

# GW Health Workforce Research Center

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## COMMUNITY HEALTH WORKERS:

Health System Integration,  
Financing Opportunities, and  
the Evolving Role of the  
Community Health Worker in  
a Post-Health Reform  
Landscape

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## INTRODUCTION

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Community Health Workers (CHWs) have been gaining attention from policymakers because of their unique role in addressing health disparities and socioeconomic drivers of disease, and because of their potential integration into the health care delivery system. To date, there has been limited research specifically describing the variation in CHWs' roles and relationships, and how that variation relates to management, to financing, to health system integration, and to the competencies CHWs should have in different contexts.

The purpose of this report is to better understand the varied landscape; to offer categories of analysis that may help inform policy, management, and research; to explore what CHW-health system integration looks like today; to reflect on the range of competencies that may be relevant to different CHW programs; and to explore Medicaid financing opportunities for the CHW workforce.

The report is informed by a database of 76 programs that utilize CHWs, interviews with 21 CHW program leaders and other thought leaders, and a systematic literature review. After a background and literature review, [Part II](#) of the report walks through results from our database, summarizing the structural elements of CHW programs that we believe may influence integration. This is followed by a presentation of three case studies from our database that explore how various relational elements contribute to preservation of the CHW concept in different types of integrated program models.

[Part IV](#) examines the evolution of CHW competencies and offers a framework through which to view the mechanisms, or “modes of impact”, that underlie the CHW profession. We propose additional competencies that may need to be included to address what is needed to be effective in integrated settings. Finally, Part V discusses the lack of permanent, stable funding for CHW programs and describes recent and proposed Medicaid rule changes that may provide opportunity for steady funding in a way that could enhance and broaden the CHW profession.

## PART I: BACKGROUND & LITERATURE REVIEW

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### ***Community Health Worker: Definition***

As defined by the American Public Health Association (APHA), a Community Health Worker (CHW) is “a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served.”<sup>1</sup> The CHW role is to “serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery.”<sup>1</sup> APHA further specifies that a CHW “builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities, such as outreach, community education, informal counseling, social support and advocacy.”<sup>1</sup> CHWs do not provide clinical care or replace other health care providers. Instead, they complement services delivered through the more formal health care network to provide more comprehensive and supportive care.

The term CHW includes many different job titles and roles, such as lay health worker, community health advocate, community connector, non-clinical health worker, patient navigator, volunteer health liaison and many others. CHWs may also have a title that recognizes special training/knowledge in a particular area, such as an asthma educator or a healthy home specialist. As defined by the U.S. Department of Health and Human Services, Office of Minority Health, “promotores” are a type of CHW that serves “an important role in promoting community-based health education and prevention in a manner that is culturally and linguistically appropriate, particularly in communities and for populations that have been historically underserved and uninsured”.<sup>2</sup>

### ***The CHW Workforce***

The only national survey of CHWs, carried out by HRSA in 2007, estimated the number of CHWs in the U.S. at 86,000 in 2000, increasing to 121,000 by 2005.<sup>3</sup> Evidence from the Bureau of Labor Statistics indicates substantial variation across the nation in numbers of CHWs relative both to state populations and to general employment in each state, with total CHW numbers continuing to grow.<sup>3,4,5,6</sup>

The 2007 HRSA survey reported that CHW wages are low, turnover is high, and job security is limited. Approximately one third of CHWs in the programs surveyed were volunteers. All of the CHWs in the survey were non-white and a majority was women (82%). Educationally, almost one third of CHWs have completed a four year college degree while another 20% attended some college. About half of programs surveyed in 2007 had no set educational prerequisite for newly-hired CHWs; those that did required either a high school diploma (21% of all programs) or a bachelor’s degree (32%).<sup>3</sup> Other, subnational, surveys have reported similar employment, gender and educational profiles to this national picture, but ethnic and racial profiles appear to vary substantially between regions and states.<sup>7,8</sup>

### ***CHWs’ Unique Role in Health Promotion***

No matter their title or training, the key defining characteristic of CHWs is that they possess an intimate knowledge of community needs and resources, and carry the trust and respect of community members in ways that the traditional healthcare workforce may not. These attributes often enable CHWs to address the social determinants of health where the health care system may fall short due to lack of time, skills, cultural affinity and community linkages. A growing body of research demonstrates CHWs’ positive impact on patient and community health, particularly among low-income and minority populations: CHW programs have shown success in improving chronic disease

management,<sup>9,10,11,12,13,14,15</sup> enhancing disease prevention and screening,<sup>16,17,18,19,20,21</sup> promoting positive lifestyle behavior changes,<sup>22,23</sup> facilitating insurance enrollment,<sup>24</sup> and reducing unnecessary health service utilization.<sup>25,26</sup>

### ***CHWs & the Changing Healthcare Landscape***

Given their unique potential to generate positive health outcomes, CHWs are increasingly being acknowledged as valuable members of the healthcare workforce.<sup>27</sup> In 2010, the U.S. Department of Labor officially recognized CHWs as a labor category.<sup>28</sup> Federal-level efforts – including HHS’s *Action Plan to Reduce Racial and Ethnic Health Disparities*<sup>29</sup> and their *Promotores de Salud Initiative*<sup>30</sup> – recognize the important contribution CHWs make in reaching vulnerable, low income, and underserved Americans and call for the use of CHWs to provide multiple services to help reduce health disparities.

Furthermore, the Affordable Care Act (ACA) promotes a variety of new payment and health service delivery mechanisms that are driving transformation of the health care workforce and may help enhance the role of CHWs within the healthcare system.<sup>31</sup> In particular, CHWs: 1) can be designated as part of the “health team” serving patients enrolled in Medicaid health homes<sup>32</sup> and 2) are included in several state-level plans under the ACA-funded State Innovation Models initiative that provide support to states for the development and testing of state-led, multi-payer health care payment and service delivery models to improve health system performance, increase quality of care, and decrease costs.<sup>33</sup> In addition, CHWs may become more in-demand under Accountable Care Organization (ACO) models and other global-budget contracts, advanced in the ACA, that financially reward health providers for controlling medical spending while enhancing the value of patient care.

An important new Medicaid rule change<sup>34</sup> also allows Medicaid programs to reimburse for preventive services provided by CHWs and other professionals that may fall outside of a state’s clinical licensure system so long as the preventive service was initially recommended by a physician or other licensed practitioner.<sup>i</sup> States are in various stages of implementing this rule change,<sup>35</sup> and the prospect of the change itself has sparked debate in many states as to the future role of the CHW within the health system.

### ***CHW Standardization & Certification***

Heightened interest in the value of CHWs and the potential for their increased connection to and integration within the healthcare – and health insurance – system has led to discussion over whether credentialing or certification of the CHW is warranted, and, if so, what standardization of the profession should look like.

A desire for greater standardization of the CHW workforce seems inevitable given the almost bewildering degree of variation between CHW programs, which sits uneasily with the increasing adoption by health systems of workforce quality standards intended to ensure patient safety and better health outcomes. An important emerging mechanism for CHW standardization is state certification or credentialing.<sup>36</sup> Texas enacted the first comprehensive CHW certification legislation in 1999<sup>3</sup> and has since been joined in this regard by Massachusetts<sup>37</sup> and New Mexico<sup>38</sup>. Several other states (AK, MN, IN, and OH) have introduced CHW certification for particular sectors<sup>39</sup> while others, including MD and OR are actively working toward certification.<sup>36</sup>

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<sup>i</sup> Previous regulations that stated Medicaid would only reimburse for preventive services that were provided by a physician or other licensed practitioner. This rule served to prevent otherwise-capable providers, such as CHWs, from providing preventive services to Medicaid beneficiaries. The rule change gives more flexibility to state Medicaid programs to cover and pay for community-based interventions provided by CHWs.

Although standardization through certification is at the heart of state workforce planning for CHWs, it involves gains and losses for different stakeholders.<sup>40</sup> For CHWs themselves, certification can improve their stability of employment and lead to career pathways<sup>41</sup>, while payers can see certification as a ready-made guarantee of a standard skill set and knowledge base for CHWs<sup>36</sup>, and states can view it as an opportunity to bring order to a growing area of the healthcare workforce<sup>7</sup>, increase the size of the workforce and training infrastructure, and increase funding for services<sup>42</sup>. Training organizations also benefit from certification, which simplifies and expands their training portfolios, often with state funding support.<sup>39</sup> Members of other occupations may also have something to gain (or lose) through the wider introduction of CHWs.<sup>43</sup>

An important aspect of standardization is that it necessitates choices. For an emerging occupation, the choices taken can shape the whole direction in which the occupation is moving. Weil, for example, describes two very different future models for the CHW: one where the CHW workforce serves the community by engaging in advocacy and empowerment, and other based on the training and deployment of a professionalized, specialized workforce.<sup>44</sup> Although the latter may be more readily accepted by the health system, it would represent a significant break with the historical roots of the CHW movement, could create barriers to entry into the profession<sup>40, 43, 44</sup> and could diminish the community trust in CHWs that is arguably a core element in their mode of impact.<sup>45</sup>

The choices to be made include deciding what it takes to be a CHW have been evolving. Up until the mid-2000s, CHWs were typically defined as ‘lay workers’ lacking a formal professional certificate or degree, sometimes referred to as ‘health professionals’<sup>7</sup> and sometimes not<sup>3</sup>. However, since the American Public Health Association published its influential definition in 2010, the requirement that CHWs should lack formal education has been dropped, while the term ‘professional’ has been displaced by ‘front-line public health worker’.<sup>1</sup> Another significant change has been the shift from a requirement that a CHW simply have ‘a unique understanding of the population served’ to references to the CHW being a ‘trusted by the community’ engaged in the ‘empowerment’ of the community and individuals.<sup>46, 47</sup> There may be a growing belief among CHW organizations in the importance of CHWs coming ‘from the communities they serve’.<sup>48</sup> These shifting views about who can be a CHW arguably represent a response by CHWs and their allies to the challenges inherent in calls for greater standardization, and in particular the need to establish a stronger ‘identity’ for CHWs in comparison with other occupations with similar or overlapping functions.

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## PART II: Database Findings – Structural Elements That May Influence Integration

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Between January and May 2015, the GW research team constructed a database of programs that employ CHWs. The primary purpose of building such a database was to use it as a means of synthesizing the ‘state of art’ with regard to CHWs’ current roles, organizational structures, reimbursement practices, relationships with the broader health system, and other issues impacting the advancement of CHWs within the field.

The objective of this database was not to be exhaustive or representative of all CHW programs, nor was the objective to use the database to build consensus among stakeholders on best practices for CHW program models. Rather, this is an effort to provide a snapshot of the range of CHW programs as they are today, and to identify a taxonomy of program characteristics.

As described in this section, we used the database to highlight key features of programs using CHWs, focusing on features that may affect integration with the healthcare system.

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### METHODS

#### *Database*

To gather a list of CHW program models, we used a snow ball sampling approach using the following sources:

- 1) A preliminary list of approximately 40 programs using CHWs compiled by Trust for America’s Health (TFAH), a nonprofit and nonpartisan organization focused on prevention and health promotion;
- 2) Interviews with 21 CHW program leaders and other thought leaders;
- 3) Grantee lists for four major federal innovation initiatives that include programs using CHWs: the Center for Medicare and Medicaid’s Innovation Grants; the Agency for Health Care Research and Quality’s Health Care Innovation Exchange; the Environmental Protection Agency’s National Environmental Leadership Awards; and the Centers for Disease Control and Prevention’s (CDC) Racial and Ethnic Approaches to Community Health (REACH) program;
- 4) Case studies and promising practices compiled by Stakeholder Health, an organization that convenes hospital health systems to address the underlying causes of poor health;
- 5) Information gathered by team members at 2014 and 2015 conferences on such topics as health system transformation, payment reforms, CHWs, health disparities and prevention and promotion policies;
- 6) Programs described in the literature review.

Our operational definition of a CHW was derived from the APHA definition (discussed above) and the Standard Occupational Classification (SOC). The SOC delineates the following tasks for a CHW:

- [A]ssist individuals and communities to adopt healthy behaviors.
- Conduct outreach for medical personnel or health organizations to implement programs in the community that promote, maintain, and improve individual and community health.



- May provide information on available resources, provide social support and informal counseling, advocate for individuals and community health needs and provide services such as first aid and blood pressure screening.
- May collect data to help identify health needs.

The SOC definition explicitly excludes “Health Educators” and “Patient Navigators” from the CHW definition, keeping them as separate classifications. Therefore, we excluded programs from our database where workers had a primary role as a health educator or patient navigator. We “blended” the APHA and SOC definitions by including CHWs involved in “health education” or “patient navigation” only if their roles also reflected key CHW characteristics consonant with the APHA definition, such as familiarity with the target community, language affinity, community outreach and advocacy, or an emphasis on empowerment.

We also excluded from our database programs that carried out community health activities with practitioners other than CHWs. As described in Part IV, many of the roles/functions performed by CHWs could be performed by other health workers, and some community-based interventions are performed by other types of clinicians, such as nurses or social workers. As the goal of this effort is to describe the elements of the CHW profession, and not to compare/contrast with other health professions, we excluded these types of programs.

When initially searching the literature and other program databases listed above for CHW programs, we used the search terms “health worker,” “community health worker,” “promotora(s),” “community care coordinator,” and “CHW.” These searches resulted in programs that used other community health-oriented workers with varying titles, including:

<i>Outreach educator</i>	<i>Youth health advocate</i>
<i>Health advocate</i>	<i>Family service coordinator</i>
<i>Health ambassador</i>	<i>Health resilience specialist</i>
<i>Community health advisor</i>	<i>Maternal and infant health advocate</i>
<i>Home visitor</i>	<i>Non-clinical health worker</i>
<i>Community health representative</i>	<i>Community health navigator</i>
<i>Outreach worker</i>	<i>Community health representative</i>
<i>Outreach advocate</i>	<i>Community connector</i>
<i>Community-based health navigator</i>	<i>Volunteer health liaison</i>
<i>Youth worker</i>	<i>Community health information expert</i>

Our search efforts yielded 117 programs, but only 76 programs met our search criteria.

Using Excel, we constructed a database of these programs with a series of predefined variables that would enable us to compare and contrast models. To initially populate the database, we searched for publicly available descriptions on program Web sites, in the lay media, or in published research.

### **Questionnaire**

After reviewing publicly available information on each program identified in our search, we sent contacts at each program a request to provide further information via survey monkey. The form asked participants to validate the data collected on their programs by selecting the appropriate variables under each database category. The form was sent to 76 programs, with three follow-up requests. We

received 19 unique responses (25% of programs responded). The database was then refined based on the collected responses. The survey questionnaire can be found under [Appendix G](#).

