

Characterizing Community Health Workers on Research Teams: Results From the Centers for Population Health and Health Disparities


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Objectives. To quantify the characteristics of community health workers (CHWs) involved in community intervention research and, in particular, to characterize their job titles, roles, and responsibilities; recruitment and compensation; and training and supervision.

Methods. We developed and administered a structured questionnaire consisting of 25 closed- and open-ended questions to staff on National Institutes of Health–funded Centers for Population Health and Health Disparities projects between March and April 2014. We report frequency distributions for CHW roles, sought-after skills, education requirements, benefits and incentives offered, and supervision and training activities.

Results. A total of 54 individuals worked as CHWs across the 18 research projects and held a diverse range of job titles. The CHWs commonly collaborated on research project implementation, provided education and support to study participants, and collected data. Training was offered across projects to bolster CHW capacity to assist in intervention and research activities.

Conclusions. Our experience suggests national benefit in supporting greater efforts to recruit, retain, and support the work of CHWs in community-engagement research. (*Am J Public Health.* 2016;106:664–670. doi:10.2105/AJPH.2015.302980)

 See also Landers and Levinson, p. 591.

Community health workers (CHWs), variously known as lay health workers, lay health advisors, health navigators, community educators, *promotores*, and other titles, are increasingly involved in intervention research studies and health care teams and have garnered growing national attention in recent years.^{1–3} The US Department of Health and Human Services defines CHWs as

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.^{4(piii)}

In 2009, the US Department of Labor recognized the important role CHWs could play as members of the health care team and recommended a single labor category for these professionals.⁵

As diverse as their titles, the varying roles of CHWs and efficacy of CHW-led interventions in public health promotion and disease prevention are the focus of much of the extant literature on CHWs.^{6–11} Although a general responsibility of CHWs has been described in the literature as working with

communities to improve health outcomes, the depth and breadth of CHW roles in health promotion and disease prevention work appears to be as diverse as the projects to which they contribute.^{12,13} Findings from the National Community Health Advisor Study elucidated 7 core competencies of members of this profession: cultural mediation, informal counseling and support, providing culturally appropriate health education, advocating individual and community needs, ensuring that people receive the health services they need, building individual and community capacity, and providing direct services.¹² Other studies have added to these roles, describing the function of CHWs as monitoring health status, promoting screening, facilitating treatment adherence and community participation in the health system, and encouraging self-management.^{11,14,15}

Several reports document that CHWs are effective in increasing community engagement, connecting host communities to health services, and improving health outcomes, particularly among vulnerable populations.^{6–8} Although many research articles describe the efficacy of individual CHW interventions, little is known about the overall characteristics of CHWs who work on research teams,

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where they may function as research assistants, educators, or interventionists.^{11,14,16–18} The contributions of CHWs as members of research teams that address health disparities are seen as critical to reaching and engaging individuals in underserved populations. Because they are members of the community being served, CHWs are well-situated to provide insights to researchers about realities faced by their communities.^{9,18} Integrating CHWs into research teams also may increase community involvement in research and reduce health disparities in underserved populations.^{1,8,19} Furthermore, because CHWs often have similar demographic and social characteristics (e.g., ethnicity, socioeconomic status) to the populations they serve, including CHWs in research projects may be an effective strategy for addressing fear, mistrust, and historically low participation of the underserved in public health and clinical research.^{19–22}

Studies describing CHW involvement in research have qualitatively examined the role of CHWs in specific research studies^{3,17} and have contributed much to the understanding of CHW participation in individual research projects. Few studies, however, have systematically collected data from a national sample of research projects that employ CHWs; thus, little information exists about CHW roles, responsibilities, recruitment, hiring, and training in diverse research projects. Such activities may include recruiting participants, obtaining informed consent, collecting data for intervention activities, and carrying out behavioral interventions. Furthermore, there is limited evidence to provide a framework for academic and research partners aiming to meet community needs by integrating CHWs into their teams. Evidence to guide the operational integration of CHWs into research teams would be useful for researchers who propose to work with CHWs. The current study contributes to the literature examining the characteristics, skills, and effective integration of CHWs into research teams.

