewhere. Outreach workers participated in family outreach days and health fairs.

The Boston Housing Authority (BHA)
Location: Boston, Massachusetts
Services provided by CHWs: Residents from housing developments throughout the city were able to take part in the Resident Health Advocate (RHA) program. Objectives of the program were to provide intensive training[7] for health advocates, to create linkage between residents and the health resources in the community, and to foster both individual and public health prevention and wellness. RHAs created and distributed health materials, scheduled meetings with community organizations and tenant groups, accomplished some surveying of tenants for needs assessments, and participated in information sharing and referrals for individual residents in their assigned housing development.[8] RHAs also attended appointments for social or health services with residents[9] and assisted families in obtaining appropriate health resources through health education and referrals during their six- to eight-month commitment.[10] The outreach activities of the RHAs included participation and planning for community events (similar to block parties), which were scheduled throughout the summer, and traveling community health fairs. This provided the RHAs with visibility in their communities of interest.[11]

Massachusetts Department of Public Health (MDPH), program highlighted: Refugee and Immigrant Health Program[12]
Location: Statewide
Services provided by CHWs: The current refugee program was based in the Massachusetts Bureau of Communicable Disease Control. The program continued to utilize an international model using indigenous health workers whose focus included management of tuberculosis (TB) and Hepatitis B, and HIV and STD education, management, and prevention. After screening and identification of newly arrived immigrant and refugee populations, community outreach educators (COEs) employed by the program worked with local public health nurses from the city or town in which the case was managed to assure that identified refugees were treated. The nurse provided

[6] Ibid.
[7] Resident Health Advocate Program [Internet]. Boston (MA): Boston Housing Authority; 2000 [cited 2006 Nov 08]. Available from http://www.bostonhousing.org/detpages/deptinfo139.html. Note: Participants in the program train on many topics, including: health assessment models, leadership skills, cultural competence, outreach education, navigating the health care system, asthma, first aid, nutrition for life, mental health, depression, stress, and STDs.
[8] CHW/NWSI (2006).
[9] Ibid.
[10] Resident Health Advocate Job Description. Boston (MA): Boston Housing Authority, 2005; Resident Health Advocate Recruitment Flyer "Attention BHA Residents." Boston (MA): Boston Housing Authority, 2006.
[11] CHW/NWSI (2006).
[12] Refugee and Immigrant Health Program [Internet]. Jamaica Plain (MA): Massachusetts Department of Public Health; 2002 [cited 2006 Nov 08]. Available from http://www.mass.gov/dph/cdc/rhip/wwwrihp.htm.

needed clinical services and the COEs offered education, translation, and other needed services. COEs followed those who were served until the prescribed course of treatment was completed. Services provided by the COEs in the immigrant and refugee program were generally health focused.[13] COEs acted as both navigator and interpreter. Community outreach educators in the program including workers who spoke Vietnamese, Cambodian, Laotian, Haitian Creole, Spanish, Arabic, Somali, French Swahili, Liberian, Russian, Ukrainian, Bosnian, and Moldavian.

North End Outreach Network (NEON) [14]
Location: Springfield, Massachusetts
Services provided by CHWs: Community health advocates (CHAs) performed door-to-door outreach in one or two assigned geographic zones.[15] Each CHA was also assigned a school in the neighborhood and worked with the youth and families from that school. If a child was truant, the school would make a referral to NEON. The CHA would then visit the family to discover if any assistance was needed and to address the importance of school attendance. Although the original purpose of the organization was to improve health outcomes in the neighborhood, the organization had taken a wraparound approach to its mission. NEON was interested in all elements that made a family healthy, strong, and secure including education and literacy, employment, housing, public safety, and anything that would stabilize the neighborhood. Until recently, CHAs worked alone, but they were now required to work in pairs. CHAs were expected to be in the field at least four hours each day making connections with families, building trust, doing informal assessments, and discussing services available in the community. Once the connection with NEON had been made, CHAs followed families to assure appropriate referrals to agencies were made and services were provided. CHWs developed caseloads of families that were visited repeatedly. Most clients were found through community outreach, but some were walk-ins to the NEON offices. Many patients referred to the health clinic and became the outreach arm for a wide variety of community agencies.

HealthFirst Family Care Center[16]
Location: Fall River, Massachusetts
Services provided by CHWs: Each CHW was employed to promote the health center and its programs through attendance at community events such as health fairs. These workers also made educational presentations about the clinic and its services to church groups, other clinics, and to hospitals. In addition to providing community outreach, the interpreter/outreach worker also worked as a patient navigator for some clients, accompanying them to medical appointments. The outreach workers were liaisons between the clinic and the community whose primary function was advocacy and education about the health clinic so that community residents would come to the center. The WIC community coordinator in the clinic was trilingual in Spanish, Portuguese, and English and recruited women from the community to the WIC program.

---

[13] Ibid.
[14] CHW/NWSI (2006).
[15] Services [Internet]. Springfield (MA): North End Outreach Network; 1996 [cited 2006 Nov 08]. Available from http://www.neonprogram.org/html/services.html. Note: According to the Web site, there were 10 zones with one community health worker per zone.
[16] CHW/NWSI (2006).

Beth Israel Deaconess Hospital[17]
Location: Boston, Massachusetts
Services provided by CHWs: Community resource specialists were employed as patient navigators, targeting breast cancer and prostate cancer patients, to help clients navigate the health care system through all stages of care.[18] Community outreach at public events such as health fairs was also a strategy for recruiting patients to the program. Community resource specialists were hospital-based and traveled to patient homes only on rare occasions. Resource specialists acted as liaisons between the community and the hospital linking patients to both health and community services. They negotiated transportation, housing, insurance, food stamps, and clothing for patients. There was no time limit on length of service, and a patient received help from the resource specialist as long as required. Resource specialists carried caseloads of 20 to 25 patients at any time and touched on every kind of health issue. Although their work was primarily one on one, the resource specialists worked as part of clinical teams that included physicians, nurse practitioners, and nurses as well as social workers, physical therapists, and occupational therapists.

New York
Health Plus[19]
Location: Brooklyn, New York
Services provided by CHWs: Patients were helped through the health care system and were provided community education and target information about immunization and prenatal care. There was a focus on advocacy, patient empowerment, and health translation services. CHWs represented 23 different cultures and spoke 16 different languages (all were fully bilingual) including Creole, Russian, Chinese, Spanish, Albanian, Polish, Urdu, Nepalese, Arabic, and Korean, among others.

Community Action for Prenatal Care Initiative (CAPCI or CAPC), programs highlighted: CAPCI programs in the South Bronx and Buffalo
Location: Vary, see below
Services provided by CHWs: Model of delivery varies with each coalition.[20] CAPCI Program in the South Bronx: Bronx Lebanon Hospital manages the CAPCI program in the South Bronx and contracts with 15 local community-based organizations to provide intervention, education, and referral services in a seven ZIP Code area for pregnant women at high risk for HIV and HIV transmission to their newborns. The 38 outreach workers in the program are employed by the various contracting community organizations. Clients are often women with histories of substance abuse, mental illness, incarceration, prostitution, or developmental disabilities who are provided with intensive intake, referral, and follow-up services. The program works with 11 hospitals and health centers in the Bronx. CAPCI Program in Buffalo, New York: Is housed with other member programs of the Buffalo Prenatal-Perinatal Network, sharing office and administrative resources with the Community Health Worker Program, the Healthy

[17] Ibid.
[18] Multicultural Cancer Task Force [Internet]. Boston (MA): Beth Israel Deaconess Medical Center; [cited 2006 Nov 08]. Available from http://www.bidmc.harvard.edu/display.asp?node_id=743.
[19] CHW/NWSI (2006).
[20] Ibid.

Families America Program, the Buffalo Home Visiting Program, and the Lead Safe Interim Housing Program. The program targets at-risk women in specific ZIP Codes for street outreach and home visiting. Outreach workers were employed directly by the Buffalo CAPCI Program, although referrals were made after intake to a number of community provider organizations. The CAPCI Program collaborates with the Erie County Department of Health, Hispanics United, the Women's Health Peer Initiative, Group Ministries, Kaleida Health, and other local agencies and health providers to link at-risk women to prenatal care. The program operates a 24-hour hotline and completes intakes on more than 200 women each year. There is a large Latino population in the catchment area as well as some refugee settlements including Somalian immigrants. The program also has a 12-member consumer advisory group.

Church Avenue Merchants Block Association (CAMBA)
Location: Brooklyn, New York
Services provided by CHWs: Provided health education and outreach services to improve residents' access to primary care.[21] Currently, CAMBA has two home visiting programs with a maternal and child health focus (MCH); one is a Healthy Families America Program and the other is a Community Health Worker Program funded by the New York State Department of Health.[22] Both employ home visitors focused on better health outcomes for families. CHWs do street outreach in local businesses such as beauty salons. Once identified, clients complete an assessment and intake process, and help build action plans for their families. Workers accompany clients as needed to obtain public assistance or food stamps, etc. Home visiting is an important part of the MCH programs as it permits the client to share problems with the workers. Depending on the program in which they are enrolled, clients receive services prior to birth and for a year or longer after birth.[23]

Oak Orchard Community Health Center[24]
Location: Brockport, New York
Services provided by CHWs: Bilingual, bicultural health promoters were recruited from a migrant community to work with migrant Mexican farmworkers in three counties designated as Health Professional Shortage Areas in upstate New York. With funding from the New York State Department of Health, the program used a mobile van to transport health providers and promoters to migrant camps. Workers were trained over a two-month period in basic health management, screening, and treatment. The curriculum also covered issues such as domestic violence, parenting skills, lead screening, nutrition, substance abuse, prenatal care, as well as Medicaid eligibility and application. The success of health promoters with respect to a TB program in the mid-1990s was attributed to the good relationships of the health promoters with the target community, their

[21] Walker MH. Building Bridges: Community Health Outreach Worker Programs. New York (NY): United Hospital Fund of New York; 1994.
[22] Community Health Worker Program [Internet]. Albany (NY): New York State Department of Health; [updated 2004 Jun/cited 2006 Nov 08]. Available from http://www.health.state.ny.us/nysdoh/perinatal/en/chwp.htm. Note: There are 23 Community Health Worker Programs across the State, according to the New York State Department of Health Web site.
[23] CHW/NWSI (2006).
[24] Poss JE. Providing culturally competent care: is there a role for health promoters? Nurs Outlook 1999; 47 (1):30-6.

concerted efforts to reach all migrant workers, and the ability of the promoters to work with the clinical health care team.[25]

Texas

Gateway to Care (also a certified CHW training institution)
Location: Houston, Texas
Services provided by CHWs: Navigators were responsible for helping people find and understand how to use a "Health Home." They performed a combination of services associated with case management, such as outreach, eligibility determination, health promotion, referral, advocacy, and facilitation of service coordination. Navigators provided "cultural linkages between communities and health care providers." Explicit goals were to encourage individuals to seek services "at the lowest level of care," utilize services that "promote health and prevent disease," and improve patient-provider communication, as well as reduce inappropriate emergency room visits. Navigators were also responsible for assisting individuals in obtaining non-health care services and development of family preventive care plans.

Migrant Health Promotion, REACH 2010 *Promotora* Community Coalition Model[26]
Location: Rio Grande Valley (Cameron and Hidalgo Counties), Texas
Services provided by CHWs: REACH 2010 *Promotora* Community Coalition Model: *Promotores* supported changes in physical activity as well as improved nutrition that helps to control or prevent Type 2 diabetes. Three settings in which *promotores* performed their work were: schools, clinics, and *colonias*. School-based *promotores* conducted group education sessions and one-on-one encounters regarding diabetes, nutrition, and physical activity. They also met regularly with school-based teams to assess and implement changes with respect to physical activity, nutrition, and diabetes education among students. Clinic-based *promotores* conducted periodic home visits with current diabetic patients and educated the patients' family/friends with respect to diabetes, nutrition, and physical activity. Community-based *promotores*, those working in the *colonias*, conducted home visits to educate the community about diabetes, nutrition, physical activity, and health/social services; provided training to residents about healthy cooking; and organized monthly community meetings to identify and implement system changes that supported healthy lifestyles.

[25] Poss JE, Rangel R. A tuberculosis screening and treatment program for migrant farmworker families. J Health Care Poor Underserved 1997; 8 (2):133-40.
[26] United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. REACH 2010 *Promotora* Community Coalition Model, Rio Grande Valley in Texas. El Paso (TX): United States-Mexico Border Health Commission, 2004.

De Madres a Madres[27]
Location: Houston, Texas
Services provided by CHWs: The focus was on perinatal health and facilitating the application process for Medicaid eligibility. CHWs promoted mother-to-mother support for at-risk, predominantly Hispanic women, children, and families through education and self-empowerment. CHWs encouraged women to seek prenatal care, and home visits to pregnant mothers occurred at least once per month. Infants and children were followed by CHWs until the age of three on a monthly basis.

CHRISTUS Spohn Health System
Location: Nueces County, Texas
Services provided by CHWs: CHWs were assigned to one of three settings: the emergency department (ED), hospital floor, and primary care center. The emergency department-based worker used "patient satisfaction techniques" to establish a relationship with patients and arrange a follow-up visit to educate them about alternative options to the emergency room. Program descriptions noted that follow-up care was generally needed after an ED visit and that this intervention promoted continuity of care. Benefits to Spohn were evident in that emergency department staff requested expansion of the program.[28] Hospital floor CHWs again focused primarily on patient satisfaction and seeing that all patient needs were met. The CHW linked the patient to the "appropriate problem solver," which was equivalent to becoming an internal advocate (as other CHWs are advocates with agencies outside of their own). The CHW offered "a theoretical companion from the emergency room to the unit and on to the family health center, their source of primary care." The workers based in the primary care center had some home visiting roles, but mainly focused on medication compliance. Center-based workers also spent the first hour of each morning and afternoon taking vital signs in order to help the care team get the center's workflow started efficiently. There was a core of common tasks for each of the three CHW models. All were expected to make phone contacts with certain groups of patients: the previous day's patients in the emergency room, no-shows, and frequent fliers. Part of the common role of all three types of worker was internal referrals. All three settings for the community health workers placed relatively low emphasis on home visits as a technique.

City of Fort Worth Public Health Department[29] (also a certified CHW training institution)[30]
Location: Fort Worth, Texas
Services provided by CHWs: CHW duties included home visits, data collection, assistance in planning, investigation of resident concerns, articulation of community needs, and increasing collaboration between the department and community agencies. According to the City's Web site, the benefits of CHWs were not isolated from those of

[27] De Madres a Madres [Internet]. Houston (TX): de Madres a Madres, Inc.; [cited 2006 Nov 08]. Available from http://www.demadresamadres.8m.com/.
[28] Rush CH. Conversation with: Bert Ramos (Director CHRISTUS Spohn Family Health Center- Westside). 2006 May 01.
[29] Neighborhood Outreach Teams Fort Worth Public Health Department [Internet]. Fort Worth (TX): City of Fort Worth, Texas; [updated 2006 Jun 29/cited 2006 Nov 08]. Available from http://www.fortworthgov.org/health/OR/.
[30] As of June 2006.

the rest of the team, but included "determining the impact of health care activities on the overall health status of the community by collecting statistical data and helping to assure the quality of services." Examples of other CHW activities were social service evaluations, following up on elevated blood lead levels, assisting families in obtaining preventive services, arranging for interpreters and transportation, assisting in planning programs and interventions, and serving as a voice for residents and acting to decrease health disparities. A more recent initiative of the Outreach Teams was the Congregational Health Promoter Program, which educated residents to be volunteer "health promoters" based in faith communities. Following standardized training, volunteers worked to identify health needs of their communities and find resources to meet those needs, which might involve setting up a health screening through the local hospital district or an immunization event for seniors to receive flu shots.

Appendix H: Associations

Appendix H. Selected CHW Associations and Networks

The associations and networks included in this Appendix are those that were identified during the research for this study and are not intended to be comprehensive of all the associations and networks currently in existence.

A. National CHW Networks and Organizations

1. The Community Health Worker Special Primary Interest Group
The American Public Health Association
Washington, D.C.
http://www.apha.org
Phone: (202) 777-2742

2. The Center for Sustainable Health Outreach, The University of Southern Mississippi
Hattiesburg, Mississippi
http://www.usm.edu/csho/
Phone: (601) 266-5903

3. Harrison Institute for Public Law
Georgetown University Law Center
Washington, D.C.
http://www.law.georgetown.edu/clinics/hi/ClientsProjects-HealthPolicy.htm
Phone: (202) 662-4229
Contact person: Jackie Scott

4. Community Health Worker National Network Association
Western Area Health Education Center System
Yuma, Arizona
http://www.chwnna.org/
Phone: (877) 743-1500

5. National Association of Community Health Representatives
http://chrtriennial.com/index.htm
Phone: (520) 383-6200
Contact person: Cynthia Norris

B. State CHW Networks and Organizations

Arizona
Arizona Community Health Outreach Workers Network (AzCHOW)
http://www.publichealth.arizona.edu/azchow/
Phone: (928) 627-1060
Contact person: Flor Redondo

California
Community Health Worker/Promotoras Network
Vision y Compromiso
El Cerrito, California
Phone: (510) 232-7869

Florida
REACH-Workers – the Community Health Workers of Tampa Bay
Tampa, Florida
Phone: (727) 588-4018

Maryland
Community Outreach Workers Association of Maryland, Inc. (COWAM)
Baltimore, Maryland

Massachusetts
Massachusetts Community Health Worker (MACHW) Network
University of Massachusetts Office of Community Programs
Shrewsbury, Massachusetts
http://www.mphaweb.org
Phone: (508) 856-3255

Michigan
Michigan Community Advocate Association (MICAA)
Grand Rapids, Michigan
Phone: (616) 356-6205
Contact person: Lisa Marie Fisher

Minnesota
Minnesota CHW Peer Network
Minnesota International Health Volunteers
Minneapolis, Minnesota
http://www.heip.org/chw_peer_networking.htm
http://www.mihv.org/chwnetwork
Phone: (612) 871-3759

New Mexico
New Mexico Community Health Workers Association (NMCHWA)
Alburquerque, New Mexico
Phone: (505) 272-4741
Contact person: B.J. Ciesielki

New York
Community Health Worker Network of NYC
New York, New York
http://chwnetwork.org/
Phone: (212) 481-7667

Rochester Outreach Workers Association (ROWA)
Rochester, New York
Phone: (585) 274-8490

Oregon
Oregon Community Health Worker Network
Portland, Oregon
Phone: (503) 988-3366

Texas
South Texas Promotora Association
Weslaco, Texas
Phone: (956) 783-9293
Contact person: Ramona Casas

Appendix I: Bibliography

Appendix I. Bibliography

2002 NAICS United States Structure, Including Relationships to 1997 NAICS United States and 1987 Standard Industrial Classification [Internet]. Washington (DC): U.S. Census Bureau; 2002 [updated 2004 Mar 23/cited 2005 Dec 14]. Available from http://www.census.gov/epcd/naics02/naicod02.htm.