### ***Interviews with Thought Leaders***

To supplement information gathered in our database search and questionnaire, we conducted a series of 21 semi-structured interviews with CHW program leaders and other thought leaders. We developed an initial list of interviewees based on consultations with OMH and HRSA and from our literature review. As we wanted to gain a range of perspectives, we targeted CHW thought leaders from academic institutions and think tanks, state and federal public health departments, national nonprofit organizations, payers, and individuals leading CHW programs. We generated additional interview contacts by asking each interviewee for recommendations.

We developed an interview guide to help structure these conversations. We asked all interviewees questions related to:

- The types of CHW models that work effectively
- The ways that CHW programs are integrating with the health system
- The ways the Affordable Care Act is shaping CHW programs and CHW-health system interactions
- Mechanisms for compensating and reimbursing CHW and how these are evolving in the changing public health and health care landscape
- Challenges and opportunities for the CHW profession

Where interviewees were in leadership roles for programs that employ CHWs, we asked a set of additional questions related to: the use of CHWs within the program; program integration with the health system; challenges faced in program implementation; and lessons learned for implementing similar programs.

We also asked interviewees for recommendations of CHW programs to include in our database. [Appendix D](#) contains a list of the experts interviewed and a copy of the interview guide.

We collected data on each CHW program in the following general categories:

- Location (*Where is the program located geographically?*)
- Target Health Outcome (*What are the intended outcomes or outputs of the intervention?*)
- Target Population (*What patient populations are served?*)
- CHW Roles (*What tasks/activities/functions do CHWs have under the program?*)
- Primary Site of Intervention (*What are the characteristics of the intervention setting?*)
- CHW Hiring Qualifications (*What education, training and knowledge do CHWs need to have to work for the program?*)
- CHW Titles (*What does the program call this workforce? What titles are used?*)
- Compensation (*In what ways, if any, are CHWs compensated for their work?*)
- Leading Organization(s) (*What type of entity leads or facilitates the program?*)
- Program Partnerships (*What types of entities does the program partner with?*)
- Program Funding Source (*How is the program funded?*)
- Reimbursement for CHW Services (*Do CHWs receive reimbursement from public or private insurers for their services?*)
- Program Evaluation (*Has the program undergone any type of evaluation?*)

A full list of database fields can be found in [Appendix F](#).

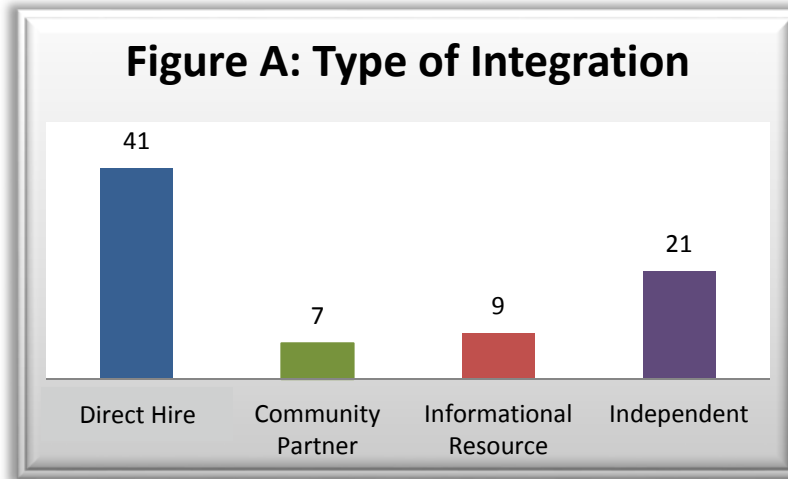
## RESULTS

To be able to explore CHW program features that may influence health system integration, we reviewed the database and identified emerging categories of integration. We discussed and tested different categories of integration through an iterative process. The resulting four seems to cover the spectrum of arrangements we were able to document. We assigned each CHW program an integration category, based on that program's general connection to and/or integration with other health care providers. We used the following four integration categories:

1. **Direct Hire.** Programs defined as “direct hire” are those arrangements where CHWs are integrated into the larger health team, functioning as an internal member as opposed to functioning as an external partner or resource. In many of these arrangements, the health team has built their own CHW workforce by hiring and training individuals that bridge the gap between the health care system and the community.
2. **Community Partner.** Programs defined as “community partner” are those arrangements where CHWs are employed by an external entity that has a formal partnership with a hospital, clinic, or health system. In many of these arrangements, the external CHW program receives referrals from and communicates back to the health system through formal communication channels, but the CHW does not function as a specific member of the larger health care team.
3. **Informational Resource.** Programs defined as “informational resource” are those arrangements where CHWs serve as an external informational resource to the health system without any formal partnership or formal communication channel. In these types of programs, part of the role for the CHW is to educate local health practitioners on issues ongoing in the community related to the determinants of health.
4. **Independent.** Programs defined as “independent” are those that are unconnected to the healthcare system beyond simply fielding referrals from, or making referrals to, health care providers. CHWs working in these types of programs are not integrated as part of a team or formal partnership, and serving as an informational resource to the health care system is not one of their defined tasks.

It is important to note that these integration categories do not assess the quality and extent of the integration between CHWs and other healthcare providers. We approach that question in [Part III](#) of this report with the use of case studies.

As shown in Figure A, “direct hire” was the most common integration type found in our database: with 41 programs (53.9% of all programs) incorporating CHWs as a member of a larger team of health professionals. A smaller number of programs (7) were “community partner” arrangements, where CHWs work under the leadership of a community-based entity that has a formal partnership with a hospital, clinic or health system.



We are aware of two programs in our database that utilize both the “direct hire” and “community partner” approaches, hiring some CHWs as part of their internal health team, and formally contracting with other CHWs who are employed by an external community-based organization. We categorized 9 programs as “informational resource” arrangements, where CHWs serve as an external resource to the health system without a formal partnership. Finally, 21 programs were categorized as “independent”, having no formal connection to the health care system.

Having categorized each program by integration type, we identified four structural elements that seemed likely to be influencing integration. These four are not the only structural elements that impact integration, but have been used in the past in the structural elements of CHW employers presented in HRSA’s 2007 Community Health Worker National Workforce Study.<sup>1</sup> The structural elements included:

1. **Funding Source:** *What entity(ies) provide funding for the CHW program?*
2. **Leading Organization:** *What type of organization leads/employs the CHWs working in the program?*
3. **Primary Site of Intervention:** *Where do CHWs primarily deliver services to patients or communities?*
4. **Hiring Criteria:** *What are the requirements for hiring CHWs to work for the program?*

By examining these structural elements, our intent is to better understand how funding sources, organizational leadership, site of intervention, and hiring criteria influence integration. For example, do all programs that place CHWs as part of the health team have similar funding characteristics and similar criteria for hiring CHWs? Do programs that operate in a primarily clinical setting have a different integration type than programs that operate primarily in a community setting? Do programs that run independent of the health system have structural characteristics different from those programs that connect to the health care system as a community partner or informational resource?

Table 1 outlines these structural elements, and the various subcategories that emerge from our database:

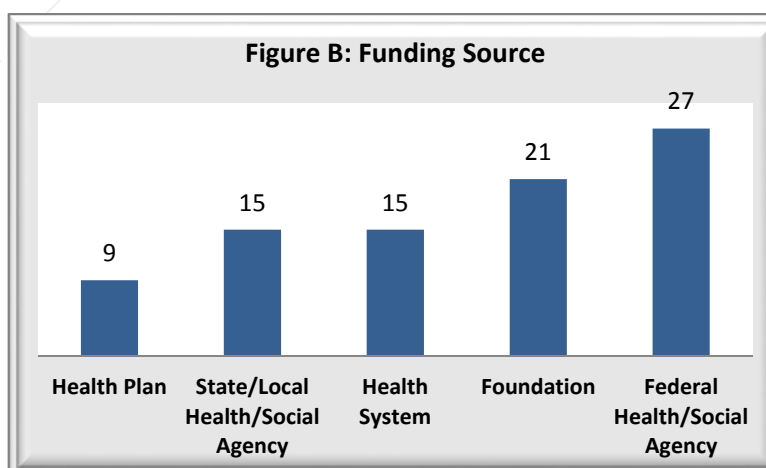
**TABLE 1: Structural elements that may influence integration**

Funding Source	Leading Organization	Primary Site of Intervention	Hiring Criteria
<ul style="list-style-type: none"> <li>Health System</li> <li>Foundation</li> <li>State/Local Health/Social Agency</li> <li>Federal Health/Social Agency</li> <li>Health Plan</li> </ul>	<ul style="list-style-type: none"> <li>Health System</li> <li>External Community Organization</li> <li>Other Nonprofit Entity (university, foundation, coalition etc.)</li> <li>Health/Social Agency</li> </ul>	<ul style="list-style-type: none"> <li>Clinic</li> <li>Hospital</li> <li>Patient Home</li> <li>Other Community Setting</li> </ul>	<ul style="list-style-type: none"> <li>Educational Level</li> <li>Community Membership</li> <li>Training</li> <li>Language Skills</li> <li>Peer Status</li> </ul>

### **Funding Source**

Funding sources inherently impact CHW integration because programs that employ CHWs have obligations to meet funder requirements and expectations. For example, some funders may ask programs to build health teams that address care holistically or to find innovative ways of integrating community-based interventions within clinical care. These funding goals are more likely to promote the development of CHW-health system integration than funders who, for example, task their grantees with fostering community health through leading community support groups or through community organizing. This is not to say that one funding goal is somehow more important or more preferable than another, but funding sources do have a natural impact on whether and how CHW programs will integrate with the health system.

Most CHW programs in our database are funded by federal, state, or private grant dollars (see Figure B). In total, 27 programs from our database were funded by a federal health/social agency (primarily the Centers for Disease Control and Prevention, the Health Resources and Services Administration, and the Centers for Medicare and Medicaid Innovation); private foundations funded another 21 programs; and state or local health/social agencies funded 15 programs. Health system entities (typically hospitals or integrated health systems) funded another 15 programs, and public or private health plans – including managed care plans serving the Medicaid population – served as the funding source for 9 programs. A small portion of programs (9) were funded by more than one source of funding, typically federal, state or local public health dollars being supplemented with additional resources by private philanthropy.

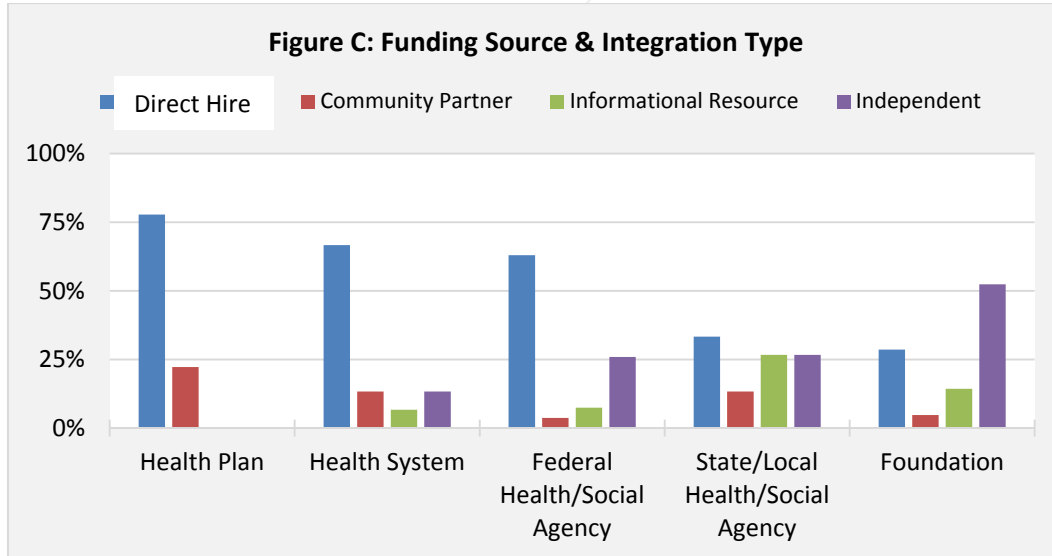


While our database is a convenience sample, these findings are consistent with data from the literature that shows that the most common funding model for CHW programs is reliance on short-term

categorical grants and contracts from foundations and federal, state or local government agencies.<sup>2,3,4</sup> In addition, lack of public and private insurance reimbursement has been described by the literature as a barrier to the expanded use of CHWs.<sup>2,5</sup>

Examining the integration approaches sponsored by each source of funding is suggestive of ways in which funding influences integration:

- **Figure C** shows that where health plans provided CHW program funding, all such programs followed a “direct hire” or “community partner” type of integration.
- Health system-funded programs were more likely to support “direct hire” approaches, although there are some examples in the database of health systems supporting each of the other three integration types.
- Federal health/social agency funding was also more likely to support “direct hire” integration, although federal sources did support over one-quarter (29%) of all of the “independent” programs in our database. Federal funding from Affordable Care Act (ACA) initiatives seems to drive many of these “direct hire” programs. For example, the Centers for Medicare and Medicaid Innovation (Innovation Center) is a common federal funding source for programs in our database. The Innovation Center often asks grantees to build innovative health teams that can address the social determinants of health, so the incorporation of CHWs within team-based care fits nicely into Innovation Center objectives.
- State/local health/social agencies funded all integration types with fairly equal distribution.
- While foundations supported 13% of “direct hire” approaches in the database, foundation dollars were more likely to support CHW programs that operate independently of the health system.



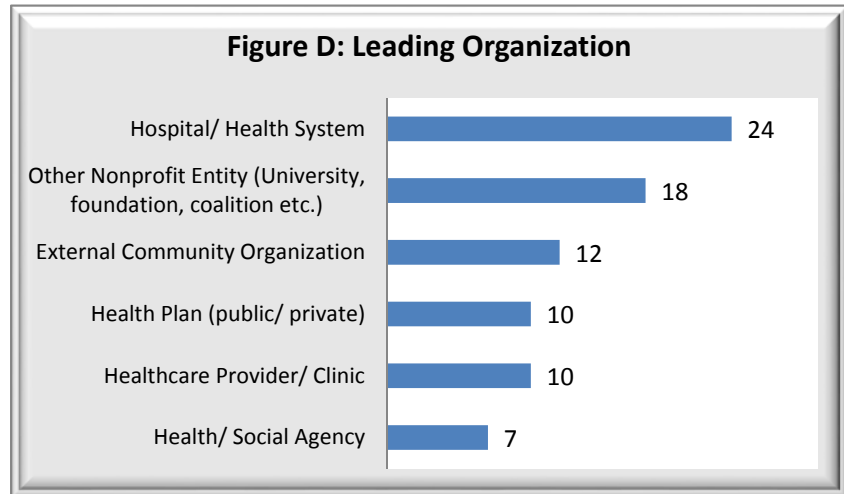
### Leading Organization

Another important structural characteristic to examine is which type of entity leads the CHW program and how this influences integration. A leading organization is one that employs, or, in the case of CHWs that work in a volunteer capacity, directs the work of CHWs. The leading organization may fund the CHW program, but our database indicated that for many programs, the leading organization is distinct

from its funding source. Organizational leadership is worth observing, as different types of entities will have different organizational goals related to the importance of integrating, and at what level and type.