Since 2010, 10 centers throughout the United States have been involved in the National Institutes of Health–funded Centers for Population Health and Health Disparities (CPHHD) initiative.^{23,24} Each center leads multiple research projects focused on reducing health disparities in cancer and cardiovascular disease among diverse

underserved populations across the United States. Among the requirements for funding was that each CPHHD conduct at least 1 community-engaged intervention project. Several of these projects used a community-based participatory research approach, in which communities are expected to be involved in every aspect of the research, from study design to results dissemination.²⁵ Each project consisted of a unique, often multilevel intervention (e.g., home- or community-based lifestyle intervention, clinic-based educational intervention) in which CHWs played a role in engaging members of an underserved population (e.g., urban African Americans, urban Puerto Ricans, rural Mexicans, rural Appalachians) in the intervention. Across all projects, community engagement was operationalized by including CHWs, establishing community advisory boards, and partnering with community-based organizations (CBOs) to conduct research. The components of CPHHD community-engaged research projects presented a unique opportunity to examine the involvement of CHWs in an effort to add to the understanding of how CHWs engage in and contribute to research.

METHODS

Investigators and staff representatives from 9 of the 10 CPHHDs convened to form the CHW Working Group. The group's overarching goal was to examine the roles and contributions of CHWs to CPHHD research projects. After reviewing definitions of CHWs from multiple sources, the CHW Working Group determined that no existing definition encompassed the diversity of CHWs on CPHHD projects. Therefore, during study conceptualization, the working group established a working definition of CHWs for the current study, as “lay individuals from the community who function essentially as research assistants, educators, and/or interventionists on CPHHD research projects.”

Working group members engaged CPHHD center directors, principal investigators, and project staff to self-select which of their projects included individuals who met this loose definition. Subsequently, the working group ascertained that 18 projects in the 10 centers involved

CHWs. To elucidate the roles that CHWs fulfill, as well as information about recruiting, hiring, supervisory strategies, and training provided to CHWs, the CHW Working Group proposed to administer a survey to the staff person(s) at each CPHHD who was most knowledgeable about the role of CHWs on each project. Subsequently, each principal investigator was asked to provide the name of the projects and the person(s) who met this criterion. Once eligible projects and corresponding representatives were identified, a recruitment letter containing a link to a Web-based questionnaire was e-mailed to each identified project representative.

The CHW Working Group developed a structured questionnaire consisting of 25 closed- and open-ended questions that aimed to (1) characterize the job titles, roles, and responsibilities of CHWs; (2) identify approaches to recruiting, hiring, and compensating CHWs; and (3) describe training and supervision provided to CHWs involved in intervention research. We collected and managed study data by using REDCap electronic data capture tools, a secure, Web-based application designed to support data capture for research studies.²⁶

We exported data from the Web-based questionnaire into SPSS version 21.0 (IBM, Somers, NY) for analysis. We used descriptive statistics to obtain frequency distributions for CHW roles, sought-after skills, education requirements, benefits and incentives offered, supervision, and training activities.

RESULTS

Between March and April 2014, 16 representatives from all 18 projects across the 10 CPHHDs that involved CHWs in their research studies completed the Web-based questionnaire. Respondents most commonly self-identified as a CPHHD project manager or coordinator (70.6%) or CBO manager or coordinator (11.8%).

Community Health Workers and Projects

A total of 54 individuals worked as CHWs across the 18 CPHHD research projects. Of these, 11 (20%) CHWs worked on more than

1 CPHHD research project at their center. They held a variety of functional job titles, including terms that reflected the type of work they performed (Table 1). One project employed 15 (27.8%) CHWs with the title youth advocate, and 2 projects employed a total of 15 (27.8%) CHWs who held the title research assistant. Five (27.8%) projects employed a total of 12 (22.2%) CHWs with the title community health worker, and 4 (22.2%) projects employed a total of 4 (7.4%) CHWs with the title community health educator. Less commonly used functional titles across the CPHHD projects were health counselor, community health advocate, community supervisor, and phone coach.

The CPHHD projects used human resource (HR) departments housed both at the research institution and at CBOs to hire and compensate CHWs. All HR departments assigned an even greater number of miscellaneous titles to the role of CHW. Across the 18 projects, 14 distinct titles were assigned, including *promotor/promotora*, community health worker, health care research assistant 1, patient navigator, project

coordinator, research project interviewer, and social research assistant.