A prototype matrix of evolution measures. "The next stage in sustainability: community health workers and state-federal program partnerships." San Antonio (TX): Family Health Foundation, January 8-9, 2001.

AACHC Program Overview [Internet]. Phoenix (AZ): Arizona Association of Community Health Care; 2006 [updated 2006/cited 2006 May 10]. Available from http://www.aachc.org/programs.php.

Abarca J, Ramachandran S. Using community indicators to assess nutrition in Arizona-Mexico border communities. Prev Chronic Dis [Serial Online]; 2005 Jan [21 Mar 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/jan/04_0082.htm.

About Us [Internet]. Albuquerque (NM): New Mexico Community Health Workers Association (NMCHWA); 2006 [updated 2006 Nov 01]. Available from http://www.nmchwa.com/about.html.

About Us [Internet]. Boston (MA): The New England AIDS Education and Training Center (NEAETC); 2005 [updated 2006 Sep 01]. Available from http://www.neaetc.org/about/.

Adams K, Corrigan JM, editors. Priority areas for national action: transforming health care quality. Washington (DC): Institute of Medicine, National Academies Press; 2003.

Ahmed SM, Maurana CA. Reaching out to the underserved: a successful volunteer program. American Journal of Public Health 2000; 90 (3):439-40.

Albright A, Satterfield D, Broussard B et al. Position statement on diabetes community health workers by the American Association of Diabetes Educators (AADE). The Diabetes Educator 2003; 29 (5):818-24.

Alcalay R, Alvarado M, Balcazar H et al. Salud para su corazon: a community-based Latino cardiovascular disease prevention and outreach model. Journal of Community Health 1999; 24 (5):359-79.

Alford CL, Lawler WR, Talamantes MA et al. A geriatrics curriculum for first year medical students: community volunteers become "senior professors". Gerontol Geriatr Educ 2002; 23 (1):13-29.

Allen JK, Scot LB. Alternative models in the delivery of primary and secondary prevention programs. Journal of Cardiovascular Nursing 2003; 18 (2):150-6.

Allen NJ. Case study of a successful health advocate program. Journal of American College Health 1993; 41 (6):293-5.

Altpeter M, Earp JAL, Bishop C et al. Lay health advisor activity levels: definitions from the field. Health Education and Behavior 1999; 26 (4):495-512.

Altpeter M, Earp JAL, Schopler JH. Promoting breast cancer screening in rural, African American communities: the "science and art" of community health promotion. Health Social Work 1998; 23 (2):104-15.

An Act Providing Access to Affordable, Quality, Accountable Health Care, House Bill No. 4850, Section 110 [Internet]. Boston (MA): Massachusetts State Government; 2006 [updated 2006 Aug 11]. Available from http://www.mass.gov/legis/bills/house/ht04/ht04850.htm.

Analysis of stakeholders and their interests under Medicaid managed care. "The next stage in sustainability: community health workers and state-federal partnerships." San Antonio (TX): Family Health Foundation, January 8-9, 2001.

Andersen MR, Hager M, Meischke H et al. Recruitment, retention, and activity of volunteers promoting mammography use in rural communities. Health Promot Pract 2000; 1 (4):341-50.

Andersen MR, Yasui Y, Meischke H et al. The effectiveness of mammography promotion by volunteers in rural communities. American Journal of Preventive Medicine 2000; 18 (3):199-207.

Andrews JO. Sister to sister: a community partnered tobacco cessation intervention in low income housing developments [Ph.D. 249 p.]: University of South Carolina; 2004.

Andrews JO, Felton G, Wewers ME et al. Use of community health workers in research with ethnic minority women. J Nurs Scholarsh 2004; 36 (4):358-65.

Andrews JO, Felton G, Wewers ME et al. Sister to sister: a pilot study to assist African American women in subsidized housing to quit smoking. South Online J Nurs Res 2005; 6 (1):23p.

Andrulis D, Goodman N, Pryor C. What a difference and interpreter can make: health care experiences of uninsured with limited English proficiency. Boston, Mass: The Access Project, Brandeis University 2002.

Approved Community Health Worker Training Programs in Ohio [Internet]. Columbus (OH): Ohio Board of Nursing; 2006 [updated 2006 May/cited 2006 Oct 02]. Available from http://www.nursing.ohio.gov/CommunityHealthWorkers.htm.

Arlotti JP, Cottrell BH, Lee SH et al. Breastfeeding among low-income women with and without peer support. Journal of Community Health Nursing 1998; 15 (3):163-78.

Arnstein P, Vidal M, Wells-Federman C et al. From chronic pain patient to peer: benefits and risks of volunteering. Pain Manage Nurs 2002; 3 (3):94-103.

Awardees Cooperative Agreement Summaries - Cancer Disparities Demonstrations [Internet]. Baltimore (MD): Centers for Medicare & Medicaid Services, U.S. Department of Health and Human Services; 2005 [updated 2006 Oct 18/cited 2006 Sep 26]. Available from http://www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/CPTD_Awardee.pdf.

Azzarto J. Problems with public health outreach. Soc Work Health Care 1995; 22 (1):57-67.

Baier C, Grant EN, Daugherty SR et al. The Henry Horner Pediatric Asthma Program. Chest 1999; 116 (4):204S-6S.

Baker EA, Bouldin N, Durham M et al. The Latino Health Advocacy Program: a collaborative lay health advisor approach. Health Educ Behav 1997; 24 (4):495-509.

Balcázar H, Alvarado M, Hollen ML et al. Evaluation of Salud Para Su Corazón (Health for Your Heart) — National Council of La Raza Promotora outreach program. Prev Chronic Dis [serial online]; 2005 Jul [15 Aug 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/jul/04_0130.htm.

Balcázar H, Hollen LM. The Promotores De Salud Community Health Outreach Model *Salud para su Corazon* (Health For Your Heart) CD ROM. Fort Worth (TX): The North Texas Salud para su Corazon National Heart, Lung, and Blood Institute CVD EDUC Initiative, and University of North Texas Health Science Center School of Public Health, 2004.

Balch P, Solomon R. The training of paraprofessionals as behavior modifiers: a review. American Journal of Community Psychology 1976; 4 (2):167-79.

Banner RO, DeCambra H, Enos R et al. Breast cervical cancer project in a Native Hawaiian community: Wai'anae cancer research project. Prev Medicine 1995; 24 (5):447-53.

Barnes K, Friedman SM, Namerow PB et al. Impact of community volunteers on immunization rates of children younger than 2 years. Archives of Pediatrics and Adolescent Medicine 1999; 153 (5):518-24.

Barnes MD, Fairbanks J. Problem-based strategies promoting community transformation: implications for the community health worker model. Family and Community Health 1997; 20 (1):54-65.

Barnes-Boyd C, Norr KF, Nacion KW. Evaluation of an interagency home visiting program to reduce postneonatal mortality in disadvantaged communities. Public Health Nursing 1996; 13 (3):201-8.

Barnes-Boyd C, Norr KF, Nacion KW. Promoting infant health through home visiting by a nurse-managed community worker team. Public Health Nursing 2001; 18 (4):225-35.

Barth RP. An experimental evaluation of in-home child abuse prevention. Child Abuse and Neglect 1991; 15:363-75.

Barth RP, Hacking S, Ash JR. Preventing child abuse: an experimental evaluation of the child parent enrichment project. Journal of Primary Prevention 1988; 8 (4):201.

Batts ML, Gary TL, Huss K et al. Patient priorities and needs for diabetes care among urban African American adults. The Diabetes Educator 2001; 27 (3):405-12.

Beam N, Tessaro I. The lay health advisor model in theory and practice: an example of an agency-based program. Fam Commun Health 1994; 17 (3):70-9.

Beardain RP, Grantham JB. Use of volunteerism in indigent health care. Journal of Health and Social Policy 1993; 5 (1):1-7.

Becker DM, Yanek LR, Johnson WR et al. Impact of a community-based multiple risk factor intervention on cardiovascular risk in Black families with a history of premature coronary disease. Circulation 2005; 111 (10):1298-304.

Becker J, Kovach AC, Gronseth DL. Individual empowerment: how community health workers operationalize self-determination, self-sufficiency, and decision-making abilities of low-income mothers. Journal of Community Psychology 2004; 32 (3):327-42.

Beckham S, Kaahaaina D, Voloch KA et al. A community-based asthma management program: effects on resource utilization and quality of life. Hawaii Medical Journal 2004; 63 (4):121-6.

Bedics BC, Doelker RE. Health services for underserved areas in the rural south. Health Social Work 1986; 11 (1):42-51.

Bell RA, Hillers VN, Thomas TA. The Abuela Project: safe cheese workshops to reduce the incidence of Salmonella typhimurium from consumption of raw-milk fresh cheese. American Journal of Public Health 1999; 89 (9):1421-4.

Bellin LE, Killeen M, Mazeika JJ. Preparing public health subprofessionals recruited from the poverty group--lessons from an OEO work-study program. American Journal of Public Health 1967; 57 (2):242-52.

Berger IB. Self-sustaining community-based primary eye care. Community Eye Health 1999; 12 (31):41-2.

Berger J. Brooklyn's technicolor dream quilt. New York Times 2005 May 29:33.

Berkley-Patton J, Fawcett SB, Paine-Andrews A et al. Developing capacities of youth as lay health advisors: a case study with high school students. Health Education and Behavior 1997; 24 (4):481-94.

Berman PA, Gwatkin DR, Burger SE. Community-based health workers: head start or false start towards health for all? Social Science and Medicine 1987; 25 (5):443-59.

Berner BJ. Provision of health care in a frontier setting: an Alaskan perspective. Journal of the American Academy of Nurse Practitioners 1992; 4 (3):89-94.

Berrios C. Promotor(a) or community health worker training and certification information and resources. Austin (TX): Texas Department of State Health Services, 2004.

Betancourt JR. Unequal treatment: the Institute of Medicine report and its public health implications. Public Health Reports 2003; 118:287-92.

Bird JA, McPhee SJ, Ha N et al. Opening pathways to cancer screening for Vietnamese-American women: lay health workers hold a key. Preventive Medicine 1998; 27 (6):821-9.

Bird JA, Otero-Sabogal R, Ha N et al. Tailoring lay health worker interventions for diverse cultures: lessons learned from Vietnamese and Latina communities. Health Education Quarterly 1996; 23 (Supplement):S105-S22.

Birkel RC, Golaszewski T, Koman JJ et al. Findings from the horizontes acquired immune deficiency syndrome education project: the impact of indigenous outreach workers as change agents for injection drug users. Health Education Quarterly 1993; 20 (4):523-38.

Bishop C, Earp JA, Eng E et al. Implementing a natural helper lay health advisor program: lessons learned from unplanned events. Health Promot Pract 2002; 3 (2):233-44.

Black MM, Dubowitz H, Hutcheson J et al. A randomized clinical trial of home intervention for children with failure to thrive. Pediatrics 1995; 95 (6):807-14.

Blank MB, Mahmood M, Fox JC et al. Alternative mental health services: the role of the Black church in the South. American Journal of Public Health 2002; 92 (10):1668-72.

Bless C, Murphy D, Vinson N. Nurses' role in primary health care. Nursing and Health Care Perspectives on Community 1995; 16 (2):70-6.

Bloch S. Increasing pap smear compliance among young, underserved women in Northern Manhattan. Columbia University, Comprehensive Cancer Center 1991.

Bloom JR, Syme SL, Pendergrass S et al. Improving hypertension control through tailoring: a pilot study using selective assignment of patients to treatment approaches. Patient Education and Counseling 1987; 10:39-51.

Blue Cross Foundation. Critical links: study findings and forum highlights on the use of community health workers and interpreters in Minnesota. Eagan (MN): Blue Cross and Blue Shield of Minnesota Foundation, 2003.

Blumenthal C, Eng E, Thomas JC. STEP sisters, sex, and STDs: a process evaluation of the recruitment of lay health advisors. American Journal of Health Promotion 1999; 14 (1):4-6, ii.

Bodenheimer T, Fernandez A. High and rising health care costs. Part 4: can costs be controlled while preserving quality? Ann Intern Med 2005; 143 (1):26-31.

Bone LR, Mamon J, Levine DM et al. Emergency department detection and follow-up of high blood pressure: use and effectiveness of community health workers. American Journal of Emergency Medicine 1989; 7 (1):16-20.

Booker VK, Robinson JG, Kay BJ et al. Changes in empowerment: effects of participation in a lay health promotion program. Health Education and Behavior 1997; 24 (4):452-64.

Brach C, Fraser I. Can cultural competency reduce racial and ethnic health disparities? A review and conceptual model. Med Care Res Rev 2000; 57 Suppl 1:181-217.

Bracht N, Finnegan JR, Jr., Rissel C et al. Community ownership and program continuation following a health demonstration project. Health Educ Res 1994; 9 (2):243-55.

Bradley PJ, Martin J. The impact of home visits on enrollment patterns in pregnancy-related services among low-income women. Public Health Nursing 1994; 11 (6):392-8.

Braithwaite R, Lythcott N. Community empowerment as a strategy for health promotion for Black and other minority populations. Journal of the American Medical Association 1989; 261:281-8.

Bratter B, Freeman E. Maturing of peer counseling. Generations 1990; 14 (1):49-52.

Bray ML, Edwards LH. A primary health care approach using Hispanic outreach workers as nurse extenders. Public Health Nursing 1994; 11 (1):7-11.

Breedlove GK. A description of social support and hope in pregnant and parenting teens receiving care from a doula [Ph.D. 159 p.]: (University of Missouri - Kansas City); 2001.

Bridge M, Iden S, Cunniff C et al. Improving access to and utilization of genetic services in Arizona's Hispanic population. Community Genetics 1998; 1 (3):166-8.

Bridges J, Meyer J, McMahon K et al. A health visitor for older people in an accident and emergency department. British Journal of Community Nursing 2000; 5 (2):75-80.

Broadhead RS, Heckathorn DD, Altice FL et al. Increasing drug users' adherence to HIV treatment: results of a peer-driven intervention feasibility study. Soc Sci Med 2002; 55 (2):235-46.

Brook S, Fantopoulos I, Johnson S et al. Training volunteers to work with the chronically mentally ill in the community. Hosp Community Psychiatry 1989; 40 (8):853-5.

Brooks-Gunn J, McCormick MC, Gunn RW et al. Outreach as case finding. The process of locating low-income pregnant women. Med Care 1989; 27 (2):95-102.

Brown SA, Garcia AA, Kouzekanani K et al. Culturally competent diabetes self-management education for Mexican Americans: the Starr County border health initiative. Diabetes Care 2002; 25 (2):259-68.

Brown SA, Hanis CL. A community-based, culturally sensitive education and group-support intervention for Mexican Americans with NIDDM: a pilot study of efficacy. Diabetes Educator 1995; 21 (3):203-10.

Brown SA, Hanis CL. Culturally competent diabetes education for Mexican Americans: the Starr County Study. Diabetes Educ 1999; 25 (2):226-36.

Brown-Hunter M, Price LK. The Good Neighbor Project: volunteerism and the elderly African-American patient with cancer. Geriatr Nurs 1998; 19 (3):139-41.

Brownstein JN. Introductory Remarks. In: Peer Health Education Community-based Programs: Mobilizing Resources for Practice, Policy and Research: Conference Summary, February 7-8, 1993, Tucson (AZ). Arizona Disease Prevention Center and Southwest Border Rural Health Research Center. Tucson, AZ, Rural Health Office, pp. 4-5, 1993.

Brownstein JN, Bone LR, Dennison CR et al. Community health workers as interventionists in the prevention and control of heart disease and stroke. Am J of Prev Med 2005; 29 (5S1):128-33.

Brownstein JN, Cheal N, Ackermann SP et al. Breast and cervical cancer screening in minority populations: a model for using lay health educators. Journal of Cancer Education 1992; 7 (4):321-6.

Bryant JH. Community health workers: the interface between communities and health care systems. WHO Chronicle 1978; 32 (4):144-8.

Buller D, Buller MK, Larkey L et al. Implementing a 5-a-day peer health educator program for public sector labor and trades employees. Health Education and Behavior 2000; 27 (2):232-40.

Burhansstipanov L, Dignan MB, Wound DB et al. Native American recruitment into breast cancer screening: the NAWWA Project. Journal of Cancer Education 2000; 15 (1):28-32.

Burrage J, Demi A. Buddy programs for people infected with HIV. J Assoc Nurses AIDS Care 2003; 14 (1):52-62.

Butcher P, Davis H. A personal effectiveness and stress management course for community health workers: a pilot study. Patient Education and Counseling 1988; 12 (1):13-27.

Butz AM, Malveaux FJ, Eggleston P et al. Use of community health workers with inner-city children who have asthma. Clinical Pediatrics 1994; 33 (3):135-41.

Caldera D, Daniels S, Ashenfelter W. The role of the community health aide in rural Alaska. Arctic Medical Research 1991; Suppl:157-60.

Caldera DL. Community Health Aide Program: health care for rural Alaska Natives by rural Alaska Natives. Arctic Medical Research 1991; Suppl:166-9.

Caldwell J, Scott JP. Effective hospice volunteers: demographic and personality characteristics. American J of Palliative Care 1994; 11 (2):40-5.

Callan LB. A conceptual framework for consideration in the utilization of health aides. American Journal of Public Health 1971; 61 (5):979-87.

Calle EE, Miracle-McMahill HL, Moss RE et al. Personal contact from friends to increase mammography usage. Am J Prev Med 1994; 10 (6):361-6.

Callen WB, McClurken S. The community health advocate. J Allied Health 1981; 10 (4):267-74.

Campbell MK, James A, Hudson MA et al. Improving multiple behaviors for colorectal cancer prevention among African American church members. Health Psychol 2004; 23 (5):492-502.

Cancer prevention and treatment demonstration for ethnic and racial minorities. Baltimore (MD): Centers for Medicare & Medicaid Services, U.S. Department of Health and Human Services, 2003.