Findings show that over half of the CHW programs in our database (58%) are led by clinical providers and health plans:

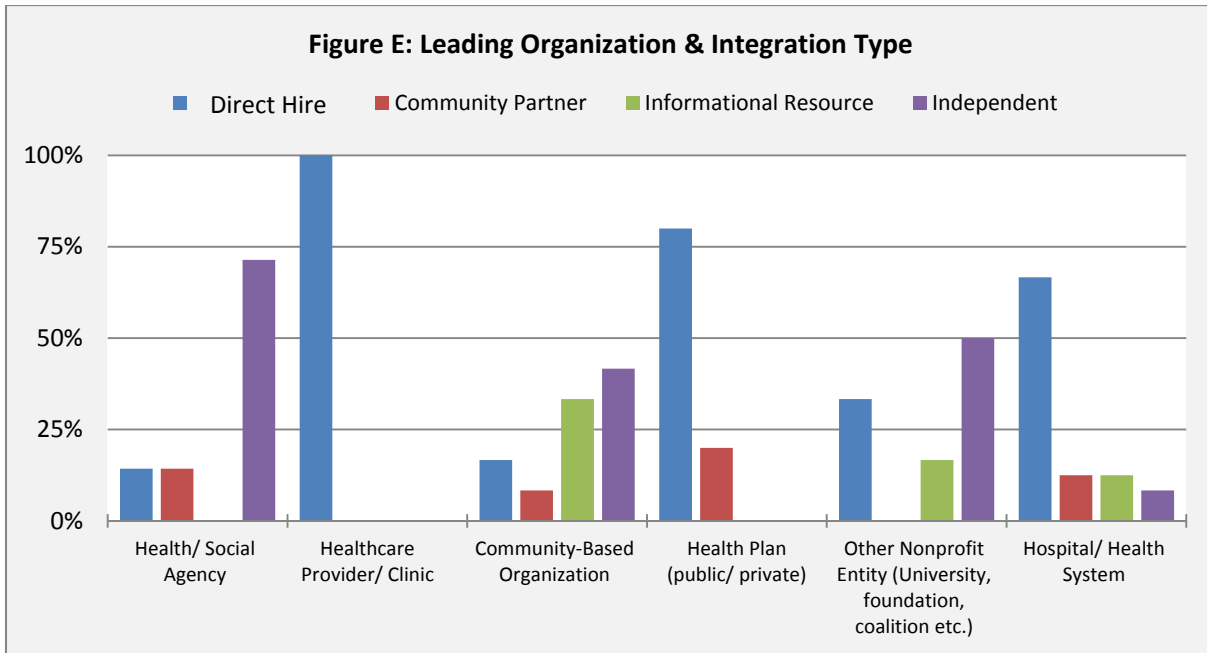
- Twenty-four programs in our database (31.6% of all database programs) were led by a hospital or health system;
- Another 10 programs were led by other types of clinical providers, such as federally qualified health centers; and
- Public or private health plans served as the leading organization for 10 CHW programs.



Community-based organizations and other nonprofit entities (such as universities or community coalitions) served as the leaders for 30 programs in our database (39% of all programs), while health/social agencies, such as a local health department, were the leading entity for less than 10% of programs. In four programs, two or more types served as organizational lead: for example, a hospital and community-based organization sharing a leadership role.

It should be noted that the distribution represented in [Figure D](#) does not necessarily indicate the size of the CHW workforce. For example, a number of the health plans in our database employed just a handful (less than five) CHWs, where it was more common for community-based organizations to be leading a much larger CHW workforce. Results from other surveys of CHWs show that the majority of CHWs work for community-based organizations, with a very small percentage working for health insurers.<sup>6</sup>

As illustrated in [Figure E](#), clinical entities (healthcare provider/clinic and hospital/health system) and health plans are more likely to serve as the leading organization for “direct hire” integration approaches; health/social agencies, community-based organizations and other nonprofit entities lead programs across a range of integration types.

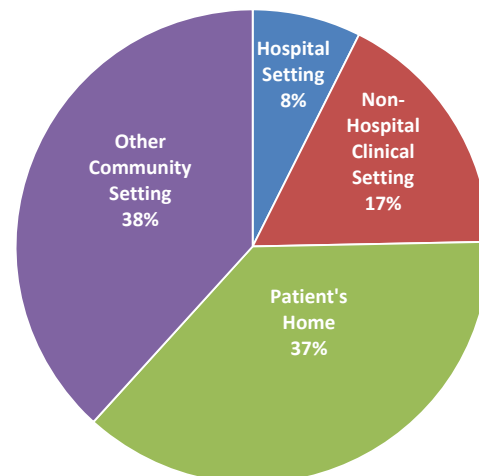


### Primary Site of Intervention

Setting of intervention is a third structural factor that may influence integration. Traditionally, CHWs are frontline public health workers, serving in community settings.<sup>7</sup> The core functions of the CHW – outreach, community education, informal counseling, social support and advocacy – are perhaps best accomplished outside of the clinical setting. Yet, where health systems and health plans are funding and leading CHW programs, CHWs may be more likely to interact with patients in hospitals and other clinical settings. Therefore, examining the connection between integration and site of intervention is useful for understanding how evolving team-based care models impact how CHWs interact with the communities they are meant to serve.

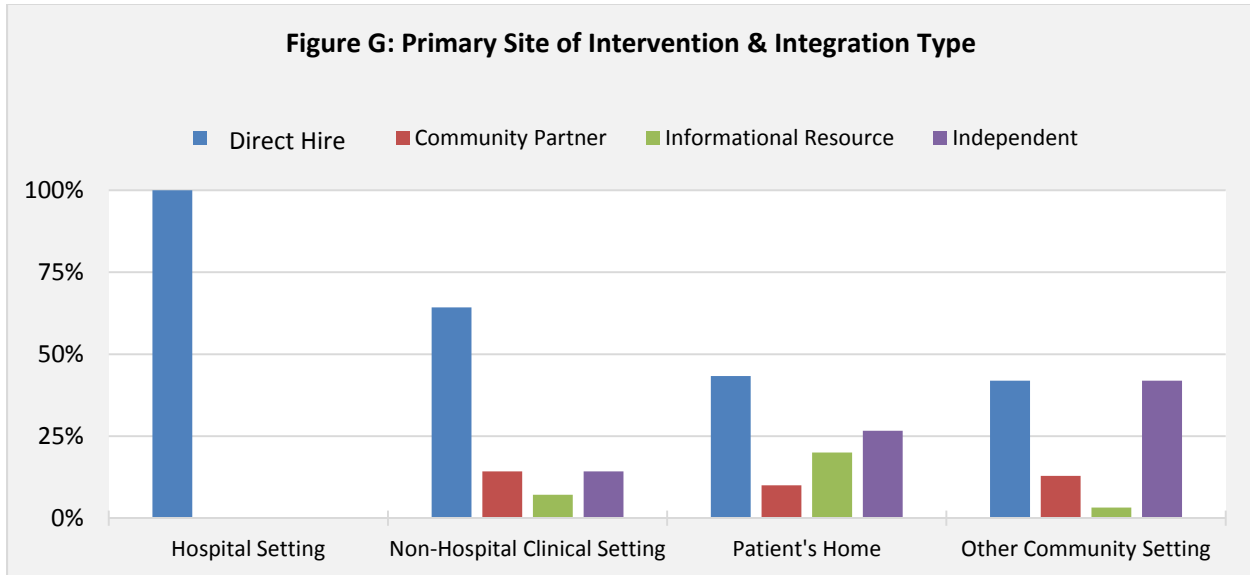
Our database shows that most programs (75%) are delivered in home and community settings. As shown in Figure F, 38% of programs were delivered primarily in “other” community settings, common types including churches, schools, and community centers. This catch-all category was the most common setting type followed by patient’s home, where 37% of database programs delivered services. Another 17% of programs had a primary site of intervention in a non-hospital clinical setting, such as a community health center, a physician’s office, or a school-based health center. Finally, 8% of programs in our database had a primary site of intervention in a hospital setting. These findings are similar to other surveys of CHW programs.<sup>8</sup>

**Figure F: Primary Site of Intervention**





As would be expected, where hospitals and other clinical settings are the primary site of intervention, CHWs are almost always integrated as a member of the health team (see [Figure G](#)). Where CHWs work in home-based and other community-based settings, integration may happen as “direct hire”, “community partner” or “informational resource.”

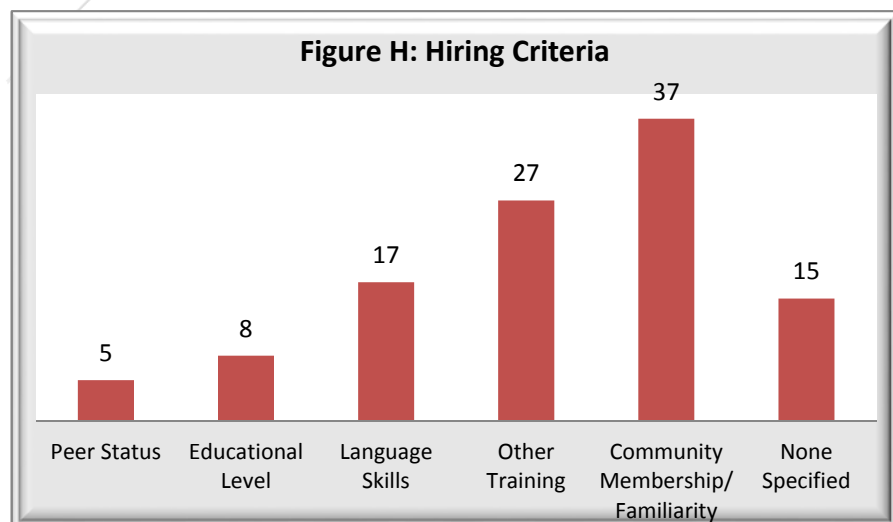


### Hiring Criteria

The final structural element we examined was program hiring criteria to determine whether different integration types set different hiring requirements. In other words, do choices about integration change the characteristics of the CHW workforce hired?

We examined five different hiring criteria:

1. **Community Membership/Familiarity:** Almost half of the programs in our database (37 of 76, or 48.7%) required applicants to live the community served (community membership) or have considerable understanding of that community from past experience (community familiarity), for example, the CHW grew up in that community.
2. **Educational Level:** Programs in our database rarely set educational requirements. Only 8 programs (10.5%) cited any educational criteria, most requiring CHWs to have a high-school



diploma or GED. One program required an associate’s degree and another program required a masters or bachelor’s degree.

3. **Other Training:** Over one-third of programs required some “other” type of training as a hiring qualification; for example becoming certified as an asthma educator or passing a program-based training course.
4. **Language Skills:** Seventeen programs (22.4%) had requirements for language fluency or proficiency.
5. **Peer Status:** Five programs required applicants to have some level of “peer status,” meaning that the CHW has an understanding of the health condition faced by patients participating in the program (for example, a diabetic CHW who is working in a diabetes prevention program).

While this is not an exhaustive list of all hiring criteria, this list represents the most common types of hiring criteria found in programs in our database. It should be noted that for 15 programs in our database (19.7%), hiring criteria could not be determined.

Figure I examines the connection between hiring qualification and integration type. While all integration approaches value community membership/familiarity, our database shows that programs categorized as “direct hire” were more likely than other programs to place educational or other training requirements on CHW applicants.

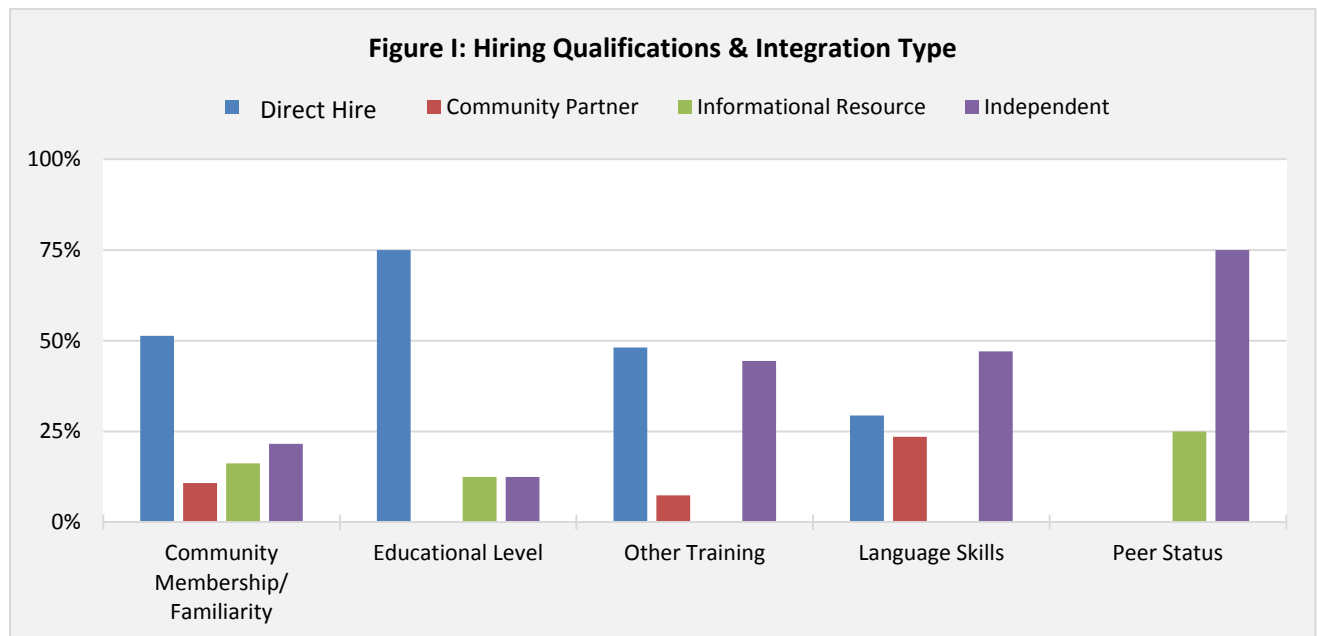


Table 2 summarizes the various structural elements that may influence type of integration.