Community Health Worker Selection Criteria

The educational requirements for CHW positions in these projects varied. Only 4 projects (22.2%) had no minimum educational requirement for the CHWs; some projects required that CHW applicants have a high-school education (27.8%), and half required some college or a bachelor's degree (50%).

Respondents were asked to identify the top-5 sought-after skills and attributes of CHW applicants (Table 2). Among the 18 projects, 15 (83.3%) reported that knowledge of the host community and communication skills were the most highly sought-after skills and attributes, followed by personality attributes (72.2%), being bilingual or bicultural (44.4%), and having experience with administrative tasks such as report writing (44.4%; Table 2). The CHW applicants were less frequently required to possess health literacy, group facilitation or conflict resolution skills, or knowledge of current technology.

The CHWs most commonly collaborated on intervention research project planning and implementation (e.g., developing intervention tools; 88.9%), provided education and support (83.3%), delivered interventions (77.8%), and recruited participants (77.8%; Table 2). Although they were involved in collecting both quantitative (66.7%) and qualitative data (44.4%) and contributed to manuscript writing (27.8%), no respondents reported that CHWs were involved in analyzing the collected data. The CHWs were similar to the populations they served in most respects, particularly in race/ethnicity, languages spoken, and gender (Table 2).

Recruiting, Hiring, and Compensating CHWs

Multiple mechanisms—both research institution-based and community-based—were used to recruit and hire CHWs across the 18 projects (Table 3). Recruitment was most often conducted in the community by community advisory boards, contacts at the CBO, or a CBO coordinator. Half of the projects relied on referrals to recruit new

TABLE 1—Community Health Worker Titles in Centers for Population Health and Health Disparities Research Projects: Seattle, WA, April 2014

CHW Functional Job Titles	CHWs With This Title (n = 54), ^a No. (%) ^b	Projects That Use This Title for CHWs (n = 18), No. (%) ^c	Corresponding CHW Human Resources Job Titles
Research assistant	15 (27.8)	2 (11.1)	Social research assistant
Youth advocate	15 (27.8)	1 (5.6)	Youth advocate
CHW	12 (22.2)	5 (27.8)	Health care research assistant 1 Outreach worker Project coordinator
<i>Promotor or promotora</i>	6 (11.1)	3 (16.7)	<i>Promotor or promotora</i> Research project interviewer
Patient navigator	6 (11.1)	2 (11.1)	Patient navigators
Community health educator	4 (7.4)	4 (22.2)	Community health educator CHW Health care research specialist Program assistant
Health counselor	4 (7.4)	1 (5.6)	Social research assistant
Community health advocate	3 (5.6)	1 (5.6)	Community health advocate
Phone coach	2 (3.7)	1 (5.6)	Social research assistant
Community supervisor	1 (1.9)	1 (5.6)	Community supervisor

Note. CHW = community health worker; CPHHD = Centers for Population Health and Health Disparities.

^aTotal number of CHWs on CPHHD research projects is 54.

^bTotals more than 100% as 11 CHWs held multiple titles on 1 or more CPHHD research projects.

^cTotals more than 100% as CPHHD research projects employed CHWs who held multiple titles on a single project.

TABLE 2—Education, Sought-After Skills, Roles, and Attributes of Community Health Workers on Centers for Population Health and Health Disparities Research Projects (n = 18): Seattle, WA, April 2014

Variable	No. ^a (%)
Minimum education requirement	
High-school diploma	5 (27.8)
Some college	4 (22.2)
Bachelor's degree	5 (27.8)
No education requirement	4 (22.2)
Sought-after skills and attributes	
Knowledge of host community (or clinic)	15 (83.3)
Communication skills	15 (83.3)
Personality attributes (e.g., friendly, caring, warm)	13 (72.2)
Bilingual or bicultural	8 (44.4)
Reporting and documentation	8 (44.4)
Multicultural competence	7 (38.9)
Common roles on research projects	
Collaborate on research project planning or implementation	16 (88.9)
Education and support	15 (83.3)
Deliver interventions	14 (77.8)
Recruit participants (e.g., creating flyers, radio advertisements)	14 (77.8)
Collect quantitative data (e.g., surveys)	12 (66.7)
Similarity to clients	
Ethnicity	17 (94.4)
Language	16 (88.9)
Gender	13 (72.2)

^aNo. represents the number of projects in the Centers for Population Health and Health Disparities Research Projects that involve community health workers.