Carillo I, Lindstrom CG, Lopez A et al. Eliminating barriers to services for Latina/o survivors of sexual and intimate partner violence. A position statement of the ALAS. Austin (TX): Alianza Latina en Contra la Agresion Sexual (ALSA)/Latina Alliance Against Sexual Aggression, 2004.

Carlaw RW, Mittlemark MB, Bracht N et al. Organization for a community cardiovascular health program: experiences from the Minnesota Heart Health Program. Health Education Quarterly 1984; 11 (3):243-52.

Carrillo JM, Pust RE. Dar a Luz: a perinatal care program for Hispanic women on the U.S.-Mexico Border. American Journal of Preventive Medicine 1986; 2 (1):26-9.

Casalino LP. Disease management and the organization of physician practice. JAMA 2005; 293 (4):485-8.

Cassel JB, Ouellette S. A typology of AIDS volunteers. AIDS Education and Prevention 1995; 7 (5):Suppl: 80-90.

Castañeda X, Clayson ZC, Rundall T et al. Promising outreach practices: enrolling low-income children in health insurance programs in California. Health Promot Pract 2003; 4 (4):430-8.

Castanerares T. Outreach Services. Migrant Health Issues: Monograph Series 2001; 5:27-30.

Castro FG, Elder J, Coe K et al. Mobilizing churches for health promotion in Latino communities: Compañeros en la Salud. Journal of the National Cancer Institute Monographs 1995; (18):127-35.

Cauffman JG, Wingert WA, Friedman DB et al. Community health aides: how effective are they? American Journal of Public Health Nations Health 1970; 60 (10):1904-9.

Caulfield LE, Gross SM, Bentley ME et al. WIC-based interventions to promote breastfeeding among African-American women in Baltimore: effects on breastfeeding initiation and continuation. J Hum Lact 1998; 14 (1):15-22.

CDC AIDS Community Demonstration Projects Research Group. Community-level HIV intervention in 5 cities: final outcome data from the CDC AIDS Community Demonstration Projects. American Journal of Public Health 1999; 89 (3):336-45.

Census 2000 Occupational Categories, With Standard Occupational Classification (SOC) Equivalents, Census 2000 Code Order [Internet]. Washington (DC): Bureau of Labor Statistics, U.S. Department of Labor; 2001 [updated 2001 Jan 01/cited 2005 Dec 14]. Available from http://www.census.gov/hhes/www/ioindex/occ2000t.pdf.

Center of Excellence in Rural Health - Kentucky Homeplace [Internet]. Hazard (KY): University of Kentucky Chandler Medical Center; 1999 [updated 2006 Sep 25/cited 2006 Oct 9]. Available from http://www.mc.uky.edu/RuralHealth/LayHealth/KY_Homeplace.htm.

Centers for Disease Control and Prevention. Community health advisors: models, research, and practice: selected annotations - United States. Volume I. Atlanta (GA): U.S. Department of Health and Human Services, September 1994.

Centers for Disease Control and Prevention. Community health advisors: programs in the United States, health promotion and disease prevention. Volume II. Atlanta (GA): U.S. Department of Health and Human Services, September 1994.

Centers for Disease Control and Prevention. Community health advisors/workers, selected annotations and programs in the United States. Volume III. Atlanta (GA): U.S. Department of Health and Human Services, June 1998.

Centers for Disease Control and Prevention: Community Health Workers and Promotores de Salud: Critical Connections in Communities [Internet]. Atlanta (GA): U.S. Department of Health and Human Services; 2003 [updated 2005 Feb 25/cited 2004 Sep 12]. Available from http://www.cdc.gov/diabetes/projects/comm.htm#2.

Chapman J, Siegel E, Cross A. Home visitors and child health: analysis of selected programs. Pediatrics 1990; 85 (6):1059-68.

Chapter 4723-26 Community Health Workers [Internet]. Columbus (OH): Ohio Board of Nursing; 2005 [updated 2005 Feb 01/cited 2006 Sep 29]. Available from http://www.nursing.ohio.gov/Law_and_Rule.htm.

Chase HP, Larson LB, Massoth DM et al. Effectiveness of nutrition aides in a migrant population. American Journal of Clinical Nutrition 1973; 26 (8):849-57.

Chatters LM, Levin JS, Ellison CG. Public health and health education in faith communities. Health Education and Behavior 1998; 25 (6):689-99.

Chaulk P, Kazandjian VA. Directly observed therapy for treatment completion of pulmonary tuberculosis: consensus statement of the public health tuberculosis guidelines panel. Journal of the American Medical Association 1998; 279:943-8.

Chaulk P, Moore-Rice K, Rizzo R et al. Eleven years of community-based directly observed therapy for tuberculosis. Journal of the American Medical Association 1995; 274:945-51.

Chen M. The effectiveness of health promotion counseling to family caregivers. Public Health Nursing 1999; 16 (2):125-32.

Chen MS, Zaharlick A, Kuun P et al. Implementation of the indigenous model for health education programming among Asian minorities: beyond theory and into practice. Journal of Health Education 1992; 23 (7):400-3.

Chernoff RG, Ireys HT, DeVet KA et al. A randomized, controlled trial of a community-based support program for families of children with chronic illness: pediatric outcomes. Archives of Pediatrics and Adolescent Medicine 2002; 156 (6):533-9.

Chinman MJ, Weingarten R, Stayner D et al. Chronicity reconsidered: improving person-environment fit through a consumer-run service. Community Ment Health J 2001; 37 (3):215-29.

Christensen LA, Reininger BM, Richter DL et al. Aspects of motivation of a volunteer AIDS care team program. AIDS Education and Prevention 1999; 11 (5):427-35.

Clinton B, Larner M. Rural community women as leaders in health outreach. Journal of Primary Prevention 1988; 9 (1):120-9.

CMS Selects Sites For Demonstration Seeking Ways to Reduce Disparities in Cancer Health Care [Internet]. Baltimore (MD): Centers for Medicare & Medicaid Services, U.S. Department of Health and Human Services; 2006 [updated 2006 Mar 24/cited 2006 Nov 01]. Available from http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=1816.

Colombo TJ, Freeborn DK, Mullooly JP et al. The effect of outreach workers' educational efforts on disadvantaged preschool children's use of preventive services. American Journal of Public Health 1979; 69 (5):465-8.

Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st century. Washington (DC): Institute of Medicine, National Academies Press; 2001.

Community health advisor programs: an issue paper presented by the National Rural Health Association [Internet]. Alexandria (VA): National Rural Health Association 2000 [updated November 2000/cited 2004 April 15]. Available from http://www.nrharural.org/advocacy/sub/issuepapers/ipaper17.html.

Community Health Education Center [Internet]. Boston (MA): Boston Public Health Commission; [updated 2006 Nov 01]. Available from http://www.bphc.org/programs/program.asp?b=7&p=201.

Community Health Outreach Worker II (0206) [Internet]. Baltimore (MD): Office of Human Resources, Maryland Department of Health and Mental Hygiene; 1996 [updated 2006 Jul 14/cited 2006 Oct 19]. Available from http://www.dhmh.state.md.us/testingserv/html/opencont/0206.htm.

Community Health Worker Program [Internet]. Albany (NY): New York State Department of Health; [updated 2004 Jun/cited 2006 Nov 08]. Available from http://www.health.state.ny.us/nysdoh/perinatal/en/chwp.htm.

Community health workers in Texas demographic data. Austin (TX): Texas Department of State Health Services, March 2006.

Community health workers: closing gaps in families' health resources. Washington (DC): Family Strengthening Policy Center, 2006.

Community health workers: working document for the WHO study group. Geneva (CH): World Health Organization, 1987.

Community Health Works Projects At-A-Glance 2005-2006 [Internet]. San Francisco (CA): Community Health Works of San Francisco 1992 [updated 2006 Nov 03]. Available from http://www.communityhealthworks.org/projects.html#1.

Community Outreach Programs [Internet]. Somerton (AZ): Regional Center for Border Health, Inc.; 2006 [updated 2006 Jul/cited 2006 Nov 01]. Available from http://www.rcfbh.com/RCBHPrograms.htm.

Conn R. Using health education aides in counseling pregnant women. Public Health Rep 1968; 83 (11):979-82.

Conway TL, Woodruff SI, Edwards CC et al. Intervention to reduce environmental tobacco smoke exposure in Latino children: null effects on hair biomarkers and parent reports. Tob Control 2004; 13 (1):90-2.

Cooke CJ, Meyers A. The role of community volunteers in health interventions: a hypertension screening and follow-up program. American Journal of Public Health 1983; 73 (2):193-4.

Corkery E, Palmer C, Foley ME et al. Effect of a bicultural community health worker on completion of diabetes education in a Hispanic population. Diabetes Care 1997; 20 (3):254-7.

Corzantes CA, Delgado R. Setting standards for monitoring the performance of primary care personnel. Outreach workers. Journal of Ambulatory Care Management 1980; 3 (2):35-52.

Cowans S. Bay area community health worker study. [HED 892 - Final Report]. San Francisco (CA): San Francisco State University, August 2005.

Cox EO, Parsons RJ. Senior-to-senior mediation service project. Gerontologist 1992; 32 (3):420-2.

Daaleman TP. The effect of a paraprofessional home visiting program on utilization of prenatal care. Kans Med 1997; 98 (2):6-9.

Daily EF, Sirey AR, Goodlet LF. New York City's in-hospital family planning program. Family Planning Perspectives 1970; 2 (3):35-40.

Dale S, Brink SG, McKevitt R. The effects of health aides on school nurse activities. J Sch Health 1981:51 547-51.

D'Augelli AR, Ehrlich RP. Evaluation of a community-based system for training natural helpers. II. Effects on informal helping activities. American Journal of Community Psychology 1982; 10 (4):447-56.

D'Augelli AR, Vallance TR. The helping community: issues in the evaluation of a preventive intervention to promote informal helping. Journal of Community Psychology 1982; 10 (3):199-209.

Davis DT, Bustamante A, Brown CP et al. The urban church and cancer control: a source of social influence in minority communities. Public Health Reports 1994; 109 (4):500-6.

Davis JH, Deitrick EP. Novice home visitors teaching/learning needs. Public Health Nursing 1988; 5 (4):214-8.

Davis K, Schoen C, Schoenbaum SC et al. Mirror, mirror on the wall: an update on the quality of American health care through the patient's lens. New York (NY): The Commonwealth Fund, April 2006 Report No.: 915.

Davison DM, Reeder GD, Teverbaugh K. African-American volunteers carrying an HIV prevention message: selective communication. AIDS Education and Prevention 1999; 11 (5):436-49.

Dawson P, Van Doorninck WJ, Robinson JL. Effects of home-based informal social support child health. Developmental and Behavioral Pediatrics 1989; 10 (2):63-7.

De Chiara M, Wolff T. Community-based initiatives: a key to Massachusetts' health enrollment success. "The next stage in sustainability: Community health workers and State-Federal program partnerships." San Antonio, TX, January 8-9, 2001.

de Madres a Madres [Internet]. Houston (TX): de Madres a Madres, Inc.; [updated 2006 Nov 08]. Available from http://www.demadresamadres.8m.com/.

DeNardo BA, Stebulis JA, Tucker LB et al. Parents of children with rheumatic disease as peer counselors. Arthritis Care and Research 1995; 8 (2):120-5.

Dennis CL. Breastfeeding peer support: maternal and volunteer perceptions from a randomized controlled trial. Birth 2002; 29 (3):169-76.

Dennis CL, Hodnett E, Gallop R et al. The effect of peer support on breast-feeding duration among primiparous women: a randomized controlled trial. CMAJ 2002; 166 (1):21-8.

Dennison CR, Hill MN, Bone LR et al. Comprehensive hypertension care in underserved urban Black men: high follow-up rates and blood pressure improvement over 60 months. Circulation 2003; 108:381.

DePue JD, Wells BL, Lasater TM et al. Volunteers as providers of heart health programs in churches: a report on implementation. American Journal of Health Promotion 1990; 4 (5):361-6.

Derose KP, Fox SA, Reigadas E et al. Church-based telephone mammography counseling with peer counselors. J of Health Communication 2000; 5 (2):175-88.

Derose KP, Hawes-Dawson J, Fox SA et al. Dealing with diversity: recruiting churches and women for a randomized trial of mammography promotion. Health Education and Behavior 2000; 27 (5):632-48.

Dickson-Gomez J, Knowlton A, Latkin C. Hoppers and oldheads: qualitative evaluation of a volunteer AIDS outreach intervention. Aids Behav 2003; 7 (3):303-15.

Dignan M, Michielutte R, Blinson K et al. Effectiveness of health education to increase screening for cervical cancer among Eastern-Band Cherokee Indian women in North Carolina. J Natl Cancer Inst 1996; 88 (22):1670-6.

Dignan MB, Michielutte R, Wells HB et al. Health education to increase screening for cervical cancer among Lumbee Indian women in North Carolina. Health Educ Res 1998; 13 (4):545-56.

DMAA Recognizes Excellence in Disease Management [Internet]. Washington (DC): Disease Management Association of America; 2005 [updated 2006 Oct 18/cited 2006 Sep 26]. Available from http://www.dmaa.org/news_releases/2005/PressRelease10182005Excellence.html.

D'Onofrio CN. Aides: pain or panacea? Public Health Reports 1970; 85 (9):788-801.

Duan N, Fox SA, Derose KP et al. Maintaining mammography adherence through telephone counseling in a church-based trial. American Journal of Public Health 2000; 90 (9):1468-71.

Duggan A, Fuddy L, Burrell L et al. Randomized trial of a statewide home visiting program to prevent child abuse: impact in reducing parental risk factors. Child Abuse Negl 2004; 28 (6):623-43.

Duthie P, Philippi E, Schultz J. Collaboration for training: a partnership to improve quality, consistency and cost-effectiveness of essential training for community health workers. Am J Health Educ 2005; 36 (2):113-6.

Earp JA, Eng E, O'Malley MS et al. Increasing use of mammography among older, rural African American women: results from a community trial. American Journal of Public Health 2002; 92 (4):646-54.

Earp JA, Flax VL. What lay health advisors do: an evaluation of advisors' activities. Cancer Pract 1999; 7 (1):16-21.

Earp JA, Viadro CI, Vincus AA et al. Lay health advisors: a strategy for getting the word out about breast cancer. Health Educ Behav 1997; 24 (4):432-51.

Earp JAL, Flax VL. An evaluation of advisors' activities. Cancer Pract 1999; 7 (1):16-21.

Edelstein ME, Gonyer P. Planning for the future of peer education. Journal of American College Health 1993; 41 (6):255-7.

Elder JP. Reaching out to America's immigrants: community health advisors and health communication. American Journal of Health Behavior 2003; 27 (Suppl 3):196-205.

Elder JP, Ayala GX, Campbell NR et al. Interpersonal and print nutrition communication for a Spanish-dominant Latino population: Secretos de la Buena Vida. Health Psychol 2005; 24 (1):49-57.

Eng E. Save Our Sisters Project: a social network strategy for reaching rural Black women. Cancer 1993; 72 (3):1071-7.

Eng E, Hatch JW. Networking between agencies and Black churches: the lay health advisors model. Prevention in Human Services 1991; 10 (1):123-46.

Eng E, Parker E. Measuring community competence in the Mississippi Delta: the interface between program evaluation and empowerment. Health Education Quarterly 1994; 21 (2):199-220.

Eng E, Parker E, Harlan C. Lay health advisor intervention strategies: a continuum from natural helping to paraprofessional helping. Health Education and Behavior 1997; 24 (4):4130-7.

Eng E, Smith J. Natural helping functions of lay health advisors in breast cancer education. Breast Cancer Research and Treatment 1995; 35 (1):23-9.

Eng E, Young R. Lay health advisors as community change agents. Family and Community Health 1992; 15 (1):24-40.

Erwin DO, Ivory J, Stayton C et al. Replication and dissemination of a cancer education model for African American women. Cancer Control 2003; 10 (5 Suppl):13-21.

Erwin DO, Spatz TS, Stotts RC et al. Increasing mammography practice by African American women. Cancer Pract 1999; 7 (2):78-85.

Family Care Coordination [Internet]. Indianapolis (IN): Indiana State Department of Health; 2006 [updated 2001 Oct 02/cited 2006 Jun 19]. Available from http://www.state.in.us/isdh/programs/mch/fcc.htm.

Farquhar SA, Michael YL, Wiggins N. Building on leadership and social capital to create change in 2 urban communities. American Journal of Public Health 2005; 95 (4):596-601.

Farrell K, Wicks MN, Martin JC. Chronic disease self-management improved with enhanced self-efficacy. Clin Nurs Res 2004; 13 (4):289-308.

Fedder DO, Chang RJ, Curry S et al. The effectiveness of a community health worker outreach program on healthcare utilization of West Baltimore City Medicaid patients with diabetes, with or without hypertension. Ethnicity and Disease 2003; 13 (1):22-7.

Fedorak SA. A nontraditional work/training program for community health workers. Educational Gerontology 1987; 13 (3):239-48.

Felix-Aaron KL, Bone LR, Levine DM et al. Using participant information to develop a tool for the evaluation of community health worker outreach services. Ethn Dis 2002; 12 (1):87-96.

Felton CJ, Stastny P, Shern DL et al. Consumers as peer specialists on intensive case management teams: impact on client outcomes. Psychiatr Serv 1995; 46 (10):1037-44.

Fendall NRE. The barefoot doctors: health workers in the front line. The Round Table: The Commonwealth Journal of International Affairs 1976; 264:361-9.

Fennell R. Review of evaluation of peer education programs. Journal of American College Health 1993; 41 (6):251-3.

Fernandez-Esquer ME, Espinoza P, Torres I et al. A su salud: a quasi-experimental study among Mexican American women. American Journal of Health Behavior 2003; 27 (5):536-45.

Finnerty FA, Jr., Mattie EC, Finnerty FA, III. Hypertension in the inner city: analysis of clinic dropouts. Circulation 1973; 47 (1):74-5.

Fisher EB, Sussman LK, Arfken C et al. Targeting high-risk groups: neighborhood organization for pediatric asthma management in the neighborhood asthma coalition. Chest 1994; 106 (4, Supplement):248S-59S.

Flax VL, Earp JL. Counseled women's perspectives on their interactions with lay health advisors: a feasibility study. Health Educ Res 1999; 14 (1):15-24.

Flores L. RE: Community Health Worker Program at EPCC [Internet]. Message to: J Martinez. 2006 Nov 8, 12:48 pm [cited 2006 Nov 08]. [1 screen].