**Table 2: Summary of structural elements that may influence type of integration**

	Funding Source	Leading Organization	Primary Site of Intervention	Hiring Criteria
<b>DIRECT HIRE</b>	<ul style="list-style-type: none"> <li>Most programs funded by federal agencies, but health plans and hospital/health system funders are important</li> </ul>	<ul style="list-style-type: none"> <li>More likely to be led by clinical providers (hospital/health systems or clinics), and by health plans</li> </ul>	<ul style="list-style-type: none"> <li>Programs exist in all intervention settings</li> <li>Every program in a hospital setting was classified as a team member approach</li> </ul>	<ul style="list-style-type: none"> <li>More likely than other programs to place educational or other training requirements on CHW applicants</li> <li>Community membership/familiarity is also a frequent hiring qualification</li> </ul>
<b>COMMUNITY PARTNER</b>	<ul style="list-style-type: none"> <li>All types of funding sources support these approaches</li> </ul>	<ul style="list-style-type: none"> <li>More likely to be led by hospital/health systems and health plans</li> </ul>	<ul style="list-style-type: none"> <li>Most likely to happen in home-based intervention settings</li> </ul>	<ul style="list-style-type: none"> <li>Programs tend to require community membership/familiarity, language skills and training</li> </ul>
<b>INFORMATIONAL RESOURCE</b>	<ul style="list-style-type: none"> <li>More likely to be funded by state or local agencies, or with foundation dollars</li> </ul>	<ul style="list-style-type: none"> <li>More likely to be led by community-based organizations, other nonprofit entities, and hospital/health systems</li> </ul>	<ul style="list-style-type: none"> <li>More likely to exist in home-based intervention settings and other community settings</li> </ul>	<ul style="list-style-type: none"> <li>Most common hiring requirement is community membership/familiarity, educational and peer status requirements</li> </ul>
<b>INDEPENDENT</b>	<ul style="list-style-type: none"> <li>More likely to be funded by foundations and federal health/social agencies than other funding sources</li> </ul>	<ul style="list-style-type: none"> <li>More likely to be led by community-based organizations or other nonprofit entities, or by a health/social agency, such as a public health department</li> </ul>	<ul style="list-style-type: none"> <li>More likely to exist in home-based intervention settings and other community settings</li> </ul>	<ul style="list-style-type: none"> <li>Programs tend to have requirements related to: community membership/familiarity, education and other training, and language</li> </ul>

## DISCUSSION

### *Funding Source*

Other than health plans supporting a more narrow range of program types, we found examples in our database of each of the other funding sources supporting programs of every integration type. This finding is important: it makes clear that all types of funders can be important players for all types of programs. For example, our database shows that health systems fund many approaches where CHWs are health team members, and this makes sense: hospitals and health systems are increasingly being asked to improve the quality of the care they deliver while reducing costs, and integrating CHWs within team structures is one way of increasing the value of care delivered. But hospitals were also frequent funders of other integration types; these approaches were most often funded with community benefit dollars, where funding may go towards supporting programs in the community that address patient needs but do not necessarily integrate with the health system as part of a health team.

In addition, while health plans and health systems are often thought of as leaders in innovating integrated health teams, our database shows that grants and contracts from foundations and federal, state or local government agencies remain an important source of funding for all types of integration approaches.

### ***Leading Organization***

Results from our database may indicate that clinical entities (health systems, and other types of clinical providers) and public/private health plans are becoming more significant leaders of CHW programs. Where these types of entities serve as the program lead, we found that CHW programs are most often structured as a team-based integration approach (see Figure E). This is not surprising, as clinical entities are increasingly implementing team-based models of care in response to funding opportunities and ACA-driven market changes.

What is interesting is that while health/social agencies, such as public health departments, may fund all types of integration approaches (see Figure C), when these entities are leading the effort, CHW programs are more likely to operate independently of the health system. In contrast, community-based organizations and other nonprofit entities found in our database were more likely to lead programs across a range of integration types. This finding may suggest that public health departments and other health/social agencies have more barriers to developing relationships with health systems than do community-based, non-governmental entities. As state-level health-system transformation efforts progress (such as State Innovation Models initiatives), it may be important for states to cultivate roles for health departments within emerging models.

### ***Primary Site of Intervention***

The database shows that where CHWs work in home-based and other community-based settings, integration may happen as “direct hire”, “community partner” or “informational resource.” These findings challenge the assumption that CHWs have to work *in* the clinical setting to be integrated in the health team. Our work shows that CHWs can work in teams or in partnership with other practitioners from a community locus.

### ***Hiring Criteria***

Overall, few programs cited “education level” as a requirement. It should not be concluded from this finding that CHWs do not have educational credentials: other surveys of CHWs have found that approximately one-third of the workforce has completed high school, with another 50% having completed college or “some college.”<sup>9</sup> What this finding may indicate is that CHW programs place greater importance on community membership/familiarity than formal education. Many programs in our database offered robust program-based training or required their CHW workforce to obtain an outside certification; these training requirements may be more specific to program needs than formal education.

While all integration approaches value community membership/familiarity, our database shows that programs categorized as “direct hire” were more likely than other programs to place educational or other training requirements on CHW applicants. Often, these programs were led by health plans and large health systems. This may indicate that when program leadership is not as connected to the CHWs and their community, education and training may be the most concrete hiring criteria for program leaders to understand. Where leadership comes from a community-based organization or small community health center, leaders may have a better sense of the quality of a CHW applicant based on other factors.

Another noteworthy finding is that “peer status” was only required by “informational resource” and “independent” CHW programs. This finding may indicate that other types of programs do not appreciate the value of peer-to-peer patient support or do not know how to recruit for this characteristic.

## **OVERALL CONCLUSIONS**

Our database analysis shows that while each integration type has certain unifying structural characteristics around funding, leadership, intervention site and hiring criteria (see [Table 2](#)), there is no one-size-fits-all approach and no blueprint for integrating CHWs with the health system. As policymakers, CHW leaders, health systems and other stakeholders examine the potential for CHW-health system integration, it should not be assumed, for example, that health systems have to be in leadership roles to make these programs successful, or that CHWs have to interact with patients in clinical settings to be cohesive members of a larger healthcare team. Nor should it be assumed that CHWs must be located outside health systems to be effective. Our database contained multiple examples of community-based organizations leading integrated models and of CHWs integrating with a health team from a community locus. In addition, it should not be assumed that a certain level of education or training is required of CHWs to work in integrated health team models. More often than not, community membership/familiarity is a more important hiring criterion than formal education or training.

Furthermore, it should not be assumed that “direct hire” integration approaches are always the end goal. Interviews with CHW program leaders and other thought leaders revealed that while many programs that employ CHWs want to become better integrated with health systems, other programs do not. Some CHW program leaders are concerned that becoming integrated into care teams will jeopardize the independence and autonomy that CHWs need to be agents of change in their communities. Other programs are interested in working more collaboratively with health systems, but do not believe that the day-to-day activities conducted by CHWs within their program are compatible with team-based approaches.

Our analysis points to “community partner” and “informational resource” integration as alternative approaches to full team member integration. These integration types may allow CHWs to maintain their structure and autonomy while lending expertise and resources to the health system. As policymakers, CHW leaders, health systems and other stakeholders examine opportunities for integration, these alternative approaches should be considered, especially if they allow for CHW-health system relationships to be developed in ways that help CHWs maintain the trust and respect of community members.

In short, our analysis of the structural elements of current CHW programs should spur creative thinking among stakeholders and decision makers about the range of innovative integration opportunities and approaches.

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<sup>1</sup> U.S. Department of Health and Human Services, Bureau of Health Professionals, Health Resources and Services Administration. Community Health Worker National Workforce Study [Internet]. Washington, DC: HRSA; 2007 May. Available at: <http://bhpr.hrsa.gov/healthworkforce/reports/chwstudy2007.pdf>.

<sup>2</sup> Dower C, Knox M, Lindler V, O’Neil E. Advancing Community Health Worker Practice and Utilization: The Focus on Financing. San Francisco: National Fund for Medical Education; 2006. Available at: <http://tiny.cc/k21j2x>.

<sup>3</sup> Alvisurez J, Clopper B, Felix C, Gibson C, Harpe J. Funding Community Health Workers: Best Practices and the Way Forward [Internet]. Shelton: Southwestern Area Education Centers, Inc.; Spring 2013. Available at: [http://www.healthreform.ct.gov/ohri/lib/ohri/sim/care\\_delivery\\_work\\_group/funding\\_chw\\_best\\_practices.pdf](http://www.healthreform.ct.gov/ohri/lib/ohri/sim/care_delivery_work_group/funding_chw_best_practices.pdf).

<sup>4</sup> Alvillar M, Quinlan J, Rush CH, Dudley D. Recommendations for Developing and Sustaining Community Health Workers. *J Health Care Poor Underserved*. 2011;22(3):745-750.

<sup>5</sup> Johnson D, Saavedra P, Sun E, Stageman A, Grovet D, Alfero C, et al. Community Health Workers and Medicaid Managed Care in New Mexico. *J Community Health*. 2012;37:563–571.

<sup>6</sup> National Community Health Worker Advocacy Survey: 2014 Preliminary Data Report for the United States and Territories [Internet]. Mel & Enid Zuckerman College of Public Health, Arizona Prevention Research Center. Tucson: University of Arizona; 2014. Available at: <http://azprc.arizona.edu/sites/default/files/pdf/12Nov14%20NATIONAL.pdf>.

<sup>7</sup> American Public Health Association. Community Health Workers to Increase Health Access and to Reduce Health Inequities [Internet]. Washington, DC: APHA; 2009 Nov. Available at: <http://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/09/14/19/support-for-community-health-workers-to-increase-health-access-and-to-reduce-health-inequities>.

<sup>8</sup> California Health Workforce Alliance. Taking Innovation to Scale: Community Health Workers, Promotoras and the Triple Aim [Internet]. 2013 Dec. Available at: [http://www.chhs.ca.gov/PRI/Taking%20Innovation%20to%20Scale%20-%20CHWs,%20Promotores%20and%20the%20Triple%20Aim%20-%20CHWA%20Report%2012-22-13%20\(1\).pdf](http://www.chhs.ca.gov/PRI/Taking%20Innovation%20to%20Scale%20-%20CHWs,%20Promotores%20and%20the%20Triple%20Aim%20-%20CHWA%20Report%2012-22-13%20(1).pdf).

<sup>9</sup> HRSA, Bureau of Health Professions, Community Health Worker National Workforce Study, March 2007

## PART III: Case Studies –Relational Elements That May Influence Integration

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In Part II, we explored the various categories of integration used by the CHW programs in our database, and examined their relationship with what we characterize as structural program elements, including funding, leadership, intervention site and hiring criteria. While these elements tell us something about how various types of integrated CHW programs can be organized and financed, they do not explain the nature or quality of such integration.

In this section, we examine “direct hire”, “community partner”, and “informational resource” integration in greater depth to understand the nature of the interactions between CHWs and the health system. Here, through the presentation of three case studies of CHW programs, we explore those elements that foster good relationships and communication between CHWs and the health system counterparts with which they are integrating at various levels. We also examine what elements allow for CHWs to maintain their autonomy and unique identity in conducting their work alongside, in partnership with, or as a resource to, the health system.

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### Methods

To better understand the nature of various types of CHW-health system integration, we explored the characteristics that were repeatedly mentioned in our interviews as critical to the quality of relationships. These domains were viewed by informants as contributing to integration quality, while at the same time preserving the unique role of the CHW. The three relational domains were as follows:

1. **Communications about Patient Care:** What programmatic mechanisms impact communication between CHWs and the health system about patient care? Can CHWs easily inform other providers about patient needs? Are there established communication channels?
2. **Sharing of Provider Expertise:** What programmatic mechanisms impact the transfer of expertise between CHWs and the health system? Do CHWs have opportunities to strategize with the health team about a patient’s care and give input? Do other providers seek CHW expertise?
3. **Level of Autonomy:** What level of autonomy do CHWs have in conducting their work? What level of supervision do they have by the health team? Do CHWs merely follow instructions from other providers, or do they employ critical thinking in the delivery of program services?

We selected three case studies from our database (*see database description in [Part II](#)*) that are diverse in structural elements, and exhibit various relational elements that impact integration. We interviewed the leaders of these programs to gain insight into their model, the rationale for using a CHW workforce, and the program elements that foster communication, transfer of expertise and CHW autonomy.

These case studies are not meant to describe preferred or even common methods of integration, rather, they are meant to serve as examples of alternative ways that CHWs are, or are not, interacting with health systems. We have selected one case study each for the “direct hire”, “community partner” and “informational resource” integration types:

- (1) Direct Hire Integration: IMPaCT / Penn Center for Community Health Workers

- (2) Community Partner Integration: Salud Para Todos
- (3) Informational Resource Integration: Women- Inspired Neighborhood (WIN) Network

We do not present a case study for any of the “independent” programs from our database. While many programs that we have classified as “independent” are innovative and lead to good outcomes for patients, because they remain unconnected to the healthcare system (beyond simply fielding referrals from, or referring patients to, health care providers), these programs are not generally informative in terms of understanding how CHWs integrate with the broader health system. However, we want to acknowledge the continuing importance of such programs, as certain functions performed by CHWs may not be suitable for health system integration.

### Case Study 1: “Direct Hire” Integration

**IMPACT/Penn Center for Community Health Workers (Philadelphia, PA).** This model shows how a large health system has incorporated CHWs within the health team to improve patient experiences.

**Intervention Description:** The Individualized Management for Patient-Centered Targets (IMPACT) model employs CHWs to provide tailored, patient-centered support to high-risk patients with chronic disease to help them achieve individualized health goals.<sup>1</sup> In the IMPACT system, CHWs work with patients at the University of Pennsylvania Health System (U. Penn) to create individualized action plans for achieving patients’ stated goals for recovery. CHWs then provide patient-centered care in three main areas:

1. *Helping people navigate the healthcare system:* CHWs connect with patients upon hospital admission and support them at discharge, making sure they understand discharge instructions and prescriptions. CHWs work hard to establish connections with primary care by helping patients connect to a primary care physician (PCP) within two weeks of discharge. CHWs will help patients with transportation to a PCP appointment or even attend appointments, if requested.
2. *Connecting people to resources:* To achieve health goals, patients may benefit from the support of community-based services that can address their needs. CHWs connect clients to a range of social support services, including: patient support groups, housing and employment services and legal resources.
3. *Providing support:* CHWs provide emotional support to help patients manage chronic disease and achieve health goals. For example, IMPACT CHWs might exercise with patients at the local YMCA, or accompany patients to a smoking cessation class. CHWs also work with patients to their build capacity to manage their condition. For example, CHWs might participate in a three-way call to an insurance provider to clarify prescription drug coverage, or coach patients in scheduling PCP appointments.

**Patient Inclusion Criteria:** The program targets high-risk, low-income patients in the five zip codes immediately surrounding the health system. In these zip codes, more than 30% of the residents live below the federal poverty level and residents here account for 35% of all readmissions to the hospital system. CHWs identify clients due to a recent hospitalization or through one of the U. Penn’s primary care clinics. Clients must be over 18 years old and must either have been seen at the primary care clinic for two or more chronic conditions or have been admitted to the hospital.

**Rationale for Using a CHW Workforce:** *The CHW workforce can better address poor patient experience.* In 2010, U. Penn researchers began a four-year process to build the IMPACT model. The model was



designed based on 115 in-depth qualitative interviews and over 1,000 patient surveys that asked patients how U. Penn can improve patient care. Data indicated that patients feel disconnected from physicians and nurses: while patients reported confidence in diagnoses and treatment, patients were less confident that providers at U. Penn could relate to their daily struggles and the underlying determinants of their health. Survey and interview data suggested that employing CHWs would greatly improve patient care.