CHWs, and about 22.2% of project representatives reported distributing and posting flyers around the community (e.g., schools, youth agencies, parent groups). Although communities were often engaged in CHW recruitment, hiring was more often carried out by research institution–affiliated entities, such as by the research project manager (61.1%) and the research institution's HR department (38.9%).

The CHWs were employed in a combination of hourly, full-time, and part-time positions, based on the needs of each project. Seven projects (38.9%) employed exclusively full-time CHWs; 2 (11.1%) employed exclusively part-time CHWs; 2 (11.1%) employed exclusively hourly CHWs; and 5 (27.8%) projects employed a combination of hourly, full-time, and part-time CHWs. The CHWs offered their time as volunteers on 1 project and were provided a stipend. The CHWs on all other projects were paid as employees by the research institution or CBO.

Paid CHWs were compensated with funds from the CPHHD grant at each institution. Paychecks were most commonly issued by the CBO (44.4%), followed by the research institution (38.9%). Three projects (16.7%) reported using a third party to issue paychecks (n = 2) or volunteer stipends (n = 1). The CHWs on those projects, regardless of their employment status, were offered various benefits, including health insurance (77.8%), paid time off as vacation (77.8%) or sick leave (77.8%), holidays (72.2%), life insurance (72.2%), and retirement benefits (61.1%). Half of the projects also offered tuition support to CHWs who wished to pursue further education.

Supervision, Retention, and Training

The CHWs received different levels of support and supervision as members of CPHHD research teams (Table 3).

Supervision was provided by CPHHD project managers or coordinators (66.7%) or CBO managers or coordinators (11.1%). The majority of supervisors held a college (33.3%) or graduate degree (50%). Supervisors implemented different strategies for increasing retention and support, including team meetings (100%), one-on-one meetings (83.3%), and annual or biannual performance reviews (77.8%). The CHWs on 8 of the 18 projects had left the CPHHD projects at the time this survey was administered. The main reasons for leaving included project termination (50.0%), job advancement at another organization (22.2%), pursuing further education (16.7%), or poor work performance (16.7%).

The CHWs involved in 15 (83.3%) CPHHD projects were offered ongoing training to build capacity for intervention activities, research activities, and basic skills necessary to fulfill their job duties (Table 4). The training topics delivered most commonly to CHWs were confidentiality (i.e., Health Insurance Portability and Accountability Act of 1996 [HIPAA]; 94.4%), research ethics (83.3%), quantitative data collection (i.e., administering surveys; 61.1%), and qualitative data collection (i.e., conducting in-depth interviews, focus groups; 55.6%).

DISCUSSION

In this study, we provided an overview of the variety of CHW titles, roles, and responsibilities, and the recruitment, hiring, and training practices used with CHWs involved in CPHHD health disparities research projects. The role of CHWs in health promotion and disease prevention is well established; our data contribute important information about how CHWs may be integrated into research teams.

The CHW applicants were most sought after when they possessed knowledge of the host community and were able to communicate effectively across both study populations and researchers. Not surprisingly, in the CPHHD projects under study, researchers relied heavily on community-affiliated entities to assist in recruiting CHW applicants. Our findings suggest that establishing and using community contacts to recruit candidates who are knowledgeable about and,

TABLE 3—Responsible Entities for Recruiting, Hiring, and Supervising Community Health Workers on Centers for Population Health and Health Disparities Research Projects (n = 18): Seattle, WA, April 2014

Variable	No. ^a (%) ^b
Recruiting mechanisms	
Research institution-affiliated	
Research project manager or coordinator	10 (55.6)
Research institution's human resources department	5 (27.8)
Researchers who are not members of host community or clinic	2 (11.1)
Community-affiliated	
Community advisory boards	5 (27.8)
Other individuals at the CBO	4 (22.2)
CBO manager or coordinator	4 (22.2)
CBO's human resources department	3 (16.7)
Current CHWs	3 (16.7)
Host community (or clinic)	2 (11.1)
Hiring mechanisms	
Research institution-affiliated	
Research project manager or coordinator	11 (61.1)
Research institution's human resources department	7 (38.9)
Researchers who are not members of host community or clinic	2 (11.1)
Community-affiliated	
Community advisory boards	1 (5.6)
Other individuals at the CBO	1 (5.6)
CBO manager or coordinator	3 (16.7)
CBO human resources department	3 (16.7)
Current CHWs	0 (0.0)
Host community (or clinic)	1 (5.6)
CHW supervisor titles	
Project manager or coordinator	12 (66.7)
Site manager or coordinator	2 (11.1)
Current CHWs	1 (5.6)
Supervisory activities	
One-on-one meetings with supervisor	15 (83.3)
Performance reviews	14 (77.8)
Team meetings	18 (100.0)
CHW supervisor educational attainment	
High-school diploma	1 (5.6)
College graduate (associate's or bachelor's degree)	6 (33.3)
Master's degree-level, nonclinician	9 (50.0)
Clinician	1 (5.6)
PhD-level researcher	1 (5.6)