Flynn BS, Gavin P, Worden JK et al. Community education programs to promote mammography participation in rural New York State. Preventive Medicine 1997; 26 (1):102-8.

Forst L, Lacey S, Chen HY et al. Effectiveness of community health workers for promoting use of safety eyewear by Latino farm workers. American Journal of Industrial Medicine 2004; 46 (6):607-13.

Fox D. Strategy sessions held for the development of a national CHW organization. Connections 2002; 3 (2):5.

Fox HB, McManus MA, Limb SJ. An examination of state Medicaid financing arrangements for early childhood development services. Matern Child Health J 2000; 4 (1):19-27.

Fox SA, Stein JA, Gobzalez RE et al. A trial to increase mammography utilization among Los Angeles Hispanic women. J Health Care Poor Underserved 1998; 9 (3):309-21.

Frazier PJ, Jenny J. Use of community residents as interviewers in a dental health care research project. Public Health Reports 1976; 91 (1):77-85.

Freeborn DK, Mullooly JP, Colombo T et al. The effect of outreach workers' services on the medical care utilization of a disadvantaged population. Journal of Community Health 1978; 3 (4):306-20.

Freudenberg N. Community-based health education for urban populations: an overview. Health Education and Behavior 1998; 25 (1):11-23.

Freudenberg N. Health promotion in the city: a review of current practice and future prospects in the United States. Annu Rev Public Health 2000; 21:473-503.

Friedman AR, Butterfoss FD, Krieger JW et al. Allies community health workers: bridging the gap. Health Promot Pract 2006; 7 (2 Suppl):96S-107S.

Fuller J. Challenging old notions of professionalism: how can nurses work with paraprofessional ethnic health workers? Journal of Advanced Nursing 1995; 22 (3):465-72.

Gaffney KF, Altieri LB. Mother's rankings of clinical intervention strategies used to promote infant health. Pediatric Nursing 2001; 27 (5):510-5.

Garcia EA, Roy LC, Okada PJ et al. A comparison of the influence of hospital-trained, ad hoc, and telephone interpreters on perceived satisfaction of limited English-proficient parents presenting to a pediatric emergency department. Pediatr Emerg Care 2004; 20 (6):373-8.

Gary TL, Batts-Turner M, Bone LR et al. A randomized controlled trial of the effects of nurse case manager and community health worker team interventions in urban African-Americans with type 2 diabetes. Control Clin Trials 2004; 25 (1):53-66.

Gary TL, Bone LR, Hill MN et al. Randomized controlled trial of the effects of nurse case manager and community health worker interventions on risk factors for diabetes-related complications in urban African Americans. Preventative Medicine 2003; 37 (1):23-32.

Gasana J, Chamorro A. Environmental lead contamination in Miami inner-city area. Journal of Exposure Analysis and Environmental Epidemiology 2002; 12 (4):265-72.

Gateway to Care Opening Doors to Healthcare [Internet]. Houston (TX): Gateway to Care; 2000 [updated 2006 Oct 19/cited 2006 Nov 03]. Available from http://www.gatewaytocare.org/.

Gatz M, Barbarin OA, Tyler FB et al. Enhancement of individual and community competence: the older adult as community worker. American Journal of Community Psychology 1982; 10 (3):291-303.

General CHR Information, History & Background Development of the Program [Internet]. Rockville (MD): Indian Health Service, U.S. Department of Health and Human Services; [updated 2006 Mar 30/cited 2006 Oct 21]. Available from http://www.ihs.gov/NonMedicalPrograms/chr/history.cfm.

Gerber AR, King LC, Dunleavy GJ et al. An outbreak of syphilis on an Indian reservation: descriptive epidemiology and disease-control measures. American Journal of Public Health, Nations Health 1989; 79 (1):83-5.

Gerber JC, Stewart DL. Prevention and control of hypertension and diabetes in an underserved population through community outreach and disease management: a plan of action. J Assoc Acad Minor Phys 1998; 9 (3):48-52.

Giarratano G, Bustamante-Forest R, Carter C. A multicultural and multilingual outreach program for cervical and breast cancer screening. J Obstet Gynecol Neonatal Nurs 2005; 34 (3):395-402.

Giblin PT. Effective utilization and evaluation of indigenous health care workers. Public Health Reports 1989; 104 (4):361-8.

Gielen AC, McDonald EM, Wilson ME et al. Effects of improved access to safety counseling, products, and home visits on parents' safety practices: result of a randomized trial. Archives of Pediatrics & Adolescent Medicine 2002; 156 (1):33.

Gochenour J, Hopper S. Community health outreach workers: voices and issues, a qualitative research study. Harrisonburg (VA): Virginia Center for Health Outreach, 2002.

Goetzel RZ, Ozminkowski RJ, Villagra VG et al. Return on investment in disease management: a review. Health Care Financing Review 2005; 26 (4):1-19.

Gold RB. Special analysis: Medicaid family planning expansions hit stride. The Guttmacher Report on Public Policy 2003; 6 (4).

Gomby DS, Culross PL, Behrman RE. Home visiting: recent program evaluations--analysis and recommendations. Future of Children 1999; 9 (1):4-26.

Gonzalez Arizmendi L, Ortiz L. Neighborhood and community organizing in colonias: a case study in the development and use of promotoras. Journal of Community Practice 2004; 12 (1/2):23-35.

Gonzalez JL, Woodward LH. Expanding roles for health assistants in a model cities health program. Health Service Reports 1974; 89 (2):145-51.

Gould JM, Lomax AR. Evolution of peer education: where do we go from here? Journal of American College Health 1993; 41 (6):235-40.

Governor Pataki Announces $8 Million in Funding for Family Health Services, Perinatal Care. Initiative Supports Expanded Access for Women to These Vital Services [Internet]. Albany (NY): New York State Governor's Page; 2006 [updated 2006 May 4/cited 2006 Sep 26]. Available from http://www.ny.gov/governor/press/06/0504061.html.

Graffy J, Taylor J, Williams A et al. Randomised controlled trial of support from volunteer counsellors for mothers considering breast feeding. BMJ 2004; 328 (7430):26.

Graham AV, Frank SH, Zyzanski SJ et al. A clinical trial to reduce the rate of low birth weight in an inner-city Black population. Family Medicine 1992; 24 (6):439-46.

Grant T, Streissguth A, Ernst C. Benefits and challenges of paraprofessional advocacy with mothers who abuse alcohol and drugs and their children. Zero Three 2002; 23 (2):14-20.

Griffin JA, Gilliland SS, Perez G et al. Participant satisfaction with a culturally appropriate diabetes education program: the Native American Diabetes Project. Diabetes Educ 1999; 25 (3):351-63.

Griffin JA, Gilliland SS, Perez G et al. Challenges to participating in a lifestyle intervention program: the Native American Diabetes Project. Diabetes Educ 2000; 26 (4):681-9.

Grinstead OA, Zack B, Faigeles B. Collaborative research to prevent HIV among male prison inmates and their female partners. Health Educ Behav 1999; 26 (2):225-38.

Grossman EH, Rizzolo PJ, Atkinson V. Geriatric peer-counseling: pilot project provides support for the homebound elderly. North Carolina Medical Journal 1992; 53 (6):296-8.

Grossman S, Canterbury RJ, Lloyd E et al. Model approach to peer-based alcohol and other drug prevention in a college population. Journal of Alcohol and Drug Education 1994; 39 (2):50-61.

Guarnero PA. Innovation and discovery in research with vulnerable populations: participation of Latina LHAs in community research and health promotion... proceedings of the Communicating Nursing Research Conference and WIN Assembly, "Responding to Societal Imperatives Through Discovery and Innovation", held April 10-12, 2003, Scottsdale, Arizona. Commun Nurs Res 2003; 36:116.

H.R. Res. 4469, 109th Cong. 1st Sess. (2005)

Hale WD, Bennett RG, Oslos NR et al. Project REACH: a program to train community-based lay health educators. Gerontologist 1997; 37 (5):683-7.

Halpert BP. Model to nationally replicate a locally successful rural family caregiver program: the volunteer information provider program. Gerontologist 1989; 29 (4):561-3.

Hans S, Korfmacher J. The professional development of paraprofessionals. Zero Three 2002; 23 (2):4-8.

Hansen LK, Feigl P, Modiano MR et al. An educational program to increase cervical and breast cancer screening in Hispanic women: a Southwest oncology group study. Cancer Nurs 2005; 28 (1):47-53.

Haraldson SS. Community health aides for sparse populations. World Health Forum 1988; 9 (2):235-8.

Haraldson SS. The Alaskan community health aide scheme: a successful rural health program. New York State Journal of Medicine 1990; 90 (2):61-3.

Hardy CM, Wynn TA, Huckaby F et al. African American community health advisors trained as research partners: recruitment and training. Family & Community Health 2005; 28 (1):28-40.

Harper GW, Carver LJ. "Out-of-the-mainstream" youth as partners in collaborative research: exploring the benefits and challenges. Health Educ Behav 1999; 26 (2):250-65.

Hatch J, Moss N, Saran A et al. Community research: partnership in Black communities. American Journal of Preventive Medicine 1993; 9 (6-Suppl):27-31 (Discussion 2-4).

Havas S, Koumjian L, Reisman J et al. Results of the Massachusetts model systems for blood cholesterol screening project. JAMA 1991; 266 (3):375-81.

Hawthorne K, Tomlinson S. One-to-one teaching with pictures--flashcard health education for British Asians with diabetes. Br J Gen Pract 1997; 47 (418):301-4.

Health Education and Training Centers (HETC) Community Health Worker Best Practices Compendium. Wexford, PA: National HETC Annual Meeting, 2004.

Health Programs [Internet]. Boston (MA): Action for Boston Community Development, Inc.; 2005 [updated 2006/cited 2006 Sep 29]. Available from http://www.bostonabcd.org/programs/health-programs.htm.

Health Resources and Services Administration. Impact of community health workers on access, use of services, and patient knowledge and behavior. Bureau of Primary Health Care, Health Resources and Services Administration, U.S. Department of Health and Human Services, 1998.

Health Resources and Services Administration. A literature review and discussion of research studies and evaluations of the roles and responsibilities of community health workers (CHWs). Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, July 5, 2002.

Health Resources and Services Administration. Directory of HRSA's Community Health Workers (CHWs) Programs. Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, July 5, 2002.

Health Resources and Services Administration. The Alaska community health aide program: an integrative literature review and visions for future research. Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services, March 2003.

Health Resources and Services Administration. Community health worker national workforce study: an annotated bibliography. Bureau of Health Professions, Health Resources and Services Administration, U.S. Department of Health and Human Services, March 2007.

Heath AM. Health aides in health departments. Public Health Reports 1967; 82:608-14.

Heath AM, Pelz DR. Perception of functions of health aides by aides themselves and by others. Public Health Reports 1970; 85 (9):767-72.

Heath GW, Leonard BE, Wilson RH et al. Community-based exercise intervention: Zuni diabetes project. Diabetes Care 1987; 10 (5):579-83.

Heins HC, Jr., Nance NW, Ferguson JE. Social support in improving perinatal outcome: the Resource Mothers Program. Obstet Gynecol 1987; 70 (2):263-6.

Henderson J, Gutierrez-Mayka M, Garcia J et al. Model for Alzheimer's disease support group development in African-American and Hispanic populations. Gerontologist 1993; 33 (3):409-14.

Henderson JN. Power support: Alzheimer's disease support groups for minority families. Aging 1992; No. 363-364:24-8.

Herbert GK, Chevalier MC, Meyers CL. Factors contributing to the successful use of indigenous mental health workers. Hospital & Community Psychiatry 1974; 25 (5):308-10.

Hiatt RA, Pasick RJ, Stewart S et al. Community-based cancer screening for underserved women: design and baseline findings from the breast and cervical cancer intervention study. Preventative Medicine 2001; 33 (3):190-203.

Hill MN, Becker DM. Roles of nurses and health workers in cardiovascular health promotion. American Journal of Medical Sciences 1995; 310 (Suppl.1) S123-S6.

Hill MN, Bone LR, Butz AM. Enhancing the role of community-health workers in research. Image J Nurs Sch 1996; 28 (3):221-6.

Hill MN, Bone LR, Kim MT et al. A clinical trial to improve high blood pressure care in young urban Black men: recruitment, follow-up, and outcomes. American J of Hypertension 1999; 12:548-54.

Hill MN, Han H-R, Dennison CR et al. Hypertension care and control in underserved urban African American men: behavioral and physiologic outcomes at 36 months. American Journal of Hypertension 2003; 16 (11):906-13.

History | Significant Milestones [Internet]. Windrow Rock (AZ): Emergency Medical Services and Department of Information Technology, Navajo Nation; 2006 [updated 2006/cited 2006 Oct 24]. Available from http://www.navajoems.navajo.org/history.htm.

Hoff W. Role of the community health aide in public health programs. Public Health Reports 1969; 84 (11):998-1002.

Holley SJ. Second look at substance abuse: peer prevention and education. Alcohol, Drugs, and Driving 1992; 8 (3-4):265-76.

Holmes AP, Hatch J, Robinson GA. Lay educator approach to sickle cell disease education. Journal of National Black Nurses' Association 1992; 5 (2):26-36.

Holtrop JS, Hickner J, Dosh S et al. "Sticking to it-diabetes mellitus": a pilot study of an innovative behavior change program for women with type 2 diabetes. Am J Health Educ 2002; 33 (3):161-6.

Home visiting: recent program evaluations. Selected bibliography. Future of Children 1999; 9 (1):Inside back cover.

Hopper SV, Miller JP, Birge C et al. A randomized study of the impact of home health aides on diabetic control and utilization patterns. American Journal of Public Health 1984; 74 (6):600-2.

Horacek TM, Betts NM, Rutar J. Peer nutrition education programs on college campuses. J of Nutrition Education 1996; 28 (6):353-7.

Howze EH, Broyden RR, Impara JC. Using informal caregivers to communicate with women about mammography. Health Communication 1992; 4 (3):227-44.

Hummel J, Cortte R, Ballweg R et al. Physician assistant training for Native Alaskan community health aides: the MEDEX northwest experiences. Alaska Medicine 1994; 36 (4):183-8.

Humphry J, Jameson LM, Beckham S. Overcoming social and cultural barriers to care for patients with diabetes. Western Journal of Medicine 1997; 167 (3):138-44.

Hunkeler EM, Meresman JF, Hargreaves WA et al. Efficacy of nurse telehealth care and peer support in augmenting treatment of depression in primary care. Arch Fam Med 2000; 9 (8):700-8.

Hunter JB, deZapien JG, Papenfuss M et al. The impact of a promotora on increasing routine chronic disease prevention among women aged 40 and older at the U.S.-Mexico border. Health Educ Behav 2004; 31 (4 Suppl):18S-28S.

Hutcheson JJ, Black MM, Talley M et al. Risk status and home intervention among children with failure-to-thrive: follow-up at age 4. J Pediatr Psychol 1997; 22 (5):651-68.

Hutchison RR, Quartaro EG. Training imperatives for volunteers caring for high-risk, vulnerable populations. J Community Health Nursing 1993; 10 (2):87-96.

Hutchison RR, Quartaro EG. High-risk vulnerable populations and volunteers: a model of education and service collaboration. Journal of Community Health Nursing 1995; 12 (2):111-9.

Industry and Occupation 2002 [Internet]. Washington (DC): U.S. Census Bureau, Housing and Household Economic Statistics Division; 2005 [updated 2005 Mar 08/cited 2005 Dec 14]. Available from http://www.census.gov/hhes/www/ioindex/ioindex02/txtnew02.html#21-1011.

Ingram M, Gallegos G, Elenes J. Diabetes is a community issue: the critical elements of a successful outreach and education model on the U.S.-Mexico Border. Prev Chronic Dis [Serial Online]; 2005 Jan [21 Mar 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/jan/04_0078.htm.

Ingram M, Staten L, Cohen SJ et al. The use of the retrospective pre-test method to measure skills acquisition among community health workers. Internet Journal of Public Health Education; B6-1-15, 2004 Feb [15 Mar 2005]. Available from: URL: http://www.aspher.org/D_services/I-JPHE/journal/article.php3?id_article=9.

Instructional Programs - Community Health Worker [Internet]. El Paso (TX): El Paso Community College; 2005 [updated 2006 Nov 03]. Available from http://www.epcc.edu/sites/departments/instruction/programs/community/index.html.

Ireland M, Krauss BJ. Women find their voices. The success of community outreach and case finding. N and HC Perspectives on Community 1997; 18 (2):62-7.

Ireys HT, Chernoff R, DeVet KA et al. Maternal outcomes of a randomized controlled trial of a community-based support program for families of children with chronic illnesses. Archives of Pediatrics and Adolescent Medicine 2001; 155 (7):771-7.

Ireys HT, Sills EM, Kolodner KB et al. A social support intervention for parents of children with juvenile rheumatoid arthritis: results of a randomized trial. Journal of Pediatric Psychology 1996; 21 (5):633-41.

Israel B, Checkoway B, Schulz A et al. Health education and community empowerment: conceptualizing and measuring perception of individual, organizational, and community control. Health Education Quarterly 1994; 21 (2):149-70.

Israel BA. Social networks and social support: implications for natural helper and community level interventions. Health Education Quarterly 1985; 12 (1):65-80.

Jackson C, Fortmann SP, Flora JA et al. The capacity-building approach to intervention maintenance implemented by the Stanford Five-City Project. Health Educ Res 1994; 9 (3):385-96.

Jackson EJ, Parks CP. Recruitment and training issues from selected lay health advisor programs among African Americans: a 20-year perspective. Health Educ Behav 1997; 24 (4):418-31.

Janz NK, Schottenfeld D, Doerr KM et al. A two-step intervention of increase mammography among women aged 65 and older. American Journal of Public Health 1997; 87 (10):1683-6.

Jemmott L, Jemmott J. Increasing condom use interventions among sexually active Black adolescent women. Nursing Resources 1992; 41:272-9.

Jepson C, Kessler LG, Portnoy B et al. Black-White differences in cancer prevention knowledge and behavior. American J of Public Health 1991; 81:994-9.

Jessee PO, Cecil CE. Evaluation of social problem solving abilities in rural home health visitors and visiting nurses. Maternal-Child Nursing Journal 1992; 20 (2):53-64.

Johnson RE, Green BL, Anderson-Lewis C et al. Community health advisors as research partners: an evaluation of the training and activities. Family & Community Health 2005; 28 (1):41-50.