**CHW Hiring Criteria/Trainings:** CHWs are full-time, salaried employees of U. Penn. While an individual with a high-school diploma/GED is preferred, the program leadership prioritizes people who are familiar with the neighborhoods near U. Penn and individuals who are also familiar with the community resources available. CHWs take a month-long, college-accredited training program developed by IMPaCT designed to give CHWs the skills necessary to address barriers reported by patients. Supervisors are also trained on the CHW model. Trainings ensure a base level of understanding between providers of the role of the CHW within the care team.

**Program Elements that Enhance Integration:** Within the IMPaCT model, communication channels are constructed so that CHWs can communicate freely with other health team providers. CHWs attend clinical rounds at the hospital or daily “huddles” at clinics and participate in appointments and calls between providers and patients. These mechanisms ensure a bidirectional flow of information between CHWs and other providers. Within these CHW-provider interactions, CHWs working at U. Penn have opportunities to strategize with the broader health team about patient’s care and lend their expertise. Another important element of the IMPaCT model is that CHWs have a forum to share “best practices” with other CHWs and other health team members; where one CHW on the team has been successful in addressing patient needs in the community, that CHW will give guidance to others on ways to achieve similar results.

**CHW Autonomy:** CHWs at U. Penn have autonomy to create individualized action plans for patients, address patients’ psychosocial needs, and make referrals to a range of community agencies. However, CHWs are supervised and managed by other members of the care team (typically social workers) who direct patient care. While CHWs support patients in following discharge instructions and achieving health goals, other members of the care team evaluate patient needs and develop action plans.

**Evaluation:** Evaluations of this model show success. A randomized control trial found that the IMPaCT program improved both patient experiences and health outcomes, while reducing repeat hospital readmissions.<sup>2</sup> IMPaCT has been adopted by U. Penn as part of routine care for over 3,000 high-risk patients.

IMPaCT -- STRUCTURAL ELEMENTS	
<b>Funding Source</b>	<ul style="list-style-type: none"> <li>• Health System</li> </ul>
<b>Leading Organization</b>	<ul style="list-style-type: none"> <li>• Health System</li> </ul>
<b>Primary Site of Intervention</b>	<ul style="list-style-type: none"> <li>• Clinic</li> <li>• Hospital</li> </ul>
<b>CHW Hiring Criteria</b>	<ul style="list-style-type: none"> <li>• Educational Level, Training, Community Membership</li> </ul>
IMPaCT -- RELATIONAL ELEMENTS	
<b>Communications about Patient Care</b>	<ul style="list-style-type: none"> <li>• Established criteria for communicating with providers</li> <li>• CHW participation in appointments and calls between providers and patients</li> <li>• Attending team meetings and/or clinical rounds</li> </ul>
<b>Sharing of Provider Expertise</b>	<ul style="list-style-type: none"> <li>• Opportunities to strategize with health team about patient’s care</li> <li>• Forum to share “best practices” between CHWs and other providers</li> </ul>

<b>Level of Autonomy</b>	<ul style="list-style-type: none"> <li>• CHWs provide tailored services for each patient</li> <li>• CHWs seek out new community resources for patients</li> <li>• CHWs have opportunities to strategize with health team about patient's care</li> <li>• CHWs supervised by another team member</li> </ul>
<b>Other Enabling Mechanisms</b>	<ul style="list-style-type: none"> <li>• Common program administration</li> <li>• Supervisors and other members of the care team trained on the CHW model</li> <li>• Program-based training for CHWs</li> </ul>

## Case Study 2: "Community Partner" Integration

**Salud Para Todos ("Health for All") (Yuma County, AZ).** This model shows how promotoras working for a community-based organization can partner with promotoras working in health clinics to enhance patient care.

**Intervention Description:** Under this model, promotores work to help Mexican farm workers navigate the health care system and obtain high-quality preventive and primary care services. Promotores work at two levels in a partnership between a health clinic system (Sunset Community Health Center) and a community-based organization (Campesinos Sin Fronteras):

1. *Health Clinics.* Sunset Community Health Center ("Sunset") operates four community-based health clinics. Promotores employed by Sunset work with patients before, during and after visits to ensure patients understand their diagnoses and treatment. During one-on-one counselling sessions, promotores explain causes and risk factors of disease, review medication instructions and the importance of adherence, and discuss treatment options. Promotores prepare for these counselling sessions by working with other physicians and nurses on the team. Promotores may also accompany patients to doctor visits, serving a translator function.<sup>ii</sup>
2. *Community Settings.* Campesinos Sin Fronteras is a nonprofit, community-based organization serving migrant and seasonal farm workers and other low-income Hispanic populations living in Yuma County, AZ. Promotores working for Campesinos Sin Fronteras meet with Salud Para Todos participants one-on-one to assess their needs, connect them to social services and engage them in the health education class and support groups led by the program. Promotores hold health education classes for farm workers and their families at a community center, focusing discussion on nutrition and healthy behaviors. Finally, promotores run support groups for farm workers with particular health concerns, such as diabetes or depression.

**Patient Inclusion Criteria/Trainings:** Participants are enrolled in Salud Para Todos services when they seek social services at Campesinos Sin Fronteras or when they seek medical services at one of the Sunset Community Health Center clinics. Participants are also recruited via community outreach through a number of strategies, including work sites visits, health fair participation, connections to other community-based organizations, and various other advertising efforts.

**Rationale for Using a CHW Workforce:** *Promotores can address the language and cultural barriers that frequently prevent Mexican immigrants from accessing high-quality care.* Low English proficiency, unfamiliarity of the U.S. health care system and lack of health insurance are common challenges

<sup>ii</sup> Note that this model exhibits "direct hire" integration as well, as promotores work as part of the health team at the Sunset clinics. For the purposes of this case study, we focus on the "community partner" integration between Sunset and Campesinos Sin Fronteras.

Mexican immigrants face in navigating the health system and obtaining high-quality care; these barriers may lead to more chronic health problems. Salud Para Todos grew out of growing awareness among leaders at Campesinos Sin Fronteras and Sunset Community Health Center that local migrant and seasonal farm workers (who are primarily from Mexico) needed help overcoming these barriers to good health. Both organizations had worked together on previous initiatives to address patient and community health, and together they developed the Salud Para Todos program concept.

**CHW Hiring Criteria:** For this intervention to succeed, it is important for all staff to be familiar with the culture and challenges facing Mexican farm workers. All promotores working for Sunset Community Health Center or Campesinos Sin Fronteras must have been farm workers or children of farm workers. All promotores undergo training designed to: (i) teach strategies for addressing barriers to care and eliciting patient's perspectives on illness/treatment; and (ii) improve understanding of the ways Hispanic culture may impact health (for example, training in Hispanic health beliefs). All staff working at the Sunset Community Health Centers (including physicians, nurses and other clinical staff and all administrative employees) participate in a 4-hour cultural competency workshop led by promotores to enhance understanding of Hispanic culture and how it may impact patient health.

**Program Elements that Enhance Integration:** Promotores from both organizations work together on an ongoing basis. When participants enroll in the program through Sunset, Sunset promotores link participants with the services of Campesinos Sin Fronteras promotores, and vice versa. Promotores from each partner organization communicate frequently to address obstacles that individual patients are facing, for example transportation or housing needs. To facilitate communication, Salud Para Todos operates a shared database of all participants; every clinical or community interaction with participants is recorded.

**CHW Autonomy:** Promotores have significant autonomy to evaluate patient needs, develop action plans and revise their activities to respond to sudden or shifting patient circumstances.

**Evaluation:** A preliminary review of the program found that Salud Para Todos led to more physical activity, better dietary habits, and higher satisfaction among farm workers; the program also led to enhanced cultural competence among clinical staff.<sup>3,4</sup> The Agency for Health Care Research and Quality Innovations Exchange used evaluation findings to qualify Salud Para Todos as an innovative and effective model for community-clinic collaboration.

Salud Para Todos -- STRUCTURAL ELEMENTS	
<b>Funding Source</b>	<ul style="list-style-type: none"> <li>Federal Health/Social Agency (U.S. Dept. of Health and Human Services, Office of Minority Health)</li> </ul>
<b>Leading Organization</b>	<ul style="list-style-type: none"> <li>Health System</li> <li>Community Organization</li> </ul>
<b>Primary Site of Intervention</b>	<ul style="list-style-type: none"> <li>Clinic</li> <li>Other Community Setting</li> </ul>
<b>CHW Hiring Criteria</b>	<ul style="list-style-type: none"> <li>Community membership</li> <li>Training</li> <li>Language skills</li> </ul>
Salud Para Todos -- RELATIONAL ELEMENTS	
<b>Communications about Patient Care</b>	<ul style="list-style-type: none"> <li>Shared patient database or EMR</li> <li>CHW participation in appointments and calls between providers and patients</li> <li>Frequent supervision or interactions between CHWs and other providers</li> <li>Established criteria for communicating with providers</li> </ul>

<b>Sharing of Provider Expertise</b>	<ul style="list-style-type: none"> <li>• CHWs train healthcare providers</li> <li>• CHWs serve as educational resource to healthcare providers</li> <li>• CHWs help build relationships between provider and patient</li> </ul>
<b>Level of Autonomy</b>	<ul style="list-style-type: none"> <li>• CHWs evaluate patient needs</li> <li>• CHWs provide tailored services for each patient; offer one-on-one mentoring</li> <li>• CHWs respond to sudden/shifting patient needs</li> <li>• CHWs develop action plan</li> <li>• CHWs seek out new community resources for patients</li> </ul>
<b>Other Enabling Mechanisms</b>	<ul style="list-style-type: none"> <li>• Supervisors and other members of the care team trained on the CHW model</li> <li>• Program-based training for CHWs</li> <li>• Health providers trained to understand the culture and challenges impacting patients</li> </ul>

### Case Study 3: “Informational Resource” Integration

**Women- Inspired Neighborhood (WIN) Network (Detroit, MI).** This model shows how a community-based organization uses CHWs to address unmet care needs among community members in part by educating health professionals on the social determinants that impact patient health.

**Intervention Description:** The Women-Inspired Neighborhood (WIN) Network is uses CHWs to connect women who are pregnant, or may want to plan a healthy pregnancy, with support systems, resources, and information.<sup>5</sup> In the program, CHWs are referred to as Community Neighborhood Navigators (CNNs). Since the program started in January 2012, the CNNs’ role has been to support participants in having healthy pregnancies and babies through a range of activities, including: (1) offering home visiting and one-on-one mentoring for expectant mothers to help guide them through pregnancy and prepare for the future; (2) facilitating group activity sessions on topics related to preconception health, including stress management, goal setting, healthy eating, managing healthcare, caring for family and infants, exercising, and family planning; (3) connecting participants with local resources to meet their basic needs, including supporting women experiencing domestic violence or child protective service cases; and (4) enabling women to meet other women who have successfully gone through pregnancy and birth. The program is designed to give every participant at least 2 home visits per month, with a goal of constant communication as needed. Each CNN has a caseload of 36, though the number can increase when enrollment is high. Over time, the CNNs’ role has evolved to include insurance outreach and enrollment, including informing people about their options under the Affordable Care Act.

An additional objective of the WIN Network is to provide educational sessions to 500 physicians, nurses, social workers, and other healthcare professionals in Detroit’s major health systems. These sessions intend to increase awareness among local healthcare professionals of the social determinants of health related to infant mortality, and the local resources available for referrals for their patients. By informing healthcare professionals about the many challenges patients face outside of the doctor’s office, the WIN Network aims to improve the ability of the healthcare system to address the health and other needs of low-income women of child-bearing age in Detroit. In the future, the WIN Network plans to implement a prenatal care group with clinicians in women’s health services, in which CHWs would co-facilitate and assist the groups.

**Patient Inclusion Criteria:** The WIN Network serves women aged 18-34 who either are pregnant, or want to live healthier lifestyles and may want to plan a healthy pregnancy. The program targets women with prior pregnancies (because other programming exists for first-time pregnant women in Detroit). The population is largely African American and English-speaking, and affiliated with three specific geographic communities. The program serves women until their babies turn one.

**Rationale for Using a CHW Workforce:** CHWs connect community members to resources and address unmet care needs. The WIN Network was developed when the CEOs of four major health systems in the region (Detroit Medical Center, Henry Ford Health System, St. John Providence Health System, and Oakwood Healthcare System) came together to discuss infant mortality in Detroit and the unmet needs of women in the area. The health systems formed the *Detroit Regional Infant Mortality Reduction Task Force*, which discovered that over 100 programs existed in Detroit to address infant mortality – both within health systems and within community settings – but that most programs were underutilized. The Task Force determined that there was a need for a mechanism to connect women of child-bearing age to these many resources and that CHWs would be the appropriate providers to bridge the gap between existing resources and community needs. The WIN Network is not designed to duplicate any existing efforts in the region, but to facilitate better coordination among agencies/ programs so that women receive the care and support they need to achieve healthier pregnancies. While originally conceptualized by four of the major health systems in Detroit, the program is not operated by a health system, and runs as an independent community organization.

**CHW Hiring Criteria/Trainings:** CHWs hired by the WIN Network are required to have a firm knowledge base about the community; it is not required that CHWs currently live in the Detroit communities targeted by the program, but having grown up there or lived there at some point is important. In addition, the program requires its employees to have had some previous experience working as a CHW. Finally, there is a minimum education requirement of either high school or GED completion. CHWs are paid an hourly rate, equating to an annual salary of \$32,000-\$34,000. Funding for these CHW positions is largely from private foundations, though the participating health systems contributed some temporary funds at the start of the project in 2011.<sup>6</sup>

**Program Elements that Enhance Integration:** CHWs in the WIN Network serve as an informational resource to the health system, increasing awareness among local healthcare professionals of the problem of infant mortality in Detroit with the goal of improving the ability of the healthcare system to address needs of low-income women of child-bearing age. In this capacity, CHWs do not participate in communications about individual patient care. Rather, CHWs work to bridge relationships between providers and the community.

**CHW Autonomy:** In this model, the primary work of the CHW – home visiting and one-on-one mentoring for expectant mothers, and group activity sessions in the community – is not connected to the health team. While supervised by a social worker, CHWs have significant autonomy to evaluate patient needs, develop action plans and revise their activities to respond to sudden or shifting patient circumstances.

WIN Network -- STRUCTURAL ELEMENTS	
Funding Source	Foundation
Leading Organization	Community-Based Organization
Primary Site of Intervention	Patient Home or Other Community Setting
CHW Hiring Criteria	Educational Level, Community Membership
WIN Network -- RELATIONAL ELEMENTS	
Communications about Patient Care	N/A
Sharing of Provider Expertise	<ul style="list-style-type: none"> <li>CHWs serve as educational resource to healthcare providers</li> <li>CHWs help build relationships between provider and patient</li> </ul>
Level of Autonomy	<ul style="list-style-type: none"> <li>CHWs evaluate patient needs</li> <li>CHWs provide tailored services for each patient</li> </ul>

- CHWs respond to sudden/shifting patient needs

The following table summarizes various relational elements from the above case studies and other programs in our database that influence the quality of integration.