Note. CBO = community-based organization; CHW = community health worker; CPHHD = Centers for Population Health and Health Disparities.

^aNo. represents the number of projects in the CPHHD that involve CHWs.

^bTotals more than 100% as CHWs are recruited and hired through multiple mechanisms for each project.

ideally, part of the community, may enable researchers to access a qualified CHW applicant pool. Current CHWs themselves are valuable resources for recruiting new

applicants because of their familiarity with the study population, job duties, and likely personal connections to eligible applicants. In addition, the formation of community

advisory boards may be a successful approach to bolstering CHW recruitment efforts. Ideal community advisory board members are local stakeholders who, like CHWs themselves, are often well-connected in the community. Furthermore, they are familiar with community health priorities as well as the multilevel factors that affect health in the community.²⁷ Such individuals therefore are well equipped to provide valuable insight into CHW recruiting strategies and hiring decisions.

The primary role of CHWs on CPHHD projects was to serve as a bridge between the community, health and social services, and researchers; however, they performed a multitude of job responsibilities across the 18 projects. The CHWs described in our study performed roles beyond those of the health promotion and disease prevention activities described in other studies.^{10–14} For example, in addition to providing education and support and mobilizing communities, they were engaged as staff on the research team and were expected to assist in recruiting study participants, designing and implementing research interventions, and collecting data. Although survey responses indicated that no CHWs analyzed data, anecdotal evidence suggested that CHWs on one project did in fact contribute to interpreting qualitative data. The CHWs in a single study held numerous roles and multiple job titles. Many CHWs worked across 2 or more studies at a CPHHD, indicating the need for them to be quick learners, flexible, and simultaneously responsive to the evolving needs of the research project, the health system, and the community. The myriad job responsibilities held by CHWs may help explain the lack of consistency in functional and HR job titles, an issue documented in previous studies.^{16,28,29}

Several CPHHD projects had no minimum education requirement for CHW applicants. Furthermore, previous experience as a CHW or experience with research design or data collection activities were not viewed as priority attributes in the recruiting and hiring process. Instead, CHWs were often hired because of a combination of their knowledge of the host community, warm personality, and communication skills—qualities that enable CHWs to serve as ideal candidates to liaise effectively between

TABLE 4—Training Activities Offered to Community Health Workers on Centers for Population Health and Health Disparities Research Projects (n = 18): Seattle, WA, March–April 2014

Training Activities	No. ^a (%) ^b
Research training	
Confidentiality (i.e., HIPAA)	17 (94.4)
Research ethics	15 (83.3)
Quantitative data collection (i.e., surveys)	11 (61.1)
Qualitative data collection (i.e., in-depth interviews, focus groups)	10 (55.6)
Skills training	
Communication	14 (77.8)
Data entry and management	13 (72.2)
Computer literacy	11 (61.1)

Note. CHW = community health worker; CPHHD = Centers for Population Health and Health Disparities; HIPAA = Health Insurance Portability and Accountability Act of 1996.

^aNo. represents the number of projects in the CPHHD that involve CHWs.

^bTotals more than 100% as CHWs are recruited and hired through multiple mechanisms for each project.

researchers and communities. All CHWs on CPHHD research projects were offered monetary compensation for their work, as well as various benefits including health insurance and paid time off.