Johnston HL. Health for the nation's harvesters : a history of the migrant health program in its economic and social setting. Farmington Hills (MI): National Migrant Worker Council; 1985.

Jones EG, Renger R, Firestone R. Populations at risk across the lifespan: deaf community analysis for health education priorities. Public Health Nursing 2005; 22 (1):27-35.

Jones ME, Mondy LW. Prenatal education outcomes for pregnant adolescents and their infants using trained volunteers. J of Adolescent Health Care 1990; 11 (5):437-44.

Jorgenson T, Sanders G. A study of a volunteer caregiver program. Activities Adapt Aging 2002; 27 (2):53-69.

Joseph DH, Griffin M, Hall RF et al. Peer coaching: an intervention for individuals struggling with diabetes. Diabetes Educ 2001; 27 (5):703-10.

Joseph JM. Peer education and the deaf community. Journal of American College Health 1993; 41 (6):264-6.

Julnes G, Konefal M, Pindur W et al. Community-based perinatal care for disadvantaged adolescents: evaluation of the Resource Mothers Program. Journal of Community Health 1994; 19 (1):41-53.

Kahssay HM, Taylor ME, Berman PA. Community health workers: the way forward. Geneva (CH): World Health Organization; 1998.

Kaiser MA, Manning DT, Balson PM. Lay volunteers' knowledge and beliefs about AIDS prevention. Journal of Community Health 1989; 14 (4):215-26.

Kane CF, Blank MB. NPACT: enhancing programs of assertive community treatment for the seriously mentally ill. Community Ment Health J 2004; 40 (6):549-59.

Kane CF, Ennis JM. Health care reform and rural mental health: severe mental illness. Community Ment Health J 1996; 32 (5):445-62.

Kaplowitz JA. Community health advisors. Journal of Christian Nursing 1991; 8 (4):12-5.

Kay BJ. Barefoot doctors in rural Georgia: the effect of peer selection on the performance of trained volunteers. Social Science and Medicine 1984; 19 (8):873-8.

Keane D, Nielsen C, Dower C. Community health workers and promotores in California. San Francisco (CA): UCSF Center for the Health Professions, 2004.

Keeling RP, Engstrom EL. Refining your peer education program. Journal of American College Health 1993; 41 (6):259-63.

Kegler MC, Malcoe LH. Results from a lay health advisor intervention to prevent lead poisoning among rural Native American children. American Journal of Public Health 2004; 94 (10):1730-5.

Kegler MC, Stern R, Whitecrow-Ollis S et al. Assessing lay health advisor activity in an intervention to prevent lead poisoning in Native American children. Health Promot Pract 2003; 4 (2):189-96.

Kelly E, McFarlane J, Rodriguez R et al. Community health organizing: whom are we empowering? Journal of Health Care for the Poor and Underserved 1993; 4 (4):358-62.

Kelly J. Continuing medical education for community health aides/practitioners. Int J Circumpolar Health 1998; 57 Suppl 1:100-2.

Kemp CE. Community health nursing education: where we are going and how to get there. Nursing Education Perspectives 2003; 24 (3):144.

Kennell J, Klaus M, McGrath S et al. Continuous emotional support during labor in a US hospital. A randomized controlled trial.[see comment]. JAMA 1991; 265 (17):2197-201.

Keyserling TC, Ammerman AS, Samuel-Hodge CD et al. A diabetes management program for African American women with type 2 diabetes. Diabetes Educ 2000; 26 (5):796-805.

Keyserling TC, Samuel-Hodge CD, Ammerman AS et al. A randomized trial of an intervention to improve self-care behaviors of African-American women with type 2 diabetes: impact on physical activity. Diabetes Care 2002; 25 (9):1576-83.

Kiger H. Outreach to multiethnic, multicultural, and multilingual women for breast cancer and cervical cancer education and screening: a model using professional and volunteer staffing. Family & Community Health 2003; 26 (4):307-18.

Kim S, Koniak-Griffin D, Flaskerud JH et al. Building excellence in vulnerable populations research: the CVPR portfolio: the impact of lay health advisors on health promotion in a Latino community... proceedings of the Communicating Nursing Research Conference and WIN Assembly, "Responding to Societal Imperatives Through Discovery and Innovation", held April 10-12, 2003, Scottsdale, Arizona. Commun Nurs Res 2003:36-65.

Kim S, Koniak-Griffin D, Flaskerud JH et al. The impact of lay health advisors in cardiovascular health promotion: using a community-based participatory approach. Journal of Cardiovascular Nursing 2004; 19 (3):192-9.

Kim S, McLeod JH, Rader D et al. Evaluation of prototype school-based peer counseling program. J of Drug Education 1992; 22 (1):37-53.

King ES, Benincasa T, Harrop-Stein C et al. Using peer volunteers to promote mammography education in senior citizens' housing facilities. Holistic Nurs Pract 1999; 14 (1):12-21.

Kistin N, Abramson R, Dublin P. Effect of peer counselors on breastfeeding initiation, exclusivity, and duration among low-income urban women. Journal of Human Lactation 1994; 10 (1):11-5.

Kitzman H, Olds DL, Sidora K et al. Enduring effects of nurse home visitation on maternal life course: a 3-year follow-up of a randomized trial. Journal of the American Medical Association 2000; 283 (15):1983-9.

Klecan D, Coultas DB, Herman C et al. Development and evaluation of a smoking cessation training for border lay advisors. Cancer Research Therapy and Control 1999; 8 (3):233.

Klein NA, Sondag KA, Drolet JC. Understanding volunteer peer health educators' motivations: applying social learning theory. Journal of American College Health 1994; 43 (3):126-30.

Kobetz E, Vatalaro K, Moore A et al. Taking the transtheoretical model into the field: a curriculum for lay health advisors. Health Promot Pract 2005; 6 (3):329-37.

Koch E. Promotoras and community health advisors: program challenge in an age of change. Washington (DC): Georgetown University Law Center.

Kohn LT, Corrigan JM, Donaldson MS, editors. To err is human: building a safer health system. Washington (DC): Institute of Medicine, National Academies Press; 2000.

Kohn S. Community health advocacy. In: PM Lazes; LH Kaplan; KA Gordon, editors. Handbook of Health Education. Second edn. Rockville (MD): Aspen Publishers; 1987; p. 261-78.

Komaroff AL, Black WL, Flatley M et al. Protocols for physician assistants: management of diabetes and hypertension. The New England Journal of Medicine 1974; 290 (6):307-12.

Komro KA, Perry CL, Veblen-Mortenson S et al. Peer participation in Project Northland: a community-wide alcohol use prevention. J of School Health 1994; 64 (8):318-22.

Konefal MM. Norfolk Resource Mothers Program evaluation [PH.D. 261 p.]: (Old Dominion University); 1991.

Korfmacher J, Marchi I. The helping relationship in a teen parenting program. Zero Three 2002; 23 (2):21-6.

Korfmacher J, O'Brien R, Hiatt S et al. Differences in program implementation between nurses and paraprofessionals providing home visits during pregnancy and infancy: a randomized trial. American Journal of Public Health 1999; 89 (12):1847-51.

Koroloff NM, Elliott DJ, Koren PE et al. Linking low-income families to children's mental health services: an outcome study. J of Emotional and Behavioral Disorders 1996; 4 (1):2-11.

Korte C, Gupta V. Program of friendly visitors as network builders. Gerontologist 1991; 31 (3):404-7.

Kovach AC, Becker J, Worley H. The impact of community health workers on the self-determination, self-sufficiency, and decision-making ability of low-income women and mothers of young children. Journal of Community Psychology 2004; 32 (3):343-56.

Krieger J, Collier C, Song L et al. Linking community-based blood pressure measurement to clinical care: a randomized controlled trial of outreach and tracking by community health workers. American Journal of Public Health 1999; 89 (6):856-61.

Krieger JW, Castorina JS, Walls ML et al. Increasing influenza and pneumococcal immunization rates: a randomized controlled study of a senior center-based intervention. American Journal of Preventive Medicine 2000; 18 (2):123-31.

Krieger JW, Takaro TK, Allen C et al. The Seattle-King County Healthy Homes Project: implementation of a comprehensive approach to improving indoor environmental quality for low-income children with asthma. Environ Health Perspect 2002; 110 Suppl 2:311-22.

Krieger JW, Takaro TK, Song L et al. The Seattle-King County Healthy Homes Project: a randomized, controlled trial of a community health worker intervention to decrease exposure to indoor asthma triggers. American Journal of Public Health 2005; 95 (4):652-9.

La Familia Sana Program, a historical overview of lay health worker programs. Hood River (OR): La Familia Sana, Inc., 1992.

Lacey L, Tukes S, Manfredi C et al. Use of lay health educators for smoking cessation in a hard-to-reach urban community. Journal of Community Health 1991; 16 (5):269-82.

Lam TK, McPhee SJ, Mock J et al. Encouraging Vietnamese-American women to obtain pap tests through lay health worker outreach and media education. Journal of General Internal Medicine 2003; 18 (7):516-24.

Landen JB. Community health representatives: the vital link in Native American health care. IHS Primary Care Provider 1992; 17 (7):101-2.

Landon B, Loudon J, Selle M et al. Factors influencing the retention and attrition of community health aides/practitioners in Alaska. J Rural Health 2004; 20 (3):221-30.

Lapham S, Hall M, Skipper B. Homelessness and substance use among alcohol abusers following participation in Project H&ART. J of Addictive Dis 1995; 14 (4):41-55.

Lapham SC, Hall M, McMurray-Avila M et al. Albuquerque's community-based housing and support services demonstration program for homeless alcohol abusers. Alcoholism Treatment Quarterly 1993; 10 (3-4):139-54.

Lapham SC, Hall M, McMurry-Avila M et al. Residential care: Albuquerque, Evanston/VA, Los Angeles. Alcoholism Treatment Quarterly 1995; 10 (3-4):139-54.

Lapierre J, Perreault M, Goulet C. Prenatal peer counseling: an answer to the persistent difficulties with prenatal care for low-income women. Public Health Nurs 1995; 12 (1):53-60.

Larimore WL, Reynolds JL. Family practice maternity care in America: ruminations on reproducing an endangered species--family physicians who deliver babies.[see comment]. J Am Board Fam Pract 1994; 7 (6):478-88.

Larson K, McGuire J, Watkins E et al. Maternal care coordination for migrant farmworker women: program structure and evaluation of effects on use of prenatal care and birth outcome. The Journal of Rural Health 1992; 8 (2):128-33.

Lasater TM, DePue JD, Wells BL et al. Effectiveness and feasibility of delivering nutrition education programs through religious organizations. Health Promotion International 1990; 5 (4):253-8.

Laws MA. Foundation approaches to U.S.-Mexico Border and binational health funding. Health Affairs 2002; 21 (4):271-7.

Lay educators shore up diabetes DM efforts in Hispanic communities. Dis Manag Advis 2003; 9 (8):107-10, 5.

Leigh G, Hodgins DC, Milne R et al. Volunteer assistance in the treatment of chronic alcoholism. American J of Drug and Alcohol Abuse 1999; 25 (3):543-59.

Levine DM, Becker DM, Bone LR. Narrowing the gap in health status of minority populations: a community-academic medical center partnership. American Journal of Preventive Medicine 1992; 8 (5):319-23.

Levine DM, Bone L. Impact of a planned health education approach on the control of hypertension in a high-risk population. J of Human Hypertension 1990; 4 (4):317-21.

Levine DM, Bone LR, Hill MN et al. The effectiveness of a community/academic health center partnership in decreasing the level of blood pressure in an urban African-American population. Ethnicity and Disease 2003; 13 (3):354-61.

Levine DM, Bone LR, Hill MN et al. For the patient. Community health workers help to reduce high blood pressure. Ethnicity and Disease 2003; 13 (3):403.

Lewin SA, Dick J, Pond P et al. Lay health workers in primary and community health care. Cochrane Database of Systematic Reviews, 2005.

Linnan LA, Gans KM, Hixson ML et al. Training health professionals and lay volunteers to deliver cholesterol screening and education programs. Public Health Reports 1990; 105 (6):589-98.

List MA, Lacey L, Hopkins E et al. Involvement of low literate elderly women in the development and distribution of cancer screening materials. Family and Community Health 1994; 17 (1):42-55.

Littleton MA, Cornell CE, Dignan M et al. Lessons learned from the Uniontown Community Health Project. American Journal of Health Behavior 2002; 26 (1):34-42.

Logsdon MC, Davis DW. Paraprofessional support for pregnant & parenting women. MCN Am J Matern Child Nurs 2004; 29 (2):92-7; quiz 8-9.

Long DG, Funk-Archuleta MA, Geiger CJ et al. Peer counselor program increases breastfeeding rates in Utah Native American WIC population. Journal of Human Lactation 1995; 11 (4):279-84.

Lorig K, Gonzalez VM. Community-based diabetes self-management education: definition and case study. Diabetes Spectrum 2000; 13 (4):234-8.

Lorig KR, Ritter PL, Gonzalez VM. Hispanic chronic disease self-management: a randomized community-based outcome trial. Nursing Research 2003; 52 (6):361-9.

Love MB, Gardner K. The emerging role of the community health worker in California. Results of a statewide survey and San Francisco Bay Area focus groups on the community health workers in California's public health system. Community Health Works of San Francisco, California Department of Health Services, 1992.

Love MB, Gardner K, Legion V. Community health workers: who they are and what they do. Health Education and Behavior 1997; 24 (4):510-22.

Love MB, Legion V, Shim JK et al. CHWs get credit: a 10-year history of the first college-credit certificate for community health workers in the United States. Health Promot Pract 2004; 5 (4):418-28.

Lowe J, Barg F, Norman S et al. An urban integrational program for cancer control education. Journal of Cancer Education 1997; 12:233-9.

Lowe JI, Barg FK, Stephens K. Community residents as lay health educators in a neighborhood cancer prevention program. Journal of Community Practice 1998; 5 (4):39-52.

Lukes S. Promotora training program invests in oral health. Access 2003; 17 (9):30-2.

Mack M, Uken R, Powers JV. People improving the community's health: community health workers as agents of change. J Health Care Poor Underserved 2006; 17 (1 Suppl):16-25.

Mahon J, McFarlane J, Golden K. De madres a madres: a community partnership for health. Public Health Nursing 1991; 8 (1):15-9.

Maiman LA, Hildreth NG, Cox C, Greenland P. Improving referral compliance after public cholesterol screening. Am J of Public Health 1992; 82 (6):804-9.

Mamon JA, Shediac MC, Crosby CB et al. Development and implementation of an intervention to increase cervical cancer screening in inner-city women. International Quarterly of Community Health Education 1991-1992; 12 (1):21-34.

Marcenko MO, Spence M. Home visitation services for at-risk pregnant and postpartum women: a randomized trial. Am J Orthopsychiatry 1994; 64 (3):468-78.

Margolis K, Lurie N, McGovern PG et al. Increasing breast and cervical cancer screening in low-income women. Journal of General Internal Medicine 1998; 13 (8):515-21.

Martin MY. Community health advisors effectively promote cancer screening. Ethn Dis 2005; 15 (2 Suppl 2):S14-6.

Marx JD. Motivational characteristics associated with health and human service volunteers. Administration in Social Work 1999; 23 (1):51.

Maslanka H. Burnout, social support and AIDS volunteers. AIDS Care 1996; 8 (2):195-206.

Massachusetts Department of Public Health. Community health workers: essential to improving health in Massachusetts, findings from the Massachusetts community health worker survey. Boston (MA): Division of Primary Care and Health Access, Bureau of Family and Community Health, Center for Community Health, March 2005.

Maurana CA. Strategies for developing a community health advocate program. Family & Community Health 2000; 23 (1):40.

May KM, McLaughlin F, Penner M. Preventing low birth weight: marketing and volunteer outreach. Public Health Nursing 1991; 8 (2):97-104.

May KM, Mendelson C, Ferketich S. Community empowerment in rural health care. Public Health Nursing 1995; 12 (1):25-30.

May ML, Bowman GJ, Ramos KS et al. Embracing the local: enriching scientific research, education, and outreach on the Texas-Mexico Border through a participatory action research partnership. Environ Health Perspect 2003; 111 (13):1571-6.

May ML, Contreras RB, Callejas L et al. Mujer y Corazón: community health workers and their organizations on the U.S.-Mexico Border. An exploration study. College Station, TX: The Southwest Rural Health Research Center, School of Rural Public Health, Texas A&M University System Health Science Center, 2004.

May ML, Kash B, Contreras R. Southwest Rural Health Research Center: Community health worker (CHW) certification and training - a national survey of regionally and state-based programs. Office of Rural Health Policy, Health Services and Resources Administration, U.S. Department of Health and Human Services, 2005.

Mayo RM, Sherrill WW, Crew LC et al. Connecting rural African American and Hispanic women to cancer education and screening: the Avon Health Connector Project. Journal of Cancer Education 2004; 19 (2):123-6.

McCabe S, Unzicker RE. Changing roles of consumer/survivors in mature mental health systems. New Dir Ment Health Serv 1995; (66):61-73.

McCormick MC, Brooks-Gunn J, Shorter T et al. Outreach as case finding: its effect in enrollment in prenatal care. Medical Care 1989; 27 (2):103-11.

McCosker H, Madl R, Harris M et al. Evaluation of a self-paced education package on violence against women for rural community-based health workers. Aust J Rural Health 1999; (7):5-12.

McCue M, Afifi LA. Using peer helpers for tuberculosis prevention. Journal of American College Health 1996; 44 (4):173-6.

McCurren C, Dowe D, Rattle D et al. Depression among nursing home elders: testing an intervention strategy. Appl Nurs Res 1999; 12 (4):185-95.

McElmurry BJ, Park CG, Buseh AG. The nurse-community health advocate team for urban immigrant primary health care. J Nurs Scholarsh 2003; 35 (3):275-81.

McElmurry BJ, Swider SM, Bless C et al. Community health advocacy: primary health care nurse-advocate teams in urban communities. In. Perspectives in Nursing. New York, NY: National League for Nursing Press; 1990; p. 117-31.

McElmurry BJ, Wansley R, Gugenheim AM et al. The Chicago Health Corps: strengthening communities through structured volunteer service. Adv Pract Nurs Q 1997; 2 (4):59-66.

McFarlane J. De Madres a Madres: an access model for primary care. Am J of Public Health 1996; 86 (6):879-80.