**Table 1: Summary of relational elements that may contribute toward the quality of integration**

Relational Domain	Enabling Mechanisms and Indicators
<b>Communications about Patient Care</b>	<i>Enabling Mechanisms</i> <ul style="list-style-type: none"> <li>• Established criteria for communicating with providers</li> <li>• Attending team meetings and/or clinical rounds</li> <li>• Shared patient database or EMR</li> <li>• CHW participation in appointments and calls between providers and patients</li> <li>• Frequent supervision or interactions between CHWs and other providers</li> </ul>
<b>Sharing of Provider Expertise</b>	<i>Enabling Mechanisms</i> <ul style="list-style-type: none"> <li>• Opportunities to strategize with health team about patient's care</li> <li>• CHWs train healthcare providers</li> <li>• CHWs serve as educational resource to healthcare providers</li> <li>• CHWs help build relationships between provider and patient</li> <li>• Communication between CHWs and providers about patients</li> <li>• Other providers seek CHW knowledge of the patient community</li> <li>• Forum to share "best practices" between CHWs and other providers</li> </ul>
<b>Level of Autonomy</b>	<i>Indicators of Autonomy</i> <ul style="list-style-type: none"> <li>• CHWs evaluate patient needs</li> <li>• CHWs provide tailored services for each patient; offer one-on-one mentoring</li> <li>• CHWs respond to sudden/shifting patient needs</li> <li>• CHWs develop action plan</li> <li>• CHWs seek out new community resources for patients</li> <li>• CHWs have opportunities to strategize with health team about patient's care</li> <li>• Other health practitioners determine patient needs and CHWs work to fill those needs</li> <li>• CHWs deliver a structured curriculum to patients or community</li> <li>• CHWs supervised by another team member</li> <li>• CHWs refer patients to a defined set of community resources</li> </ul>
<b>Other Enabling Mechanisms</b>	<ul style="list-style-type: none"> <li>• Common program administration</li> <li>• Supervisors and other members of the care team trained on the CHW model</li> <li>• Program-based training for CHWs</li> <li>• Health providers trained to understand the culture and challenges impacting patients</li> </ul>

## DISCUSSION

As these case studies demonstrate, the CHW concept can be preserved within each type of integration. The IMPaCT model is an example of how a health system has carefully designed a program to employ a CHW workforce within their health team to address patient experience, improve health outcomes and reduce unnecessary health expenditures. IMPaCT has several elements that enhance the integration between CHWs and other members of the health team, including by involving CHWs in clinical meetings where CHWs are invited to strategize about patient care and by training supervisors on the important role of CHWs within the U. Penn system.

Salud Para Todos is an innovative example of how community-based and clinic-based promotores can partner to enhance patient care. One element that helps the program succeed is that the community-



based promotores work closely with their clinical counterparts; thus, the CHW has a partner “on the inside” who is similarly trained and understands the unique and important role of CHWs in advancing patient health. Another key relational element that enhances integration is efforts to get the clinical care team to endorse the promotores model through cultural competency workshops. These workshops help to build the credibility of the CHW as an important partner. Finally, use of a shared electronic health record is a critical element that fosters collaboration and communication between the health clinics and their community-based promotores partners.

The WIN Network model is a good example of how a community-based organization can serve as an informational resource to the health system. By constructing a model where CHWs educate physicians, nurses, and other health professionals on social determinants, the WIN Network recognizes the unique ability CHWs have in helping providers understand the difficult circumstances patients face outside of the clinical setting. These efforts improve the capacity of the health system to address patient needs.

The three case studies presented in this report show how established channels of communication between CHWs and other providers, suitable opportunities for CHWs to share their expertise, and the ability for CHWs to maintain autonomy in conducting their work are elements that strengthen the quality of CHW-health system integration. Our observations on these relational elements is supported by other research which shows the importance of bidirectional communications between CHWs and the larger health team, including involving CHWs within health team meetings/rounds, using a shared electronic medical record, training of both CHWs and other health provider staff, and relationship development between CHWs and other staff.<sup>7</sup> While not every CHW program has the goal of integrating with the health system, where integration is appropriate, the relational elements described in the case studies and in [Table 1](#) facilitate CHWs in working to their highest and best use.

As the Affordable Care Act and other drivers of health delivery system change continue to provide opportunities for CHW-health system interactions and integration, it is important for decision-makers to consider how these relational elements influence CHW competency development. [Part IV](#) examines these issues in greater detail.

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<sup>1</sup> Penn Center for Community Health Workers [Internet]. Philadelphia: Penn Center for Community Health Workers; 2015. Available at: <http://chw.upenn.edu/impact>.

<sup>2</sup> Kangovi S, et al. Patient-Centered Community Health Worker Intervention to Improve Posthospital Outcomes: A Randomized Clinical Trial. *JAMA Intern Med*. 2014;174(4):535-543.

<sup>3</sup> Agency for Healthcare Research and Quality. Health Clinics and Community Organization Coordinate Outreach Workers To Educate and Support Farm Workers, Leading to Healthier Behaviors and Higher Satisfaction [Internet]. Rockville: AHRQ; 2014 Aug 27. Available at: <https://innovations.ahrq.gov/profiles/health-clinics-and-community-organization-coordinate-outreach-workers-educate-and-support>.

<sup>4</sup> Ingram M, Torres E, Redondo F, Bradford G, Wang C, O'Toole M. The impact of promotores on social support and glycemic control. *The Diabetes Educator*. 2007; 33(Suppl. 6):172S–178S.

<sup>5</sup> Women-Inspired Neighborhood Network [Internet]. Detroit: WIN Network; 2015. Available at: <http://www.winnetworkdetroit.org/>.

<sup>6</sup> Robert Wood Johnson Foundation. Supporting the Detroit Regional Infant Mortality Reduction Task Force in overcoming poor pregnancy outcomes for at-risk women [Internet]. Washington, DC: RWJF; 2011. Available at: <http://www.rwjf.org/en/library/grants/2011/06/supporting-the-detroit-regional-infant-mortality-reduction-task-.html>.

<sup>7</sup> Wennerstrom A, Bui T, Harden-Barrios J, Price-Haywood EG. Integrating Community Health Workers into a Patient-Centered Medical Home to Support Disease Self-Management Among Vietnamese Americans: Lessons Learned. *Health Promotion Practice*. 2015;16(1):72-83.

## PART IV: The Question of Competencies

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As CHWs are thrust into health reform discussions, health care provider organizations and payers are eager to standardize it in ways that allow for appropriate CHW recruitment and performance assessment, especially with regard to CHWs' ability to address the social determinants of health among the most disadvantaged populations.<sup>1</sup> In response, states have been moving ahead with various educational and certification systems with varied interpretations of the CHW's competencies.<sup>2</sup> CHWs, meanwhile, have been eager to get ahead of this wave of standardization and to establish their own standards.

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### The CHW Identity

Competencies focus on what CHWs are expected to be able to do, but they also determine curriculum design and serve as an evaluation tool.<sup>3,4,5,6</sup> The question, therefore, of who defines core competencies is a critical one, and one that is a focal point for CHW leadership activity aimed at CHW self-determination. As CHWs have become more organized through state/regional associations, an annual CHW national conference<sup>7</sup>, and through the CHW section of APHA, an effort to achieve a national consensus among CHWs themselves on competencies is underway<sup>8</sup>.

CHWs, as an emerging occupation, must establish two things: internal consensus, and external legitimacy. Consensus-building is something CHWs themselves can figure out, and they are indeed doing that through the C3 project. External legitimacy, however, is not something CHWs can build alone, and yet it is a critical factor in implementing integrated models. In these models, CHWs must work alongside established professionals who, if they do not respect the value of CHWs, may not 'accept' them as members of inter-professional teams and may not value the CHW's contribution.

We have suggested that one way to look at integrated models is in terms of structural and relational elements. Our database research and case studies, described Parts III and IV above, suggest that structural elements **constrain** the full adoption of the CHW concept, and that relational elements **facilitate** the full adoption of the CHW concept. Those engaged in CHW program planning therefore need to ensure that the facilitating factors must outweigh the constraining factors – otherwise what is the benefit of using community health workers (instead of another kind of lay health worker)?

In fully integrated team based models it is likely be particularly important to build a strong CHW 'identity' in order to maintain credibility of a role which differs in some fundamental respects from the traditional health professions. For example, a support structure for the CHWs may be needed, by having CHWs supervised by more experienced CHWs, or at least by a supervisor who is sensitized to the tendency of a health delivery organization to shape everything to the needs of the health system, rather than the needs of the community.

This leads to the question of what is it that establishes the CHW as different to other health occupations, and what, therefore, creates external legitimacy for the CHW? The first place to look is of course the competencies that describe what a CHW must be capable of doing.



### Current Competency Lists

[Table 1](#) summarizes 9 well-known sets of competencies produced by states and other regional bodies. We have aligned what we interpret to be similar competencies horizontally.

Despite the wide variation in roles and functions we observe in CHW programs, in analyzing this table there appears to be surprisingly little variation in competency requirements. Much of the variation is a function simply of different grouping or ordering of broadly similar role categories, mostly with common roots in the seven core CHW activity areas developed in the landmark 1998 National Community Health Advisor Study ([Table 2](#)).

**Table 1: Competences Crosswalk**

Minnesota <sup>1</sup>	Michigan <sup>2</sup>	Boston <sup>3</sup>	Massachusetts <sup>4</sup>	City College of San Francisco <sup>5</sup>	Texas <sup>6</sup>	New York <sup>7</sup>	New Mexico <sup>8</sup>	Ohio <sup>9</sup>
1) Role, Advocacy and Outreach	1) Advocacy & Outreach	1) Outreach Methods and Strategies	1) Outreach Methods & Strategies	6) Advocacy Skills	5) Advocacy Skills	6) Advocacy Skills	6) Advocacy Skills 8) Community Health Outreach Skills	4) Individual and community advocacy
2) Organization and Resources: Community and Personal Strategies	2) Community & Personal Strategies	2) Client and Community Assessment	2) Individual & Community Assessment	8) Organizational Skills	7) Organizational Skills	8) Organizational Skills	9) Community Knowledge & Assessment	
3) Teaching and Capacity Building	3) Teaching & Capacity Building	5) Health Education for Behavior Change 8) Community Capacity Building	5) Education to Promote Healthy Behavior Change 8) Advocacy and Community Capacity Building	7) Teaching Skills 3) Knowledge base about the community, health issues, and available services 5) Capacity-building Skills	6) Teaching skills 4) Capacity-Building Skills	7) Technical [teaching] skills 5) Capacity-Building Skills 3) Informal counseling	7) Technical Teaching Skills 5) Capacity Building Skills	2) Community resources
4) Legal and Ethical Responsibilities	4) Legal & Ethical Responsibilities		10) Professional Skills & Conduct					
5) Coordination, Documentation and Reporting	5) Coordination, Documentation and Reporting	6) Support, Advocate and Coordinate Care for Clients 9) Writing and Technical Communication Skills	6) Care Coordination and System Navigation 9) Documentation	4) Service Coordination Skills	3) Service Coordination Skills	4) Service Coordination Skills	4) Service Coordination Skills	6) Service skills and responsibilities
6) Communication and Cultural Competence	6) Communication Skills & Cultural Competence	3) Effective Communication 4) Culturally Based Communication and Care	3) Effective Communication 4) Cultural Responsiveness & Mediation	1) Communication Skills 2) Interpersonal Skills	1) Communication skills 2) Interpersonal skills	1) Communication skills 2) Interpersonal skills	1) Effective Communication Skills 2) Interpersonal Skills	3) Communication skills
7) Health Promotion Competencies	7) Health Promotion				8) Knowledge base on specific health issues		3) Health Coaching Skills	1) Health care 5) Health education.
8) Healthy Lifestyles		7) Apply Public Health Concepts and Approaches	7) Use of Public Health Concepts & Approaches					

Sources: 1. Minnesota Community Health Worker Alliance. (2013). Minnesota CHW Curriculum. Available at: <http://mnchwalliance.org/wp-content/uploads/2013/05/EducationCurriculum.pdf>.  
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 9. LAW Writer® Ohio Laws and Rules. (2009). 4723-26-13 Standard curriculum for community health worker training programs. Available at: <http://codes.ohio.gov/oac/4723-26-13>.

**Table 2: National Community Health Advisor Study Core CHW Activity Areas<sup>3</sup>**

<b>National Community Health Advisor Study Activity Areas</b>	
1.	Bridging cultural mediation between communities & health and social service systems
2.	Providing culturally appropriate health education & information
3.	Assuring people get services they need
4.	Providing informal counseling & social support
5.	Advocating for individual & community needs
6.	Providing direct service, such as basic first aid and administering health screening tests
7.	Building individual & community capacity

We also observe a lack of precision in these competency lists, and little clarity about what, if anything, makes CHWs ‘special’ among health occupations. In effect, there is no one thing in these lists that CHWs do that no other occupation can do.

This may not be surprising – after all, the purpose of each competency is to set a standard for an element of CHW training and practice, rather than to clearly differentiate the CHW from everyone else. On the other hand, we know from our review of the literature, as well as from the analysis of our data base and the interviews conducted, that the design and the very purpose of programs using CHWs is different from standard health care program design.

We therefore asked how these competencies could be more specifically conceptualized through the logic of program design that uses CHWs to achieve something that is unique to CHWs. This alternative analysis examines we call “modes of impact”, to see whether and how this might alter the way we think about competencies.

### **Modes of Impact**

As we have argued above, from a workforce development perspective it is important to assess whether CHWs add something new and different to workforce capabilities, with through new roles, new knowledge or new skills. One way to isolate the particular contribution of the CHW to U.S. healthcare is to focus on the reasons that are commonly put forward for believing that CHWs can have an impact on people’s health. In effect, if we could better describe the rationale behind the use of CHWs, we may be able to better understand the key competencies need in CHWs, as well as the context within which CHW competencies contribute to better health care, including for the kinds of populations and communities where CHWs have the greatest impact. This approach might also help to answer the important question of how a successful CHW program should be designed, an area that remains largely unexplored in the current literature.

The evaluation literature suggests that what distinguishes CHWs from other health occupations are a set of mechanisms, or what we propose to call “modes of impact”, that are different that those used by the dominant ‘medical model’. Whereas the dominant model is based on diagnosis and treatment activity that has no integration with the community and environmental factors that impact patients’ health, the CHW model explicitly searches for that integration.

Based on the literature, on our review of CHW programs in our database and our interviews, we suggest that CHWs mode of impact is variously conceptualized as spanning four distinct categories: trust-building, empowerment, and social determinants. We define each below.