To integrate CHWs on the research team, most projects reported training the CHWs in research skills and basic computer skills important to optimizing their CPHHD project role. Our findings indicate that to prepare CHWs to meet the diverse demands of their work as members of health research teams, it may be necessary to provide ongoing training to develop and hone research-specific topics and skills, such as confidentiality (i.e., HIPAA), research methodology (i.e., data collection and analysis), and communication. Such training, combined with ongoing refresher courses in basic technology and communication, has the potential to complement the personal characteristics and skills CHWs bring to CPHHD projects, thereby enhancing their contributions to the research. Our findings suggest that regular face-to-face supervisory activities may also serve as an informal, reciprocal type of training in which CHWs and supervisors are invited to engage in dialogue about their experiences, ideas, and problem-solving strategies.

Limitations

This study had several limitations. Although they provide examples of experiences

in a nationwide network, the CPHHD projects are not necessarily representative of all CHWs working on research projects in the United States; therefore, the results of this study may not be generalizable to the overall profession of CHWs in research. The CHW Working Group's working definition of CHW may not align completely with other definitions.

A Web-based questionnaire is an efficient way to obtain information from a geographically dispersed group of respondents. However, the closed-ended nature of most of the questions may have limited our ability to fully characterize the diverse roles of CHWs on research projects.

Finally, information was obtained from project representatives who are familiar with CHWs on research projects. Information about roles and responsibilities provided by CHWs themselves would provide a complementary and potentially more detailed depiction of the work that these individuals performed in the 18 CPHHD research projects that constituted our sampling frame.

Conclusions

Our findings highlight the diversity of titles and roles that CHWs fulfill, as well as the community involvement in recruiting and hiring CHWs. Furthermore, our data emphasize the use of supervision strategies that included regular face time and continuous

training to bolster adherence to the research protocol, communication, and basic computer skills. Standardizing the framework within which researchers and health teams recruit, hire, supervise, and train CHWs may facilitate the successful integration and acceptance of CHWs into health research teams. Future research is needed to examine the specific, project-tailored processes and training approaches that ensure improved health and social outcomes for communities targeted by projects that include the active participation of CHWs as staff.

The CPHHD investigators are leaders in NIH-funded community engagement research. Thus, their experiences may provide insight into the recruitment, hiring, and training of CHWs in community-engaged research projects. This information may help researchers conducting future studies involving CHWs as research staff. Characterizing CHWs and exploring the roles they fulfill in health disparities research on the basis of the experiences of a nationwide network such as the CPHHD program can provide useful information to other researchers, practitioners, and governmental agencies who seek to involve CHWs in similar capacities. Because CHWs served as critically important members of the CPHHD research projects, our experience suggests that there is national benefit in supporting greater efforts to recruit, retain, and support the work of CHWs in community engagement research. **AJPH**

CONTRIBUTORS

All authors contributed to the study conceptualization and design, questionnaire development, and interpretation of results. S. D. Hohl administered the survey, conducted data analysis, and cowrote the first draft of the article. B. Thompson oversaw data collection and analysis and cowrote the article. All authors contributed significant revisions to multiple drafts and approved the final version of the article before submission.

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HUMAN PARTICIPANT PROTECTION

This study was approved by the CPHHD steering committee and the institutional review board of the Fred Hutchinson Cancer Research Center, the lead organization of this collaborative research study (institutional review board file 8228).