McFarlane J, Fehir J. De Madres a Madres: a community, primary health care program based on empowerment. Health Education Quarterly 1994; 21 (3):381-94.

McFarlane J, Wiist W. Preventing abuse to pregnant women: implementation of a "mentor mother" advocacy model. J of Community Health Nursing 1997; 14 (4):237-49.

McGlade MS, Saha S, Dahlstrom ME. The Latina paradox: an opportunity for restructuring prenatal care delivery. American Journal of Public Health 2004; 94 (12):2062-5.

McKnight JL. Two tools for well-being: health systems and communities. Am J Prev Med 1994; 10 (3 Suppl):23-5.

McLaughlin FJ, Altemeier WA, Christensen MJ et al. Randomized trial of comprehensive prenatal care for low-income women: effect on infant birth weight. Pediatrics 1992; 89:128-32.

McNeil JK. Effects of nonprofessional home visit programs for subclinically unhappy and unhealthy older adults. J of Applied Gerontology 1995; 14 (3):333-42.

McPhee SJ. Promoting breast and cervical cancer screening among Vietnamese American women: two interventions. Asian American and Pacific Islander Journal of Health 1998; 6 (2):344-50.

McPherson SL, Joseph D, Sullivan E. The benefits of peer support with diabetes. Nurs Forum 2004; 39 (4):5-12.

McQuiston C, Flaskerud JH. "If they don't ask about condoms, I just tell them": a descriptive case study of Latino lay health advisers' helping activities. Health Educ Behav 2003; 30 (1):79-96.

McVety D, Geller B, Haisman P et al. Small group training in breast screening using volunteer leaders. Florida Nurse 1993; 41 (3):10-1.

Meister JS. Community outreach and community mobilization: options for health at the U.S.-Mexico Border. Journal of Border Health 1997; 2 (4):32-8.

Meister JS, Moya EM, Rosenthal EL et al. Community health worker evaluation tool kit. El Paso (TX): Funded by The Annie E. Casey Foundation and produced by The University of Arizona Rural Health Office and College of Public Health 2000.

Meister JS, Warrick LH, deZapien JG et al. Using lay health workers: case study of a community-based prenatal intervention. Journal of Community Health 1992; 17 (1):37-51.

Merewood A, Philipp BL. Peer counselors for breastfeeding mothers in the hospital setting: trials, training, tributes, and tribulations. Journal of Human Lactation 2003; 19 (1):72-6.

Merzel C, D'Afflitti J. Reconsidering community-based health promotion: promise, performance and potential. American Journal of Public Health 2003; 93 (4):557-74.

Metzler MM, Higgins DL, Beeker C. Addressing urban health in Detroit, New York City, and Seattle through community-based participatory research partnership. American Journal of Public Health 2003; 93 (5):803-11.

Miller BG, Pylpa J. Dilemma of mental health paraprofessionals at home. Am Indian and Alaskan Native Mental Health Research 1995; 6 (2):13-33.

Milligan RA, Pugh LC, Bronner YL et al. Breastfeeding duration among low income women. J Midwifery Womens Health 2000; 45 (3):246-52.

Milligan S, Maryland P, Ziegler H et al. Natural helpers as street health workers among the Black urban elderly. Gerontologist 1987; 27 (6):712-5.

Minnesota community health worker work force analysis: summary of findings for Minneapolis and St. Paul. Mankato (MN): Healthcare Education Industry Partnership, 2005.

Minow M. Revisiting the issues: home visiting. The Future of Children 1994; 4 (2):243-6.

Mittelmark MB, Hunt MK, Heath GW et al. Realistic outcomes: lessons from community-based research and demonstration programs for the prevention of cardiovascular diseases. J Public Health Policy 1993; 14 (4):437-62.

Mock J, Nguyen T, Nguyen KH et al. Processes and capacity-building benefits of lay health worker outreach focused on preventing cervical cancer among Vietnamese. Health Promot Pract 2006; 7 (3 Suppl):223S-32S.

Montgomery EB. Health helpers in Erie County, N.Y. HSMHA Health Reports 1971; 86 (10):879-87.

Moore BJ, Morris DW, Burton B et al. Measuring effectiveness of service aides in infant immunization surveillance program in North Central Texas. American Journal of Public Health 1981; 71 (6):634-6.

Moore F, Steward J. Important variables influencing successful use of aides. Health Service Reports 1992; 87:555-61.

Moore FI, Ballinger P, Beasley JD. Influence of postpartum home visits on postpartum clinic attendance. Public Health Reports 1974; 89 (4):360-4.

Moore GF. Catalyst who inspires self-help: the community health worker in deprived areas. Professional Nurse 1990; 5 (7):342-4.

Moore K, Mengol M. Expanding the team: the use of volunteers in a diabetes education program. Diabetes Educator 2002; 28 (4):554, 6-8, 60.

Morisky DE, Lees NB, Sharif BA et al. Reducing disparities in hypertension control: a community-based hypertension control project (CHIP) for an ethnically diverse population. Health Promot Pract 2002; 3 (2):264-75.

Morisky DE, Levine DM, Green LW et al. Five-year blood pressure control and mortality following health education for hypertensive patients. Am J Public Health 1983; 73 (2):153-62.

Morrow AL, Guerrero ML, Shults J et al. Efficacy of home-based peer counseling to promote exclusive breastfeeding: a randomized controlled trial. The Lancet 1999; 353 (1226-31).

Morrow G, Andersen R, Tripp M. VISTA means vision: three winning strategies for training diverse outreach workers. Austin (TX): Texas Department of State Health Services, 1998.

Mudd G. Chapter 8: Promotoras. In: J Perkins, editor. Lower Rio Grande Valley Community Assessment; 2001.

Multicultural Cancer Task Force [Internet]. Boston (MA): Beth Israel Deaconess Medical Center; [updated 2006 Nov 08]. Available from http://www.bidmc.harvard.edu/display.asp?node_id=743.

Murdock SH, Hoque N, McGehee M. Population change in the United States: implications of an aging and diversifying population for health care in the 21st century. In: T Miles; A Furino, editors. Annual Review of Gerontology and Geriatrics: Aging Health Care Workforce Issues. New York (NY): Springer Publishing Company, Inc.; 2005; p. 19-63.

Murnik M, Randal F, Guevara M et al. Web-based primary care referral program associated with reduced emergency department utilization. Fam Med 2006; 38 (3):185-9.

Murphy MA. Improvement of community health services through the support of indigenous nonprofessionals. JNY State Nurses Assoc 1972; 3 (2):29-33.

Musser-Granski J, Carrillo DF. The use of bilingual, bicultural paraprofessionals in mental health services: issues for hiring, training, and supervision. Community Ment Health J 1997; 33 (1):51-60.

Nacion KW, Norr KF, Burnett GM et al. Validating the safety of nurse-health advocate services. Public Health Nursing 2000; 17 (1):32-42.

Nagy MC, Leeper JD, Hullett S et al. Rural Alabama Pregnancy and Infant Health Program. Family and Community Health 1988; 11 (2):49-56.

National Advisory Committee on Rural Health and Human Services: Compendium of Recommendations by the National Advisory Committee on Rural Health. [Internet]. Rockville (MD): Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services 1993 [updated 2006 Nov 01]. Available from http://ruralcommittee.hrsa.gov/nac_comp.htm.

National Fund for Medical Education. Advancing community health worker practice and utilization: the focus on financing. San Francisco (CA): Center for the Health Professions, University of California at San Francisco, 2006.

Navaie-Waliser M, Gordon SK, Hibberd ME. The Mentoring Mothers Program: a community-empowering approach to reducing infant mortality... including commentary by Budin WC. J Perinat Educ 1996; 5 (4):47-61.

Navaie-Waliser M, Martin SL, Campbell MK et al. Factors predicting completion of a home visitation program by high-risk pregnant women: the North Carolina Maternal Outreach Worker Program. American Journal of Public Health 2000; 90 (1):121-4.

Navaie-Waliser M, Martin SL, Tessaro I et al. Social support and psychological functioning among high-risk mothers: the impact of the Baby Love Maternal Outreach Worker Program. Public Health Nursing 2000; 17 (4):280-91.

Navarro AM, Senn KL, Kaplan RM et al. Por La Vida intervention model for cancer prevention in Latinas. J Natl Cancer Inst Monogr 1995; Monographs. (18):137-45.

Navarro AM, Senn KL, McNicholas LJ et al. Por La Vida model intervention enhances use of cancer screening tests among Latinas. American Journal of Preventive Medicine 1998; 15 (1):32-41.

Neighborhood Outreach Teams Fort Worth Public Health Department [Internet]. Fort Worth (TX): City of Fort Worth, Texas; [updated 2006 Jun 29/cited 2006 Nov 08]. Available from http://www.fortworthgov.org/health/OR/.

Nemcek MA, Sabatier R. State of evaluation: community health workers. Public Health Nursing 2003; 20 (4):260-70.

Ness K, Elliott P, Wilbur V. Peer educator nutrition program for seniors in a community development context. Journal of Nutrition Education 1992; 24 (2):91-4.

New Mexico Department of Health. Senate joint memorial 076: report on the development of a community health advocacy program in New Mexico. Santa Fe (NM): Department of Health, November 24, 2003.

New York Department of Health, Division of Epidemiology. Community health worker program. New York State Journal of Medicine 1990; 90 (10):519-20.

Nichols DC, Berrios C, Samar H. Texas' community health workforce: from state health promotion policy to community-level practice. Prev Chronic Dis [Serial Online]; 2005 Jan [21 Mar 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/nov/pdf/05_0059.pdf

Nielsen M, Blenker M, Bloom M et al. Older persons after hospitalization: A controlled study of home aide service. American J of Public Health 1972; 62 (8):1094-101.

Norr KF, Crittenden KS, Lehrer EL et al. Maternal and infant outcomes at one year for a nurse-health advocate home visiting program serving African Americans and Mexican Americans. Public Health Nursing 2003; 20 (3):190-203.

Norris SL, Chowdhury FM, Van Le K et al. Effectiveness of community health workers in the care of persons with diabetes. Diabetic Medicine 2006; 23 (5):544-56.

Nuckolls ES, Cantwell R. Donor family volunteers in community education: development of an organ procurement organization's program. J Transplant Coord 1993; 3 (1):27-30.

Nyamathi A, Flaskerud JH, Leake B et al. Evaluating the impact of peer, nurse case-managed, and standard HIV risk-reduction programs on psychosocial and health-promoting behavioral outcomes among homeless women. Research in Nursing and Health 2001; 24 (5):410-22.

Nyamathi AM, Flaskerud J, Bennett C et al. Evaluation of two AIDS education programs for impoverished Latina women. AIDS Educ Prev 1994; 6 (4):296-309.

Occupational Employment Statistics. Washington (DC): Division of Occupational Employment Statistics, Bureau of Labor Statistics, U.S. Department of Labor; [updated 2006 Oct 04/cited 2006 Oct 20]. Available from http://data.bls.gov/oes/search.jsp?data_tool=OES. customized tables

Occupational Information Network O*NET OnLine: O*NET OnLine Help Crosswalk [Internet]. Washington (DC): National Center for O*NET Development; [updated 2005 Dec 14]. Available from http://online.onetcenter.org/help/online/crosswalk.

Occupational Outlook Handbook, 2006-07 Edition, Social and Human Service Assistants [Internet]. Washington (DC): Bureau of Labor Statistics, U.S. Department of Labor; 2006 [updated 2006 Aug 04/cited 2006 Oct 20]. Available from http://www.bls.gov/oco/ocos059.htm.

Office of Family Planning [Internet]. Rockville (MD): Office of Family Planning, Office of Population Affairs, Office of Public Health and Science, U.S. Department of Health and Human Services; [updated 2006 Sep 16/cited 2006 Sep 26]. Available from http://opa.osophs.dhhs.gov/titlex/ofp.html.

Office of Management and Budget. North American Industry Classification System—Revision for 2002; Notice. Federal Register 2001; 66 (10).

Office of Management and Budget. Standard Occupational Classification-Revision for 2010; Notice. Federal Register 2006; 71 (94).

Office of Women's and Children's Health - Health Start [Internet]. Phoenix (AZ): Arizona Department of Health Services, Division of Public Health Services; 2006 [updated 2006 Sep 13/cited 2006 Oct 9]. Available from http://www.azdhs.gov/phs/owch/healthstart.htm.

O'Hara-Devereaux M, Reeves W. The Alaskan health aide: a successful model of family and community health. Family and Community Health 1980; 3 (2):71-84.

Olds D, Kitzman H. Review of research on home visiting for pregnant women and parents of young children. Future of Children 1993; 3 (3):53-92.

Olds DL, Eckenrode J, Henderson Jr. CR et al. Long-term effects of home visitation on maternal life course and child abuse and neglect. Fifteen-year follow-up of a randomized trial. JAMA 1997; 278 (8):637-43.

Olds DL, Henderson CR, Kitzman H et al. The promise of home visitations: results of two randomized trials. J of Community Psychology 1998; 26 (1):5-21.

Olds DL, Kitzman H. Can home visitation improve the health of women and children at environmental risk? Pediatrics 1990; 86 (1):108-16.

Olds DL, Robinson J, O'Brien R et al. Home visiting by paraprofessionals and by nurses: a randomized, controlled trial. Pediatrics 2002; 110 (3):486-96.

Olds DL, Robinson J, Pettitt L et al. Effects of home visits by paraprofessionals and by nurses: age 4 follow-up results of a randomized trial. Pediatrics 2004; 114 (6):1560-8.

Orr AL. Training outreach workers to serve American Indian elders with visual impairment and diabetes. Journal of Visual Impairment and Blindness 1993; 87 (9):336-40.

Ostwald SK, Runge A, Lees EJ et al. Texas certified volunteer long-term care ombudsmen: perspectives of role and effectiveness. J Am Med Dir Assoc 2003; 4 (6):323-8.

Parker EA, Schulz AJ, Israel BA et al. Detroit's East Side Village Health Worker Partnership: community-based lay health advisor intervention in urban area. Health Education and Behavior 1998; 25 (1):24-45.

Patient Navigator Outreach and Chronic Disease Prevention Act of 2005, §109-18, 109 U.S.C. §1812 (2005)

Patton S. Empowering women: improving a community's health. Nursing Management 1997; 26 (8):36-7.

Perez M, Findley SE, Mejia M et al. The impact of community health worker training and programs in NYC. J Health Care Poor Underserved 2006; 17 (1 Suppl):26-43.

Persily CA. Lay home visiting may improve pregnancy outcomes. Holistic Nurs Pract 2003; 17 (5):231-8.

Persky V, Coover L, Hernandez E et al. Chicago community-based asthma intervention trial: feasibility of delivering peer education in an inner-city population. Chest 1999; 116 (4 Suppl 1):216S-23S.

Petersen WO, Trapp MA, Sellers TA et al. Evaluation of a training program to prepare community health representatives to promote breast and cervix cancer screening among Native American women. Journal of Cancer Education 2004; 19 (4):237-43.

Peterson J, Atwood JR, Yates B. Key elements for church-based health promotion programs: outcome-based literature review. Public Health Nursing 2002; 19 (6):401-11.

Peterson JA, Yates BC, Atwood JR et al. Effects of a physical activity intervention for women. West J Nurs Res 2005; 27 (1):93-110.

Peterson-Sweeney K, McMullen A, Yoos HL et al. Parental perceptions of their child's asthma: management and medication use. J Pediatr Health Care 2003; 17 (3):118-25.

Pew Health Professions Commission. Community health workers: integral yet often overlooked members of the health care workforce. San Francisco (CA): University of California Center for the Health Professions, 1994.

Philis-Tsimikas A, Walker C. Improved care for diabetes in underserved populations. J Ambul Care Manage 2001; 24 (1):39-43.

Philis-Tsimikas A, Walker C, Rivard L et al. Improvement in diabetes care of underinsured patients enrolled in Project Dulce: a community-based, culturally appropriate, nurse case management and peer education diabetes care model. Diabetes Care 2004; 27 (1):110-5.

Pilisuk M, Parks SH, Kelly J et al. Helping network approach: community promotion of mental health. Journal of Primary Prevention 1982; 3 (2):116-32.

Points of Light Foundation Announces State Volunteering Rates, Research Highlights Impact of Volunteer Center National Network [Internet]. Washington (DC): The Points of Light Foundation; 2004 [updated 2004 Sep 13/cited 2005 Dec 14]. Available from http://www.pointsoflight.org/about/mediacenter/releases/2004/09-13.cfm.

Poland M, Giblin P, Waller J et al. Effects of a home visiting program on prenatal care and birthweight: a case comparison study. Journal of Community Health 1992; 17 (4):221-9.

Poland ML, Giblin PT, Waller JB et al. Development of a paraprofessional home visiting program for low-income mothers and infants. American Journal of Preventive Medicine 1991; 7 (4):204-7.

Policy Statement #200115: "Recognition and Support for Community Health Workers' Contributions to Meeting our Nation's Health Care Needs". Washington (DC): American Public Health Association, 2001.

Poss JE. Providing culturally competent care: is there a role for health promoters? Nursing Outlook 1999; 47 (1):30-6.

Poss JE, Rangel R. A tuberculosis screening and treatment program for migrant farmworker families. J Health Care Poor Underserved 1997; 8 (2):133-40.

Prince JA. Job market assessment of family health and support workers: Hillsborough, Orange and Pinellas Counties. Maternal and Child Services - Workforce Development Program, The Lawton and Rhea Chiles Center for Health Mothers and Babies, Hillsborough Community College, and St. Petersburg College, October 2003.

Project Abstract - H49MC00101, San Antonio Health Start Project. Rockville (MD): Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, 2001.

Project Abstract - H49MC00114, Fort Worth Healthy Start Initiative. Rockville (MD): Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, 2001.

Project Abstract - H49MC00157, Dallas Health Start: eliminating disparities in perinatal health (general population). Rockville (MD): Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services, 2001.

Promotora Program Development Committee: Promotora Program Development Committee Meeting Minutes - for 2000 (August 17, 2000) [Internet]. Austin (TX): Texas Department of State Health Services; 2000 [updated 2006 Oct 30/cited 2006 Sep 30]. Available from http://archive.tdh.state.tx.us/legacytdh/ppdc/minutes_2000.htm#August%2017,%202000.

Promotora Program Development Committee. Report on the feasibility of voluntary training and certification of promotores(as) or community health workers. Austin (TX): Texas Department of State Health Services, 2000.

Proulx DE. Core curriculum guidebook for a community health workers basic certificate program. 2002:359.