- **Outreach:** Outreach is used in two different descriptions of CHW activities. Firstly it refers to newly connecting community members to services, and secondly it refers to going out into the community to work with existing service recipients. Many of the skills, knowledge and abilities needed to perform these two activities are similar and involve being able to work comfortably in different community locations outside of the health clinic or hospital, and to move around these locations easily.
- **Trust-building:** Activities under this category reflect a belief that successful health care delivery requires the patient to be engaged in it. Patients will not take follow medical advice (such as taking medications) if they do not trust that it will work and be worth the side effects, costs and inconvenience it may bring. This category is linked to outreach in that visiting a patient at home is one way of building trust.
- **Empowerment:** Trust is only a first step to engaging patients in their health care. The patient must also have the capacity to do what they need to do. This involves a combination of knowledge building (e.g. health education or information), motivation (helping the patient to find the mental strength to engage), personal organization (helping that patient to schedule, remember and give priority to medical appointments) and assertiveness-building (helping the patient to respond to medical advice with a clear statement of any circumstances that may make the advice inappropriate).
- **Social Determinants:** Much of what contributes to good or bad health is located in the environment, community or family relationships. Solutions to some of these problems require resources or service from beyond healthcare (e.g. transport, housing, food), so connecting people to these services can be important for health.

While none of the above are unique to CHWs as an occupation, no other occupation takes this whole ‘alternative’ approach to impacting healthcare and knits it into a coherent philosophy of care. In all the CHW programs we reviewed, activities associated with these modes of impact were not incidental to their program, but in fact the program’s purpose.

This differentiation from other health occupations is critical for CHWs when they are actually placed in different types of programs, and it generates a need to develop an identity, and the need to communicate what they do to other professionals and occupations.

An additional consideration is that CHWs may require different skillsets depending on with whom they are working. The ‘traditional’ use of CHWs requires the skillsets for working directly with patients/clients or with communities (in community groups, for example). In the ‘new’ integrated models they must also work with the health system and its professional staff, arguably requiring them to develop additional skills.

To help articulate the CHW concept that builds on these modes of impact, we draw upon our case studies in [Part III](#) to suggest how these four modes of impact are operationalized as activities ([Table 3](#)).

As we observed in our analysis of these programs, CHWs have activities that span patients and their families, community level issues and, perhaps increasingly, they also have activities that result from their integration with health systems.

**Table 3: CHW Modes of Impact as Organizing Principles for Identifying Core Activities**

	Individuals	Communities	Health systems
Outreach	Engaging family members in care	Case-finding and recruitment ('seek and find')	Referrals/follow ups
	Home assessment		
Trust Building	Home assessment		Patient advocacy
	Engaging family members in care		
Empowerment	Translating and interpreting health information	Translation and interpretation of information	Developing health education curriculum
	Teaching health promotion and prevention behaviors	Preparation and dissemination of health education materials	Advocating for broader health system change
	Coaching on problem solving	Teaching health promotion and prevention behaviors (groups)	Relationship building with providers
	Patient navigation	Community organizing	Patient navigation
	Self-management education	Leading support groups	
	Developing/implementing patient goals and action plans	Promoting health literacy	
	Promoting treatment adherence		
	Coordinating referrals/follow-ups		
	Supportive Counselling		
Social Determinants	Supplies for the home (e.g. air filter)		
	Addressing basic needs (e.g. childcare, transportation, shelter)		
Corresponding Competencies	Existing competency 'lists'	Existing competency 'lists'	See following text

Given that some activities are conducted in more than one scenario (health education, for instance, can be delivered either to individuals or to community groups), there is not a simple correlation between CHW activities and the three types of relationships. However, if the three scenarios require different skillsets there may be a need for different competencies in order for the CHW to operate successfully at the different levels.

It is this third set of activities that may need to be more closely examined in the context of developing CHW competencies. CHW competencies largely evolved to address the requirements of CHWs in community-based organizations, i.e. , without the need for this third level. Now, with growing utilization of CHWs in health systems, they must also be able to conduct activities in the context of health care teams.

In reviewing Tables 1 and 2 again, competencies relating to the activities required in the context of integration are less well developed than those relating to patient and community level activities. Additional competencies relating to interactions with health systems that were not considered in these tables might include the following:

- A deep and clear understanding of the rationale behind the CHW contribution and the ability to explain it to others.

- The ability to speak the provider's language, operate in the provider's environment, and meet the provider's standards.
- Ethical conduct in a health setting (e.g. HIPAA)
- The ability to combine advocacy for the patient with empathy for the provider (high level negotiating, diplomacy and conflict resolution skills?)
- Leadership skills – in the health setting as a representative of the community, and in the community as a representative of the provider

## Conclusions

Recognition of the “modes of impact” that underlie the CHW concept may assist in the review of current lists of CHW competencies. It places the focus squarely on the reasons CHWs are being hired, and helps to categorize the activities that are necessary for these modes of impact. This, in turn, helps to identify additional competencies that may be emerging.

The analytic exercise also to visualize a set of activities that may be new and which may require additional competencies to those presented in Table 2. These are tentative categories, however, and certainly merit further review and discussion among CHWs, their employers and educators.

Regardless of the final set of modes of impact that are articulated by CHWs, if they provide a coherent description of what CHWs need to be able to do, they may also help CHWs explain, and even defend, their role – a competency that may be increasingly important as more CHWs are hired by health systems.

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<sup>2</sup> Association of State and Territorial Health Officials. Community Health Workers [Internet]. Arlington: Association of State and Territorial Health Officials [cited 2015 Aug 13]. Available at: <http://www.astho.org/community-health-workers/>.

<sup>3</sup> Rosenthal L. A summary of the national community health adviser study: Weaving the future [Internet]. Tucson: University of Arizona; 1998. Available at: <http://crh.arizona.edu/sites/default/files/pdf/publications/CAHsummaryALL.pdf>.

<sup>4</sup> U.S. Department of Health and Human Services, Bureau of Health Professionals, Health Resources and Services Administration. Community Health Worker National Workforce Study [Internet]. Washington, DC: HRSA; 2007 May. Available at: <http://bhpr.hrsa.gov/healthworkforce/reports/chwstudy2007.pdf>.

<sup>5</sup> Anthony S, Gowler R, Hirsch G, Wilkinson G. Community health workers in Massachusetts: improving health care and public health [Internet]. Boston (MA): Massachusetts Department of Public Health; 2009 Dec [cited 2010 Mar 15]. Available from: [http://www.mass.gov/Eeohhs2/docs/dph/com\\_health/com\\_health\\_workers/legislature\\_report.pdf](http://www.mass.gov/Eeohhs2/docs/dph/com_health/com_health_workers/legislature_report.pdf).

<sup>6</sup> McCormick S, Glaubitz K, McIlvenna M, Mader E. Community health workers in Utah: An assessment of the role of CHWs in Utah and the national health care system [Internet]. Salt Lake City: Center for Public Policy & Administration, University of Utah; 2012. Available at: <http://health.utah.gov/disparities/data/CommunityHealthWorkersInUtah2012.pdf>.

<sup>7</sup> University of Southern Mississippi. 2015 CSHO Unity Conference [Internet]. Hattiesburg: University of Southern Mississippi; 2015. Available at: <http://www.usm.edu/health/2015-csho-unity-conference>.

<sup>8</sup> Community Resources, LLC. Community Health Worker Core Consensus (C3) Project [Internet]. San Antonio: Community Resources, LLC; (n.d.). Available at: <http://www.chrllc.net/id12.html>.

## PART V: Medicaid Financing of Community Health Workers:

### MEDICAID MLR RULE PROVIDES NEW INCENTIVES FOR MCOS & OPPORTUNITIES FOR COMMUNITY HEALTH WORKERS

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#### INTRODUCTION

In order to continue to enhance the CHW profession, securing financial stability is an important step. A recent proposed policy change in the Medicaid program may represent a new opportunity for better integrating CHWs into the healthcare system. The establishment of a minimum “medical loss ratio” for Medicaid Managed Care Organizations (MCOs), and the inclusion of “quality improvement activities” in the numerator of that ratio, may give MCOs added reason to include CHWs in their efforts to improve individual and community health.

This section explores recent and proposed Medicaid rule changes that may enhance the opportunities for inclusion of CHW programs and services within Medicaid and managed care, and, therefore, help to establish stable funding. While the potential for Medicaid financing does not solve every funding need for the full range of outreach, trust-building, empowerment and social determinant roles CHWs may engage in, it is a critical piece of the funding puzzle.

#### BACKGROUND

Despite their unique potential to generate positive health outcomes, programs that employ CHWs often lack adequate financing, and many CHWs receive poor or no reimbursement for their services.<sup>1,2,3</sup> The primary mechanism for funding CHW programs is through short-term sources, such as grants from foundations and government agencies.<sup>1,4</sup> The temporary nature of these funding sources cause instability, and lack of job security is a common challenge for CHWs.<sup>1</sup> Funding challenges both jeopardize programs that employ CHWs and may undermine the advancement of the CHW workforce.<sup>1</sup> The absence of permanent, stable funding for CHW services – such as reimbursement by public and private insurers – is a barrier to the expanded use of CHWs.<sup>1,5</sup>

Even though most CHW programs target services toward improving health among underserved populations, Medicaid has rarely provided reimbursement for CHW services.<sup>1,6</sup> Lack of Medicaid involvement greatly reduces patient access. Authors of one study stated: “Because of the lack of Medicaid reimbursement in most states, patients most in need have no access to CHW assistance”.<sup>7</sup>

One recent Medicaid policy change may open the door to reimbursement for a limited set of CHW services. Medicaid has historically only permitted physicians or other licensed practitioners to seek reimbursement for providing preventive services, leaving CHWs ineligible. In January 2014, the Centers for Medicare and Medicaid Services (CMS) made a regulatory change allowing state Medicaid programs to reimburse for preventive services provided by practitioners, such as CHWs, that fall outside of a state’s clinical licensure system, if the services are recommended by a licensed practitioner.<sup>8</sup> This important change would give flexibility to state Medicaid programs and MCOs to cover, and pay for, preventive services provided by CHWs. So far, this state option has not seen significant uptake, but many states are in the process of implementing the change.<sup>9</sup>

While the rule change establishes an opportunity for some CHWs to seek Medicaid reimbursement, many of the activities that CHWs conduct to promote health may not be discrete preventive services

that can be neatly claimed and reimbursed. Without further Medicaid policy changes, many health promotion activities provided by CHWs will remain outside of Medicaid reimbursement structures.

### **MINIMUM MEDICAL LOSS RATIO REQUIREMENT FOR MEDICAID MANAGED CARE ORGANIZATIONS: A NEW OPPORTUNITY FOR MCOs AND CHWs**

A newly proposed Medicaid provision establishing a minimum medical loss ratio, or MLR, for Medicaid MCOs may create incentives for MCOs to support CHWs in conducting health promotion activities, particularly those activities that would be difficult to bill and reimburse as discrete clinical services.

The “Medical Loss Ratio,” or MLR, is a ratio that has traditionally been used to reflect the percentage of an issuer’s health care premium dollars spent on medical claims:

$$\text{Traditional MLR} = [\text{medical claims}] / [\text{total premiums}]$$

For example, an issuer with \$100 million in premium revenue that spends \$79 million on medical claims would have an MLR of 79%.

MLR is generally conceived of as a measure of “value” for the policyholder. While it is recognized that insurers must spend some portion of their revenue on administrative costs and profits, the presumption behind setting a minimum MLR is that a large proportion of the premiums that an insurer receives should be spent on enrollee health.

### ***The MLR in the Affordable Care Act: A Federal Minimum for Private Plans***

Prior to the passage of the Affordable Care Act (ACA), many states had minimum MLR requirements and/or MLR reporting requirements applied to varying segments of the major medical coverage market (e.g. individual policies, all HMOs, or all group plans).<sup>10</sup> However, there was significant variation among states and from year to year, particularly in the individual insurance market.<sup>11</sup> To create more consistency in policy value across the country, the ACA established national minimum MLRs of 85% for the large group market and 80% for the small group and individual markets.<sup>12</sup> Insurers that do not meet these requirements in the aggregate must pay rebates to policyholders.<sup>13</sup>

The ACA definition of MLR differs from the traditional definition in two ways. First, taxes and certain fees and payments are excluded from the denominator.<sup>14</sup> Second – and of particular relevance to CHWs – activities that improve healthcare quality are counted in the MLR’s numerator.<sup>15</sup> As a result, under the ACA the MLR is calculated as follows:

$$\text{ACA MLR} = [\text{medical claims} + \text{quality improvement activities}] / [\text{premiums} - \text{federal and state taxes and fees}]$$

Under regulations issued by HHS based on recommendations from the National Association of Insurance Commissioners (NAIC).<sup>16</sup>, “quality improvement” (QI) activities must be designed to: (i) improve health quality; (ii) increase the likelihood of measurable improvements in desired health outcomes; (iii) target individual enrollees or segments of enrollees, unless there is no additional cost incurred by targeting a broader population; and (iv) be evidence-based.<sup>17</sup>



***The MLR in Medicaid: New Minimum MLR Extended to Medicaid Managed Care Organizations***

In June 2015, CMS proposed extending a national minimum MLR to Medicaid MCOs.<sup>18</sup> Under the proposed rule, states must set an MLR of *at least* 85% for Medicaid MCOs (though they may not set the MLR so high that reasonable administrative costs are not permitted).<sup>18</sup> The MLR numerator includes QI activities as defined under ACA regulations, along with additional Medicaid-specific expenses.<sup>18</sup> As discussed further below, many of the activities that the proposal offers as examples of QI activities are tasks currently or potentially conducted by CHWs.

Under the proposed rule, new MLR requirements would apply to MCO contracts beginning on or after January 2017.<sup>18</sup> MCOs that do not meet the MLR will not be required to issue rebates to the states that pay them; instead, states will take those failures into account when setting future rates.

As of 2011, 74% of all Medicaid beneficiaries were enrolled in some form of managed care, making the proposed rule relevant to over 42 million beneficiaries.<sup>19</sup> In addition, Medicaid MCO enrollment is continuing to grow, due to expanded Medicaid enrollment under the ACA as well as efforts to shift beneficiaries with more complex and costly health care needs (such as dual eligibles) into managed care.<sup>20</sup> Therefore, changes to the Medicaid managed care rules have an impact for a large and growing population of low-income beneficiaries nationwide.

***MLR QUALITY IMPROVEMENT IN MCOs & OPPORTUNITIES FOR CHWs***

The proposed change in the MLR definition in Medicaid is a meaningful incentive for Medicaid managed care plans and an important opportunity for CHWs.<sup>21</sup> Given that CHW programs often serve low-income populations and focus on reducing disparities, Medicaid MCOs should be particularly interested in integrating CHW services to improve enrollees' health.