REFERENCES

- Rosenthal EL, Wiggins N, Ingram M, Mayfield-Johnson S, De Zapien JG. Community health workers then and now: an overview of national studies aimed at defining the field. *J Ambul Care Manage*. 2011;34(3):247–259.
- Nelson A, Lewy R, Dovydaits T, Ricardo F, Kugel C. *Promotors* as researchers: expanding the *promotor* role in community-based research. *Health Promot Pract*. 2011;12(5):681–688.
- Peacock N, Issel LM, Townsell SJ, Chapple-McGruder T, Handler A. An innovative method to involve community health workers as partners in evaluation research. *Am J Public Health*. 2011;101(12):2275–2280.
- US Department of Health and Human Services. Community health worker national workforce study. 2007. Available at: <http://bhpr.hrsa.gov/healthworkforce/reports/chwstudy2007.pdf>. Accessed March 3, 2015.
- Office of Management and Budget. 2010 standard occupational classification (SOC)—OMB's final decisions; notice. *Fed Regist*. 2009;74(12):3920–3936.
- Andrews JO, Felton G, Wewers ME, Heath J. Use of community health workers in research with ethnic minority women. *J Nurs Scholarsh*. 2004;36(4):358–365.
- Rhodes SD, Foley KL, Zometa CS, Bloom FR. Lay health advisor interventions among Hispanics/Latinos: a qualitative systematic review. *Am J Prev Med*. 2007;33(5):418–427.
- Viswanathan M, Kraschewski JL, Nishikawa B, et al. Outcomes of community health worker interventions. *Evid Rep Technol Assess*. 2009;(181):1–144, A1–A2, B1–B14, passim.
- Pérez LM, Martínez J. Community health workers: social justice and policy advocates for community health and well-being. *Am J Public Health*. 2008;98(1):11–14.
- Balcázar H, Rosenthal EL, Brownstein JN, Rush CH, Matos S, Hernandez L. Community health workers can be a public health force for change in the United States: three actions for a new paradigm. *Am J Public Health*. 2011;101(12):2199–2203.
- Brownstein JN, Bone LR, Dennison CR, Hill MN, Kim MT, Levine DM. Community health workers as interventionists in the prevention and control of heart disease and stroke. *Am J Prev Med*. 2005;29(5, suppl 1):128–133.
- Rosenthal EL, Wiggins N, Brownstein J, et al. *The Final Report of the National Community Health Advisor Study: Weaving the Future*. Tucson, AZ: University of Arizona; 1998.
- Rosenthal EL, Macinko J. JACM special issue on community health workers and community health worker practice. *J Ambul Care Manage*. 2011;34(3):208–209.
- Bone LR, Edington K, Rosenberg J, et al. Building a navigation system to reduce cancer disparities among urban Black older adults. *Prog Community Health Partnersh*. 2013;7(2):209–218.
- Witmer A, Seifer SD, Finocchio L, Leslie J, O'Neil EH. Community health workers: integral members of the health care workforce. *Am J Public Health*. 1995;85(8 pt 1):1055–1058.
- Ingram M, Reinschmidt KM, Schachter KA, et al. Establishing a professional profile of community health workers: results from a national study of roles, activities and training. *J Community Health*. 2012;37(2):529–537.
- Terpstra J, Coleman KJ, Simon G, Nebeker C. The role of community health workers (CHWS) in health promotion research: ethical challenges and practical solutions. *Health Promot Pract*. 2011;12(1):86–93.
- Hill MN, Bone LR, Butz AM. Enhancing the role of community-health workers in research. *Image J Nurs Sch*. 1996;28(3):221–226.
- Swider SM. Outcome effectiveness of community health workers: an integrative literature review. *Public Health Nurs*. 2002;19(1):11–20.
- Ulrich A, Thompson B, Livaudais JC, Espinoza N, Cordova A, Coronado GD. Issues in biomedical research: what do Hispanics think? *Am J Health Behav*. 2013;37(1):80–85.
- Schmotzer GL. Barriers and facilitators to participation of minorities in clinical trials. *Ethn Dis*. 2012;22(2):226–230.
- Corbie-Smith G, Thomas SB, Williams MV, Moody-Ayers S. Attitudes and beliefs of African Americans toward participation in medical research. *J Gen Intern Med*. 1999;14(9):537–546.
- Warnecke RB, Oh A, Breen N, et al. Approaching health disparities from a population perspective: the National Institutes of Health Centers for Population Health and Health Disparities. *Am J Public Health*. 2008;98(9):1608–1615.
- Cooper LA, Ortega AN, Ammerman AS, et al. Calling for a bold new vision of health disparities intervention research. *Am J Public Health*. 2015;105(suppl 3):S374–S376.
- Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: assessing partnership approaches to improve public health. *Annu Rev Public Health*. 1998;19:173–202.
- Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2):377–381.
- Thompson B, Coronado G, Puschel K, Allen E. Identifying constituents to participate in a project to control pesticide exposure in children of farmworkers. *Environ Health Perspect*. 2001;109(suppl 3):443–448.
- Gutierrez Kapheim M, Campbell J. Best practice guidelines for implementing and evaluating community health worker programs in health care settings. 2014. Available at: http://www.suhichicago.org/files/CHW%20BPG_FULL_FINAL.pdf. Accessed March 3, 2015.
- Lewin SA, Dick J, Pond P, et al. Lay health workers in primary and community health care. *Cochrane Database Syst Rev*. 2005;25(1):CD004015.