Proulx DE, Collier N. Project jump start curriculum guidebook. Tucson, AZ: University of Arizona, 2003.

Pugh LC, Milligan RA, Brown LP. The breastfeeding support team for low-income, predominantly-minority women: a pilot intervention study. Health Care Women Int 2001; 22 (5):501-15.

Pugh LC, Milligan RA, Frick KD et al. Breastfeeding duration, costs, and benefits of a support program for low-income breastfeeding women. Birth 2002; 29 (2):95-100.

Pugh LC, Milligan RA, Gray S et al. First stage labor management: an examination of patterned breathing and fatigue. Birth 1998; 25 (4):241-5.

Quick R, Bashshur R. Three perspectives on community health aides: surveys of health aides, consumers and providers in Western Alaska. Arctic Med Res 1991; Supplement:161-5.

Quinn MT, McNabb WL. Training lay health educators to conduct a church-based weight-loss program for African American women. Diabetes Educator 2001; 27 (2):231-8.

Rabiner DJ. The new senior volunteer: a bold initiative to expand the supply of independent living services to older adults. Home Health Care Serv Q 2001; 20 (2):17-45.

Raczynski JM, Cornell CE, Stalker V et al. Developing community capacity and improving health in African American communities. American Journal of the Medical Sciences 2001; 322 (5):269-75.

Raczynski JM, Cornell CE, Stalker VG et al. A multi-project systems approach to developing community trust and building capacity. J Public Health Management Practice 2001; 7 (2):10-20.

Ramirez AG, McAlister A, Gallion KJ et al. Community level cancer control in a Texas barrio: Part I--Theoretical basis, implementation, and process evaluation. Journal of the National Cancer Institute Monographs 1995; 18:117-22.

Ramirez-Valles J. Promoting health, promoting women: the construction of female and professional identities in the discourse of community health workers. Social Science and Medicine 1998; 47 (11):1749-62.

Ramirez-Valles J. Changing women: the narrative construction of personal change through community health work among women in Mexico. Health Education and Behavior 1999; 26 (1):25-42.

Ramirez-Valles J. "I was not invited to be a [CHW] ... I asked to be one": motives for community mobilization among women community health workers in Mexico. Health Education and Behavior 2001; 28 (2):150-65.

Ramos B. Best practice entry form: community health workers in a primary care setting. Corpus Christi (TX): CHRISTUS Spohn Hospital Corpus Christi-*Memorial*, Nueces County Hospital District, March 2005.

Ramos IN, May M, Ramos KS. Environmental health training of promotoras in colonias along the Texas-Mexico Border. American Journal of Public Health 2001; 91 (4):568-70.

Ramos-Gomez FJ, Reimann JOF, Talavera GA et al. Evaluating effectiveness of *promotoras* in the prevention of early childhood caries. Dental Care Providers 2003; Seq # 186.

Rankin SH. Commentary: Creative support strategies to improve recovery from cardiac events: peer support, lay health advisors, and eHealth. J Cardiovasc Nurs 2004; 19 (3):172-3.

Reames B, Burnett MF. Weight management practices of Black paraprofessional women. J of American Diabetic Assoc 1991; 91 (7):841-3.

Reding DJ, Fischer V, Gunderson P et al. Skin cancer prevention: a peer education model. Wisconsin Medical Journal 1995; 94 (2):77-81.

Reeder GD, Pryor JB, Harsh L. Activity and similarity in safe sex workshops led by peer educators. AIDS Education and Prevention 1997; 9 (Supplement A):77-89.

Refugee and Immigrant Health Program [Internet]. Jamaica Plain (MA): Massachusetts Department of Public Health; 2002 [updated 2006 Nov 08]. Available from http://www.mass.gov/dph/cdc/rhip/wwwrihp.htm.

Reiff R, Riessman F, editors. The indigenous nonprofessional, a strategy of change in community action and community mental health programs. New York (NY): Behavioral Publications, Inc.; 1964.

Rene J, Weinberger M, Mazzuca SA et al. Reduction of joint pain in patients with knee osteoarthritis who have received monthly telephone calls from lay personnel and whose medical treatment regimens have remained stable. Arthritis and Rheumatism 1992; 35 (5):511-5.

Report: Setting the Agenda for Research on Cultural Competence in Health Care [Internet]. Rockville (MD): Office of Minority Health, U.S. Department of Health and Human Services; 2004 [updated 2006 Jul 07/cited 2006 Nov 01]. Available from http://www.omhrc.gov/templates/content.aspx?ID=86&lvl=3&lvlID=254.

Resident health advocate job description. Boston (MA): Boston Housing Authority, 2005.

Resident Health Advocate Program [Internet]. Boston (MA): Boston Housing Authority; 2000 [updated 2006 Nov 08]. Available from http://www.bostonhousing.org/detpages/deptinfo139.html.

Resident Health Advocate Recruitment Flyer "Attention BHA Residents". Boston (MA): Boston Housing Authority, 2006.

Resnicow K, Campbell MK, Carr C et al. Body and soul. A dietary intervention conducted through African-American churches.[see comment]. American Journal of Preventive Medicine 2004; 27 (2):97-105.

Results of the Southwestern Connecticut community outreach worker survey. Bridgeport (CT): Southwestern Area Health Education Center and Housatonic Community College, October 2000.

Richardson-Collins AM, Coleman AA. Norfolk State University resource mothers program: a community response to adolescent pregnancy. In: RW Johnson, editor. African American voices: African American health educators speak out (Pamphlet #14-2631). Vol. 14-2631: National League for Nursing; 1995; p. 113-36.

Richter RW, Bengen B, Alsup PA et al. The community health worker. A resource for improved health care delivery. Am J Public Health 1974; 64 (11):1056-61.

Rickert VI, Gottlieb A. Effects of a peer-counseled AIDS education program on knowledge, attitudes, and satisfaction of adolescents. J of Adolescent Health 1991; 12 (1):38-43.

Rico C. Community health advisors: emerging opportunities in managed care. Annie E. Casey Foundation, Seedco--Partnerships for Community Development, 1997.

Rinehart ME. Reach to Recovery Program. Cancer 1994; 74 (1, Supplement):372-5.

Ritchie D. Community health workers: building a diverse workforce to decrease health disparities. Providence (RI) Transcultural Community Health Initiative (TCHI), Center for the Study of Race and Ethnicity in America at Brown University, Feb 17-May 17, 2004.

Ro MJ, Treadwell HM, Northridge M. Community health workers and Community Voices: promoting good health. Battle Creek (MI): National Center for Primary Care, Morehouse School of Medicine, October 2003.

Roberts RN, Wasik BH. Home visiting programs for families with children birth to three: results of a national survey. Journal of Early Intervention 1990; 14 (3):274-84.

Robinson S, Clump D, Weitzel T et al. The Memorial Meal Mates: a program to improve nutrition in hospitalized older adults. Geriatr Nurs 2002; 23 (6):332-5.

Robinson SF, Anding J, Garza B et al. Designing nutrition education programs to reach Mexican American populations. Journal of Extension 2003; 41 (1).

Rodewald LE, Szilagyi PG, Humiston SG et al. A randomized study of tracking with outreach and provider prompting to improve immunization coverage and primary care. Pediatrics 1999; 103 (1):31-8.

Rodney M, Clasen C, Goldman G et al. Three evaluation methods of a community health advocate program. Journal of Community Health 1998; 23 (5):371-81.

Rodriguez R, McFarlane J, Mahon J et al. De Madres a Madres: a community partnership to increase access to prenatal care. Bulletin of the Pan American Health Organization 1993; 27 (4):403-8.

Rodriguez VM, Conway TL, Woodruff SI et al. Pilot test of an assessment instrument for Latina community health advisors conducting an ETS intervention. Journal of immigrant health 2003; 5 (3):129.

Rodriguez-Saldana J. Challenges and opportunities in border health. Prev Chronic Dis 2005; 2 (1):A03.

Rogers CM. Voices of adolescent mothers participating in a Resource Mothers Program [D.S.N. 130 p.]: (The University of Alabama at Birmingham); 2004.

Rogers MM, Peoples-Sheps MD, Sorenson JR. Translating research into MCH service: comparison of a pilot project and a large-scale Resource Mothers Program. Public Health Reports 1995; 110 (5):563-9.

Rogers MM, Peoples-Sheps MD, Suchindran C. Impact of a social support program on teenage prenatal care use and pregnancy outcomes. J Adolesc Health 1996; 19 (2):132-40.

Rohr F, Munier A, Sullivan D et al. The Resource Mothers Study of maternal phenylketonuria: preliminary findings. J Inherit Metab Dis 2004; 27 (2):145-55.

Roman LA, Lindsay JK, Moore JS et al. Community health workers: examining the helper therapy principle. Public Health Nursing 1999; 16 (2):87-95.

Rose D, Quade B. The agricultural worker health and housing program: informing the community. Los Angeles (CA): The California Endowment, April 2006.

Rosen P. Supporting women in labor: analysis of different types of caregivers. J Midwifery Womens Health 2004; 49 (1):24-31.

Rosenthal EL, Wiggins N, Brownstein JN et al. The final report of the national community health advisor study. Tucson (AZ): University of Arizona, 1998.

Ross MW, Williams ML. Effective targeted and community HIV/STD prevention programs. J Sex Res 2002; 39 (1):58-62.

Rounds-Riley J. Use of objective structured clinical examinations (OSCEs) in training and evaluating community health aides. Int J Circumpolar Health 1998; 57 Suppl 1:103-5.

Rudner N. Working with community health advisors as part of the community health team. J of Public Health Management and Practice 1996; 2 (3):60-5.

Ruiz P. A seven-year evaluation of a career-escalation training program for indigenous nonprofessionals. Hospital & Community Psychiatry 1976; 27 (4):253-7.

Ruiz-Beltran M, Kaman J. The socio-economic and cultural impediments to well-being along the U.S.-Mexico Border. Journal of Community Health 2001; 26 (2):123-32.

Rush CH. Conversation with: M. Kate Stewart. 2004 November 08.

Rush CH: Current issues in the field [Internet]. San Antonio (TX): Family Health Foundation and South Texas Health Research Center; 2004 [updated 2004 Dec 05 /cited 2006 Nov 03]. Available from http://www.family-health-fdn.org/CHWResources/issues.htm.

Rush CH. Telephone Conversation with: Ellen Pais (Urban Education Partnership). 2006 February 10.

Rush CH. Conversation with: Bert Ramos (Director CHRISTUS Spohn Family Health Center-Westside). 2006 May 01.

Rush CH. Conversation with: Kimberly Camp. 2005 October.

Russo RM, Harvey B, Kukafka R et al. Use of community health aides in a school health program. J Sch Health 1982; 52 (4):425-7.

S. 3975, 109th Cong., 2d Sess. (2006)

Salber EJ, Beery WL, Jackson EJ. The role of the health facilitator in community health education. Journal of Community Health 1976; 2 (1):5-20.

San Francisco Department of Public Health: Employment Opportunities [Internet]. San Francisco (CA): Department of Public Health, City and County of San Francisco; 2005-2006 [updated 2006 Oct 19/cited 2006 Oct 20]. Available from http://www.dph.sf.ca.us/emplymnt/genljobs.htm#500Class.

Satterfield D, Burd C, Valdez L et al. The "In-Between People": participation of community health representatives in diabetes prevention and care in American Indian and Alaska Native communities. Health Promot Pract 2002; 3 (2):166-75.

Satterfield DW, Volansky M, Caspersen CJ et al. Community-based lifestyle interventions to prevent type 2 diabetes. Diabetes Care 2003; 26 (9):2643-53.

Sayad J. An interview with Lupe Ramos, promotora in Fabens, El Paso County, Texas, USA. Education for Health: Change in Learning & Practice 2003; 16 (1):87.

Schachter KA, Cohen SJ. From research to practice: challenges in implementing national diabetes guidelines with five community health centers on the border. Prev Chronic Dis [Serial Online]; 2005 Jan [21 Mar 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/jan/04_0079.htm.

Schafer E, Vogel MK, Viegas S et al. Volunteer peer counselors increase breastfeeding duration among rural low-income women. Birth 1998; 25 (2):101-6.

Schlaff AL. Boston's codman square community partnership for health promotion. Public Health Reports 1991; 106 (2):186-91.

Schroeder CA, Bell JF. Hard time: nursing and incarcerated populations: labor support for incarcerated pregnant women: the Doula Project... 34th Annual Communicating Nursing Research Conference/15th Annual WIN Assembly, "Health Care Challenges Beyond 2001: Mapping the Journey for Research and Practice," held April 19-21, 2001 in Seattle, Washington. Commun Nurs Res 2001:34 127.

Schuler ME, Nair P, Black MM et al. Mother-infant interaction: effects of a home intervention and ongoing maternal drug use. Journal of Clinical Child Psychology 2000; 29 (3):424-31.

Schulte A, Musolf J, Meurer JR et al. Pediatric asthma case management: a review of evidence and an experimental study design. J Pediatr Nurs 2004; 19 (4):304-10.

Schulz AJ, Israel BA, Becker AB et al. "It's a 24-hour thing ... a living-for-each-other concept": identity, networks, and community in an urban village health worker project. Health Education and Behavior 1997; 24 (4):465-80.

Schulz AJ, Israel VA, Parker EA et al. The East Side Village Health Worker Partnership: integrating research with action to reduce health disparities. Public Health Reports 2001; 116 (6):548-57.

Schwartz CE, Sendor M. Helping others helps oneself: response shift effects in peer support. Soc Sci Med 1999; 48 (11):1563-75.

Scwarz DF, Grisso JA, Miles C et al. Injury-prevention program in an urban African American community. Am J of Public Health 1993; 83 (5):675-80.

Sennott-Miller L, May KM, Miller JLL. Demographic and health status indicators to guide health promotion for Hispanic and Anglo rural elderly. Patient Education and Counseling 1998; 33 (1):13-23.

Service C, Sabler EJ, editors. Community health education: the lay health advisor approach. Durham (NC): Duke University Health Care Systems; 1979.

Services [Internet]. Springfield (MA): North End Outreach Network; 1996 [updated 2006 Nov 08]. Available from http://www.neonprogram.org/html/services.html.

Sharp PC, Dignan MB, Blinson k et al. Working with lay health educators in a rural cancer-prevention program. American Journal of Health Behavior 1998; 22 (1):18-27.

Sharpe PA, Greaney ML, Lee PR et al. Assets-oriented community assessment. Public Health Reports 2000; 115 (2-3):205.

Shaw E, Kaczorowski J. The effect of a peer counseling program on breastfeeding initiation and longevity in a low-income rural population. J Hum Lact 1999; 15 (1):19-25.

Sheppard VB, Zambrana RE, O'Malley AS. Providing health care to low-income women: a matter of trust. Family Practice 2004; 21 (5):484-91.

Sherer JL. Bringing providers to the people. Alaska and a Florida county blaze new trails in non-physician care delivery. Hospitals and Health Networks 1994; 68 (3):56-60.

Sherer JL. Neighbor to neighbor. Community health workers educate their own. Hospitals and Health Networks 1994; 68 (20):52-6.

Siegel B, Berliner H, Adams A et al. Addressing health disparities in community settings: an analysis of best practices in community-based approaches to ending disparities in health care. Program In Health Services Management and Policy, Robert J. Milano Graduate School of Management and Urban Policy, New School University & The Robert Wood Johnson Foundation, December 20, 2001; Revised and Updated October, 2003.

Siegel E, Bauman EK, Schaefer ES et al. Hospital and home support during infancy: impact on maternal attachment, child abuse, and neglect, and health care utilization. Pediatrics 1980; 66 (2):183-90.

Silver E, Ireys HT, Bauman LJ et al. Psychological outcome of a support intervention in mothers of children with ongoing health condition. Journal of Community Psychology 1997; 25 (3):249-64.

Simon T. Complex issues for sexual assault peer education programs. Journal of American College Health 1993; 41 (6):289-91.

Simoni JM, Weinberg BA, Nero DK. Training community members to conduct survey interviews: notes from a study of seropositive women. AIDS Educ Prev 1999; 11 (1):87-8.

SkillWorks, The Boston Community Health Worker Initiative, Full Partnership - August 17, 2006 Minutes [Internet]. Boston (MA): Boston Community Health Worker Initiative (BCHWI); 2006 [updated 2006 Apr 17/cited 2006 Nov 02]. Available from http://www.bostonabcd.org/programs/documents/FullPartnersminutes08-17-06.doc.

Skinner C, Sykes RK, Monsees BS et al. Learn, share and live: breast cancer education for older urban minority women. Health Education and Behavior 1998; 25 (1):60-78.

Slack MK, Cummings DM, Borrego ME et al. Strategies used by interdisciplinary rural health training programs to assure community responsiveness and recruit practitioners. Journal of Interprofessional Care 2002; 16 (2):129-38.

Slater EL, Hogue VW, Curry J, C.E. A pilot study evaluating trained lay volunteer's ability to identify potential drug interactions in hypertensive patients. Issues in Interdisciplinary Care 2001; 3 (3):185-92.

Slater JS, Ha CN, Malone ME et al. A randomized community trial to increase mammography utilization among low-income women living in public housing. Preventive Medicine 1998; 27 (6):862-70.

Slaughter-Defoe DT. Home visiting with families in poverty: introducing the concept of culture Future of Children 1993; 3 (3):172-83.

Sloane BC, Zimmer CG. The power of peer health education. Journal of American College Health 1993; 41 (6):241-5.

Smedley BD, Stith AY, Nelson AR, editors. Unequal treatment: confronting racial and ethnic disparities in health care. Washington (DC): Institute of Medicine, National Academies Press; 2003.

Smith A, Christopher S, McCormick AKH. Development and implementation of a culturally sensitive cervical health survey: a community-based participatory approach. Women Health 2004; 40 (2):67-86.

Smith MJ. CERTifying Safety. The Mission 2004; 30 (4).

Soliman HH, Lingle SE, Raymond A. Perceptions of indigenous workers following participation in a disaster relief project. Community Ment Health J 1998; 34 (6):557-68.

Southwest Border Health Research Center. An overview: health care coverage in Arizona. Tucson (AZ): The University of Arizona College of Public Health for The Arizona Health Care Cost Containment System, January 2002.

Sox CH, Dietrich AJ, Goldman DC et al. Improved access to women's health services for Alaska natives through community health aide training. Journal of Community Health 1999; 24 (4):313-23.

St James PS, Shapiro E, Waisbren SE. The Resource Mothers Program for maternal phenylketonuria. American Journal of Public Health 1999; 89 (5):762-4.

Standard Occupational Classification (SOC) System [Internet]. Washington (DC): Bureau of Labor Statistics, U.S. Department of Labor; 2000 [updated 2006 Jun 13/cited 2005 Dec 14]. Available from http://www.bls.gov/soc/.

Stark R. Lay workers in primary health care: victims in the process of social transformation. Soc Sci Med 1985; 20 (3):269-75.

Staten LK, Gregory-Mercado KY, Ranger-Moore J et al. Provider counseling, health education, and community health workers: the Arizona WISEWOMAN project. J Womens Health (Larchmt) 2004; 13 (5):547-56.

Staten LK, Scheu LL, Bronson D et al. *Pasos Adelante*: the effectiveness of a community-based chronic disease prevention program. Prev Chronic Dis [Serial Online]; 2005 Jan [21 Mar 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/jan/04_0075.htm.

Staten LK, Taren DL, Howell WH et al. Validation of the Arizona activity frequency questionnaire using doubly labeled water. Medicine and Science in Sports and Exercise 2001; 33 (11):1959-67.

Staten LK, Teufel-Shone NI, Steinfelt VE et al. The School Health Index as an impetus for change. Prev Chronic Dis [serial online] 2005; 2005 Jan [21 Mar 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/jan/04_0076.htm.

Steinfelt VE. The Border Health Strategic Initiative from a Community Perspective. Prev Chronic Dis [Serial Online]; 2005 Jan [21 Mar 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/jan/04_0077.htm.

Steuart G. Health, Behavior, and Planned Change: An Approach to the Professional Preparation of the Health Education Specialist. Health Education Quarterly 1993; Supplement 1:S49-S69.

Steuart GW. Planning and evaluation in health education. Health Education Quarterly 1993; Supplement 1:S71-S84.

Stewart JC, Hood WR. Using workers from "hard-core" areas to increase immunization levels. Public Health Rep 1970; 85 (2):177-85.

Stillman FA, Bone LR, Rand C et al. Heart, body, and soul: a church-based smoking-cessation program for urban African Americans. Preventive Medicine 1993; 22 (3):335-49.

Stockdale SE, Keeler E, Duan N et al. Costs and cost-effectiveness of a church-based intervention to promote mammography screening. Health Services Research 2000; 35 (5 Pt 1):1037-57.

Stoskopf CH, Samuels ME, Ciesla JR. Findings from a demonstration outreach project at a community health center. J Health Care Poor Underserved 1993; 4 (1):51-64.

Stout JW, White LC, Rogers LT et al. The Asthma Outreach Project: a promising approach to comprehensive asthma management. J of Asthma 1998; 35 (1):119-27.

Stremler J, Lovera D. Insight from a breastfeeding peer support pilot program for husbands and fathers of Texas WIC participants. Journal of Human Lactation 2004; 20 (4):417-22.

Stricklin ML. Community-based care: back to the future! Disabil Rehabil 1997; 19 (4):158-62.

Struthers R, Hodge FS, De Cora L et al. The experience of native peer facilitators in the campaign against type 2 diabetes. J Rural Health 2003; 19 (2):174-80.

Suarez L, Roche RA, Pulley LV et al. Why a peer intervention program for Mexican-American women failed to modify the secular trend in cancer screening. Am J Prev Med 1997; 13 (6):411-7.

Sullivan CM, Baybee DI. Reducing violence using community-based advocacy for women with abusive partners. J Consult Clin Psychol 1999; 67 (1):43-53.

Sullivan TA, Sharma M, Stacy R. Effects of a brief training program for lay health volunteers to facilitate smoking cessation among African Americans. J Alcohol Drug Educ 2002; 47 (2):4-17.

Summers LC, Williams J, Borges W et al. School-based health center viability: application of the COPC model... community-oriented primary care. Issues Compr Pediatr Nurs 2003; 26 (4):231-51.

Sung JF, Blumenthal DS, Coates RJ et al. Effect of a cancer screening intervention conducted by lay health workers among inner-city women. American Journal of Preventive Medicine 1997; 13 (1):51-7.

Sung JF, Coates RJ, Wiliams JE et al. Cancer screening intervention among Black women in inner-city Atlanta: design of a study. Public Health Reports 1992; 107 (381-388).

Sustainability conference [Internet]. San Antonio (TX): Family Health Foundation; 2001 [updated 2006 Nov 01]. Available from http://www.famhealth.org/new_page_3.htm.

Swider SM. Outcome effectiveness of community health workers: an integrative literature review. Public Health Nursing 2002; 19 (1):11-20.

Swider SM, McElmurry BJ. Women's health perspective in primary health care: a nursing and community health worker demonstration project in urban America. Family and Community Health 1990; 13 (3):1-17.

Takaro TK, Krieger JW, Song L. Effect of environmental interventions to reduce exposure to asthma triggers in homes of low-income children in Seattle. Journal of Exposure Analysis and Environmental Epidemiology 2004; 14 Suppl 1:S133-43.

Taylor T, Serrano E, Anderson J. Management issues related to effectively implementing a nutrition education program using peer educators. Journal of Nutrition Education 2001; 33 (5):284.

Teaster PB, Schmidt WC, Abramson H et al. Staff service and volunteer staff service models for public guardianship and "alternatives" services: who is served and with what outcomes?... including commentary by Polivka L. J Ethics Law Aging 1999; 5 (2):131-51, 53-5.

Ten Health Plans Recognized by NCQA for Bridging Cultural and Linguistic Divides in Health Care [Internet]. Washington (DC): National Committee for Quality Assurance; 2006 [updated 2006 Sep 13/cited 2006 Sep 29]. Available from http://www.ncqa.org/Communications/News/CLAS_06.htm.

Tessaro I, Campbell M, O'Meara C et al. State health department and university evaluation of North Carolina's Maternal Outreach Worker Program. American Journal of Preventive Medicine 1997; 13 (6 Suppl):38-44.

Tessaro IA, Taylor S, Belton L et al. Adapting a natural (lay) helpers model of change for worksite health promotion for women. Health Educ Res 2000; 15 (5):603-14.

Teufel-Shone NI, Drummond R, Rawiel U. Developing and adapting a family-based diabetes program at the U.S.-Mexico Border. Prev Chronic Dis [Serial Online]; 2005 Jan [21 Mar 2005]. Available from: URL: http://www.cdc.gov/pcd/issues/2005/jan/04_0083.htm.

Thom DH, Campbell B. Patient-physician trust: an exploratory study. J Fam Pract 1997; 44 (2):169-76.

Thom DH, Ribisl KM, Stewart AL et al. Further validation and reliability testing of the trust in physician scale. The Stanford trust study physicians. Med Care 1999; 37 (5):510-7.

Thomas J, Earp J, Eng E. Evaluation and lessons learned from a lay health advisor program to prevent sexually transmitted diseases. International Journal of STD and AIDS 2000; 11:812-8.

Thomas JC, Eng E, Earp JA et al. Trust and collaboration in the prevention of sexually transmitted diseases. Public Health Reports 2001; 116 (6):540-7.

Thompson HE, Berris B. A government supported family planning program: its development and evaluation. JAMA 1974; 230 (5):709-12.

Tillett T. Promoting health in Texas colonias. Environ Health Perspect 2005; 113 (7):A454-5.

Tingen MS, Weinrich SP, Heydt DD et al. Perceived benefits: a predictor of participation in prostate cancer screening. Cancer Nurs 1998; 21 (5):349-57.

Toobert DJ, Strycker LA, Glasgow RE et al. Enhancing support for health behavior change among women at risk for heart disease: the Mediterranean Lifestyle Trial. Health Educ Res 2002; 17 (5):574-85.

Torrey EF, Smith D, Wise H. The family health workers revisited: a five-year follow-up. American Journal of Public Health 1973; 63:71-4.

Tu S-P, Taylor V, Yasui Y et al. Promoting culturally appropriate colorectal cancer screening through a health educator. Cancer 2006; 107 (5):959-66.

Tuckman H, Chang C. The healthcare volunteer. Hospital Topics 1994; 72 (2).

Tudiver F, Myers T, Kurz RG et al. The Talking Sex Project. Evaluation and The Health Professional 1992; 15 (4):26-42.

Tuttle J, Bidwell-Cerone S, Campbell-Heider N et al. Teen Club: a nursing intervention for reducing risk-taking behavior and improving well-being in female African American adolescents. J Pediatr Health Care 2000; 14 (3):103-8.

U. S. Department of Health and Human Services. Su Corazon. Su Vida. Bethesda (MD): National Institutes of Health, National Heart, Lung, and Blood Institute, NIH Publication No. 00-4087, 2000.

UNAIDS. Comfort and hope. Six case studies on mobilizing family and community care for people with HIV/AIDS. UNAIDS Best Practice Collection 1999.

United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Border Vision Fronteriza 2 New Mexico Model. El Paso (TX): United States-Mexico Border Health Commission, 2004.

United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Community Access Program of Arizona (CAPAZ) and *Entre Amigas* (Between Friends) Model Yuma County, Arizona. El Paso (TX): United States-Mexico Border Health Commission, 2004.

United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Luchando Contra el SIDA Model, Somerton, Arizona. El Paso (TX): United States-Mexico Border Health Commission, 2004.

United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Mariposa Community Health Center of Excellence in Women's Health Model Santa Cruz County, Arizona. El Paso (TX): United States-Mexico Border Health Commission, 2004.

United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. Puente de Salud Model El Paso, Texas. El Paso (TX): United States-Mexico Border Health Commission, 2004.

United States-Mexico Community Health Workers Border Models of Excellence, Transfer/Replication Strategy. REACH 2010 Promotora Community Coalition Model, Rio Grande Valley in Texas. El Paso (TX): United States-Mexico Border Health Commission, 2004.

Vargo S, Agronick G, O'Donnell L et al. Using peer recruitment and OraSure to increase HIV testing. American Journal of Public Health 2004; 94 (1):29-31.

Vetter MJ, Bristow L, Ahrens J. A model for home care clinician and home health aide collaboration: diabetes care by nurse case managers and community health workers. Home Healthc Nurse 2004; 22 (9):645-8.

Virginia Center for Health Outreach. Community health advisor/worker program survey. Harrisonburg (VA): James Madison University, June 2002.

Virginia Center for Health Outreach. Final report on the status, impact, and utilization of community health workers. Richmond (VA): James Madison University, 2006.

Volmink J, Garner P. Directly observed therapy for treating tuberculosis Cochrane Database of Systematic Reviews, 2003.

Von Korff M, Moore JE, Lorig K et al. A randomized trial of a lay person-led self-management group intervention for back pain patients in primary care. Spine 1998; 23 (23):2608-15.

Voorhees CC, Stillman FA, Swank RT et al. Heart, body, and soul: impact of church-based smoking cessation interventions on readiness to quit. Preventive Medicine 1996; 25 (3):277-85.

Walker MH. Building bridges: community health outreach worker programs. New York (NY): United Hospital Fund of New York, 1994.

Wallerstein N. A participatory evaluation model for healthier communities: developing indicators for New Mexico. Public Health Reports 2000; 115:199-204.

Wan TTH, Weissert WG, Livieratos BB. Geriatric day care and homemaker services: an experimental study. Journal of Gerontology 1980; 35 (2):256-74.

Wang VL, Ephross PH, Green LW. The point of diminishing returns in nutrition education through home visits by aides: an evaluation of EFNEP. Health Education Monographs 1975; 3 (1):70-88.

Warnecke RB, Graham S, Mosher W et al. Contact with health guides and use of health services among blacks in Buffalo. Public Health Reports 1975; 90 (3):213-22.

Warrick LH, Wood AH, Meister JS et al. Evaluation of a peer health worker prenatal outreach and education program for Hispanic farmworker families. Journal of Community Health 1992; 17 (1):13-26.

Wasik BH. Staffing issues for home visiting programs. Future of Children 1993; 3 (3):140-15.

Watkins EL, Harlan C, Eng E et al. Assessing the effectiveness of lay health advisors with migrant farmworkers. Family and Community Health 1994; 16 (4):72-87.

Watkins EL, Larson K, Harlan C et al. Model program for providing health services for migrant farmworker mothers and children. Public Health Reports 1990; 105 (6):567-75.

Watson MR, Horowitz AM, Garcia I et al. A community participatory oral health promotion program in an inner-city Latino community. J Public Health Dent 2001; 61 (1):34-41.

Wayland C. Acceptable and appropriate: program priorities vs. felt needs in a CHW program. Critical Public Health 2002; 12 (4):335-50.

Weber BE, Reilly BM. Enhancing mammography use in inner city. A randomized trial of intensive case management. Archives Internal Med 1997; 157 (20):2345-9.

Wechsler H, Wernick S. Social marketing campaign to promote low-fat milk consumption in an inner-city Latino community. Public Health Reports 1992; 107 (2):202-7.

Weinberger M, Tierney WM, Booher P et al. Can the provision on information to patients with osteoarthritis improve functional status? A randomized controlled trial. Arthritis and Rheumatism 1989; 32 (12):1577-83.

Weinberger M, Tierney WM, Booher P et al. The impact of increased contact on psychosocial outcomes in patients with osteoarthritis: a randomized, controlled trial. Journal of Rheumatology 1991; 18 (6):849-54.

Weinrich SP, Boyd MD, Weinrich M et al. Increasing prostate cancer screening in African American men with peer-educator and client-navigator interventions. Journal of Cancer Education 1998; 13 (4):213-9.

Weinrich SP, Weinrich MC, Stromborg MF et al. Using elderly educators to increase colorectal cancer screening. Gerontologist 1993; 33 (4):491-6.

Weiss HB. Home visits: necessary but not sufficient. Future of Children 1993; 3 (3113-128).

Welcome [Internet]. Tucson (AZ): Community Health Worker National Education Collaborative (CHW-NEC); 2005 [updated 2006/cited 2006 Nov 01]. Available from http://www.chw-nec.org/bg.cfm.

Welcome to the COBRA HIV/AIDS Case Management Website! Who are We? [Internet]. Albany (NY): AIDS Institute, New York State Department of Health; 2002 [updated 2006 Sep 26]. Available from http://www.cobracm.org/whoweare/.

Wells BL, DePue JD, Buehler CJ et al. Characteristics of volunteers who deliver health education and promotion: a comparison with organization members and program participants. Health Education Quarterly 1990; 17 (1):23-35.

Wertz R, Weiss DG, Azten JL et al. Comparison of clinic, home, and deferred language treatment for aphasia. Archives of Neurology 1986; 43:653-8.

What is a Navigator [Internet]. Houston (TX): Gateway to Care; 2000 [updated 2006 Oct 19/cited 2006 Sep 29]. Available from http://www.gatewaytocare.org/what_is_a_navigator.htm.

Whitley EM, Everhart RM, Wright RA. Measuring return on investment of outreach by community health workers. J Health Care Poor Underserved 2006; 17 (1 Suppl):6-15.

Whitman S, Lacey L, Ansell D et al. Intervention to increase breast and cervical cancer to screening in low-income African American women. Family and Community health 1994; 17 (1):56-63.

Whitten CF, Thomas JF, Nishiura EN. Sickle cell trait counseling: evaluation of counselors and counselees. American Journal of Human Genetics 1981; 33 (5):802-16.

Wilkinson DY. Indigenous community health workers in the 1960's and beyond. In: RL Braithwaite; SE Taylor, editors. Health Issues in the Black Community. San Francisco, CA: Jossey-Bass, Inc.; 1992; p. 255-66.

Williams DM. Legislative actions and health care issues in the colonias. Texas Journal of Rural Health 1997:44.

Williams DM. La Promotora. Linking disenfranchised residents along the border to the U.S. health care system. Health Affairs 2001; 20 (3):212-8.

Williams MP. Increasing participation in health promotion among older African-Americans. American Journal of Health Behavior 1996; 20 (6).

Willmott D, van Olphen J. Challenging the health impacts of incarceration: the role for community health workers. California Journal of Health Promotion 2005; 3 (2):38-48.

Wingert WA, Grubbs J, Lenoski EF et al. Effectiveness and efficiency of indigenous health aides in a pediatric outpatient department Am J of Public Health 1975; 65:849-57.

Wingert WA, Larson W, Friedman DB. Indigenous health aides as counselors to parents about nutrition. Public Health Reports 1969; 84:328-32.

Wise HB, Torrey EF, McDade A et al. The family health worker. American Journal of Public Health, Nations Health 1968; 58 (10):1828-38.

Withorn A. Serving the people. Social services and social change. New York (NY): Columbia University Press 1984.

Witmer A, Seifer SD, Finocchio L et al. Community health workers: integral members of the health care work force. American Journal of Public Health 1995; 85 (8 part 1):1055-8.

Wolf JH. Professionalizing volunteer work in a Black neighborhood. Social Service Review 1985; 59 (3):423-34.

Wolf RS, Pillemer K. What's new in elder abuse programming? Four bright ideas. Gerontologist 1994; 34 (1):126-9.

Wolff N, Helminiak TW, Morse GA et al. Cost-effectiveness evaluation of three approaches to case management for homeless mentally ill clients. American Journal of Psychiatry 1997; 154 (3):341-8.

Woodruff SI, Talavera GA, Elder JP. Evaluation of a culturally appropriate smoking cessation intervention for Latinos. Tobacco Control 2002; 11 (4):361-7.

Woods ER, Samples CL, Melchiono MW et al. Boston HAPPENS Program: a model of health care for HIV-positive, homeless, and at-risk youth. Human immunodeficiency virus (HIV) Adolescent Provider and Peer Education Network for Services. J Adolesc Health 1998; 23 (2 Suppl):37-48.

Youdelman M, Perkins J. Providing language interpretation services in health care settings: examples from the field. New York (NY): The Commonwealth Fund, May 2002.

Young RL, de Moor C, Wildey MB et al. Correlates of health facilitator performance in a tobacco use prevention program: implications for recruitment. J Sch Health 1990; 60 (9):463-7.

Zhu K, Hunter S, Bernard LJ et al. An intervention study on screening for breast cancer among single African-American women aged 65 and older. Prev Med 2002; 34 (5):536-45.

Zwarenstein M, Schoeman JH, Vundule C et al. A randomized controlled trial of lay health workers as direct observers for treatment of tuberculosis. International Journal of Tuberculosis and Lung Disease 2000; 4 (6):550-4.


DEPARTMENT OF HEALTH & HUMAN SERVICES, USA