Notably, the regulatory definition of QI activities allowable under MLR rules include many activities that could be appropriately offered by CHWs, as detailed in the chart below:

<b><i>QI activity allowed under MLR regulations:</i></b> <sup>22</sup>		<b><i>Potential CHW Activity?</i></b>
<b>(i) Activities primarily designed to improve health outcomes and reduce health disparities among specified populations</b>		
• Effective case management, care coordination, chronic disease management, and medication and care compliance initiatives including through the use of the medical homes model		<b>X</b>
• Identifying and addressing ethnic, cultural or racial disparities in effectiveness of identified best clinical practices and evidence based medicine		<b>X</b>
• Quality reporting and documentation of care in non-electronic format		<b>X</b>
• Health information technology to support these activities		
• Accreditation fees directly related to quality of care activities		
• Implementing ICD-10 code sets		
<b>(ii) Activities primarily designed to prevent hospital readmissions through a comprehensive program for hospital discharge</b>		
• Comprehensive discharge planning (for example, arranging and managing transitions from one setting to another, such as hospital discharge to home or to a rehabilitation center) in order to help assure appropriate care that will, in all likelihood, avoid readmission to the hospital		<b>X</b>
• Patient-centered education and counseling		<b>X</b>
• Personalized post-discharge reinforcement and counseling		<b>X</b>

<b>QI activity allowed under MLR regulations:<sup>22</sup></b>		<b>Potential CHW Activity?</b>
<ul style="list-style-type: none"> <li>Any quality reporting and related documentation in non-electronic form for activities to prevent hospital readmission</li> </ul>		<b>X</b>
<ul style="list-style-type: none"> <li>Health information technology to support these activities</li> </ul>		
<b>(iii) Activities primarily designed to improve patient safety, reduce medical errors, and lower infection and mortality rates</b>		
<ul style="list-style-type: none"> <li>The appropriate identification and use of best clinical practices to avoid harm</li> </ul>		<b>X</b>
<ul style="list-style-type: none"> <li>Activities to identify and encourage evidence-based medicine in addressing independently identified and documented clinical errors or safety concerns</li> </ul>		
<ul style="list-style-type: none"> <li>Activities to lower the risk of facility-acquired infections</li> </ul>		
<ul style="list-style-type: none"> <li>Prospective prescription drug Utilization Review aimed at identifying potential adverse drug interactions</li> </ul>		
<ul style="list-style-type: none"> <li>Any quality reporting and related documentation in non-electronic form for activities that improve patient safety and reduce medical errors</li> </ul>		
<ul style="list-style-type: none"> <li>Health information technology to support these activities</li> </ul>		
<b>(iv) Activities primarily designed to implement, promote, and increase wellness and health activities</b>		
<ul style="list-style-type: none"> <li>Wellness assessments</li> </ul>		<b>X</b>
<ul style="list-style-type: none"> <li>Wellness/lifestyle coaching programs designed to achieve specific and measurable improvements</li> </ul>		<b>X</b>
<ul style="list-style-type: none"> <li>Coaching programs designed to educate individuals on clinically effective methods for dealing with a specific chronic disease or condition</li> </ul>		<b>X</b>
<ul style="list-style-type: none"> <li>Public health education campaigns that are performed in conjunction with State or local health departments</li> </ul>		<b>X</b>
<ul style="list-style-type: none"> <li>Rewards, incentives, bonuses, reductions in copayments (excluding administration of such programs), that are not already reflected in premiums</li> </ul>		
<ul style="list-style-type: none"> <li>Any quality reporting and related documentation in non-electronic form for wellness and health promotion activities</li> </ul>		
<ul style="list-style-type: none"> <li>Coaching or education programs and health promotion activities designed to change member behavior and conditions (for example, smoking or obesity)</li> </ul>		<b>X</b>
<ul style="list-style-type: none"> <li>Health information technology to support these activities</li> </ul>		
<ul style="list-style-type: none"> <li>Enhance the use of health care data to improve quality, transparency, and outcomes and support meaningful use of health information technology</li> </ul>		

In addition, the proposed MLR change contains several exclusions from the list of permitted QI activities, which should be consistent with the use of CHWs. First, insurers may not count QI-type activities that are funded through public or private grant dollars, or other funding, as separate from premium revenue.<sup>23</sup> This ensures that CHW activities supported by MCOs would serve to supplement, and not supplant, existing resources.

Second, the regulations exclude expenditures and activities “that are designed primarily to control or contain costs”.<sup>24</sup> This exclusion prevents MCOs from characterizing cost-cutting measures as QI and encourages MCOs to incorporate CHW services holistically, giving policyholders access to the range of community-based outreach, education, counseling and support services that lead to positive impacts on patient and community health.

Finally, the QI definition excludes “[t]hose activities that can be billed or allocated by a provider for care delivery and which are, therefore, reimbursed as clinical services.”<sup>25</sup> As noted above, Medicaid

programs are now permitted to reimburse for preventive services offered by CHWs and other non-licensed practitioners. Such reimbursement recognizes that CHWs may be an appropriate provider for certain preventive services. In such cases, reimbursing for the service as a medical claim (i.e. not as a QI activity) offers optimal integration of the CHW within the healthcare reimbursement system. Only in cases where such reimbursement is not appropriate – for example, when CHWs offer services in a community setting, or with a group, or provide education that is not necessarily reimbursable as a discrete service – should an MCO categorize that work as QI rather than clinical services.

## CONCLUSIONS

Data from the implementation of the ACA MLR suggest that the impact on private plans' QI activities has been fairly limited: despite evidence that suggests insurers will increase spending on QI up to five percent of premiums,<sup>26</sup> insurers' spending on QI has remained low, at less than one percent.<sup>11, 27</sup>

However, there is reason to be optimistic that the MLR could more effectively encourage QI, including health promotion activities conducted by CHWs, under Medicaid. CHW programs have traditionally focused their efforts on underserved populations, including low-income communities, and therefore are likely to be familiar with, or even established in, communities with high levels of Medicaid enrollment. In addition, many Medicaid MCOs are mission-driven and may view the MLR change as a welcomed opportunity to improve the health of their enrollees.

As MCO integrate CHWs, some stakeholders have voiced concerns over how increasing opportunities for reimbursement may alter the CHW profession and its unique and important role in addressing the social determinants of health.<sup>28</sup> Decisions that insurers make concerning the types of services they will allow CHWs to provide could greatly impact the future scope of services CHWs will offer to patients and communities.

Given this tension, CHWs, public health advocates and other stakeholders should advocate for MCOs to include a broad range of services offered by CHWs within QI activities. In addition, traditional funding for CHWs – from public and private grants and contracts – will remain an important resource to cover those types of services that are not appropriate for reimbursement by Medicaid and either does not qualify as QI under the MLR or are not selected as areas of focus within MCO benefit structures.

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<sup>12</sup> Patient Protection and Affordable Care Act § 2718 (b)(1)(A).

<sup>13</sup> Patient Protection and Affordable Care Act § 2718 (b)(1)(A).

<sup>14</sup> Patient Protection and Affordable Care Act § 2718 (b)(1)(B)(i).

<sup>15</sup> Patient Protection and Affordable Care Act § 2718 (a)(2).

<sup>16</sup> National Association of Insurance Commissioners. Regulation for Uniform Definitions and Standardized Methodologists for Calculation of the Medical Loss Ratio for Plan Years 2011, 2012 and 2013 per Section 2718 (b) of the Public Health Service Act [Internet]. Washington, DC: National Association of Insurance Commissioners; 2010 Oct 27. Available at: [http://www.naic.org/documents/committees\\_ex\\_mlr\\_reg\\_asadopted.pdf](http://www.naic.org/documents/committees_ex_mlr_reg_asadopted.pdf).

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<sup>22</sup> 42 CFR § 158.150 (b)(2).

<sup>23</sup> 42 CFR § 158.150 (c)(3).

<sup>24</sup> 42 CFR § 158.150 (c)(4).

<sup>25</sup> 42 CFR § 158.150 (c)(4).

<sup>26</sup> Abraham JM, Karaca-Mandic P. Regulating the Medical Loss Ratio: Implications for the Individual Market. *Am J Manag Care*. 2011;17(3):211-218.

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## PART VI: CONCLUSIONS & RECOMMENDATIONS

This report has provided a snapshot of the varied landscape of CHW programs to better understand how CHWs are integrating with the health system both in terms of the structural elements of these programs, and the relational elements of CHW-health system interaction that make integrated models succeed. We have learned from our database and case studies that there is no blueprint for success; rather, there are certain unifying structural elements of various integration types, and certain useful mechanisms that enable the preservation of the CHW concept.

As the Affordable Care Act and other drivers of health delivery system change continue to provide opportunities for CHW-health system integration, it is important for policymakers, health care provider organizations, payers and other decision-makers to understand the variation in CHW-health system integration approaches, and to enact flexible organizational and payment policies that allow for a wide range of successful models to succeed.

In addition, as discussions around CHW standardization progress, it is important for decision-makers to recognize the ‘modes of impact’ that underlie the CHW concept, and understand how these impact integration and competency development. As a companion to this work, more research may need to be done on best practices for training physicians and other practitioners to adopt CHWs into practice in ways that will value and uphold their unique contributions to individual and population health.

Payers – in particular Medicaid MCOs – should become familiar with the CHWs’ unique role in health promotion and explore innovative payment models that allow CHWs to be compensated for the range of quality improvement activities they conduct; CHWs, public health advocates and other stakeholders should be aware of the opportunities for stable funding resources through Medicaid, and push MCOs to include a broad range of services within benefit structures.

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## APPENDIX A – Literature Review Methodology

### Methodology

In 2013 NECEPAC conducted a partial review of literature on the effectiveness of community health workers. Their methodology followed that of the landmark literature review carried out conducted by AHRQ in 2009, with the objective of updating the earlier one to take account of studies published through April 2013. Our first goal was to deliver a further update through April 2015. Our second goal was to provide a comprehensive summary of all the studies to date in the form of an annotated bibliography table.

To reiterate the AHRQ methodology, it used a definition of community health workers as individuals that “connect community members, particularly difficult-to-reach populations, to the health care system; receive training associated with their scope of work; and are a recognized or identifiable member of the community in which he or she works, defined by but not limited to geographic location, race or ethnicity, and exposure or disease status” (Viswanathan, 2009; NECEPAC, 2013).

The AHRQ search included English-language studies published from 1980 through November 2008 that were:

- conducted in the U.S.;
- included 40 or more participants;
- involved randomized or nonrandomized comparisons of CHW interventions to an alternative; and
- allowed for the effect of the CHW intervention to be isolated (some studies included CHWs in a combination intervention without the ability to measure the effects of the CHW component) (Viswanathan, 2009; NECEPAC, 2013).

In updating the previous reviews we searched two on-line databases, Pubmed and Google Scholar, using the search terms developed by AHRQ, but filtered for the time period since the NECEPAC search was completed. [Table 1](#) lists the search terms and our initial yields.

**Table 1: Search Terms and Yield**

Search term(s)	Pubmed	Google Scholar
"CHW"	241	7,210
"Community Health Aides"[MeSH] OR "health advisor" OR "health worker" OR "health advocate" OR "health paraprofessional" OR "community health representative" OR "outreach worker" OR dumas OR promotoras OR embajadores OR consejeras	437	31
((("Patient Education as Topic"[MeSH] OR "Patient Education Handout "[Publication Type])) OR "Professional-Patient Relations"[MeSH]) OR "Office Visits"[MeSH]	9479	74
("Community health worker"[MeSH]) OR "Promotora" OR "Health advocate" OR "Community health advocate" OR "Health resilience specialist" OR "Community neighborhood navigator" OR "Health ambassador" OR "Community based health navigator" OR "Youth health advocate" OR "Maternal and infant health advocate" OR "Non-clinical health worker" OR "Community	180	69

health navigator" OR "Community health representative" OR "Community connector" OR "Volunteer health liaison" OR "Community health information expert"		
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Key questions from the AHRQ study were integrated into our research model. These questions were the following:

- How do community health workers interact with participants? Specifically, what is the place of service, type of service, type of educational materials used, duration of interaction with participants, and length of follow-up?
- What is the impact of community health workers on outcomes, particularly knowledge, behavior, satisfaction, health outcomes, and health care utilization?
- What is known about the cost-effectiveness of community health workers for improving health outcomes?

We did not review articles concerned only with training.

With these questions in mind, we developed inclusion/exclusion criteria based on a modification of those of the AHRQ study. [Table 2](#) shows our criteria. Our search yielded 19 studies that satisfied our criteria. We did not attempt to formally assess study quality, although all of the studies appeared to be of adequate quality.



**Table 2: Inclusion/Exclusion Criteria**

Category	Criteria
Populations	All study populations with a CHW intervention
Interventions	<p>Intervention must be delivered by CHWs, not peer counselors or health care professionals. A CHW:</p> <ul style="list-style-type: none"> <li>• Performs health-related tasks to create a bridge between community members, especially hard-to-reach populations, and the health care system (i.e., performs tasks extending beyond peer counseling or peer support alone).</li> <li>• Has health training associated with the intervention; training is shorter than that of a professional worker.</li> <li>• Is recognized (or can be identified) as a member of the community in which he or she works, defined by but not limited to, geographic location, race or ethnicity, and exposure or disease status.</li> </ul>
Comparisons	CHW intervention must have a comparison arm; all comparisons admissible as long as the effect of the CHW intervention can be abstracted
Outcomes	<ol style="list-style-type: none"> <li>1. Interaction with clients</li> <li>2. Knowledge, satisfaction, behavior, health outcomes, and health care utilization</li> <li>3. Cost data</li> </ol>
Time period	April 2013 to May 7, 2015
Study settings and geography	United States
Publication languages	English only
Admissible evidence (study design and other criteria)	<p><u>Admissible designs</u></p> <p>Controlled trials (<math>n \geq 40</math>), nonrandomized controlled trials (<math>n \geq 40</math>), systematic reviews, meta-analyses, prospective trials with historical controls (<math>n \geq 40</math>)</p> <p><u>Other criteria</u></p> <ul style="list-style-type: none"> <li>• Original research studies must provide sufficient detail regarding methods and results to enable use and adjustment of the data and results</li> <li>• Relevant outcomes must be able to be abstracted from data presented in the papers</li> <li>• Effect of CHW intervention must be abstractable</li> <li>• CHW interventions must provide pre-training and post-training evaluation of CHW knowledge or skills</li> </ul>
Exclusion Criteria	<ol style="list-style-type: none"> <li>1. Were published in languages other than English.</li> <li>2. Did not report information pertinent to the key clinical questions.</li> <li>3. Had fewer than 40 subjects for randomized controlled trials (RCTs) or nonrandomized cohorts with comparisons.</li> <li>4. Were not original studies.</li> </ol>

**Evidence Table**

Following the AHRQ review approach, we designed our evidence tables to provide sufficient information for readers to understand the studies and to assess their quality; we placed particular

emphasis on including essential information related to our key questions, and in particular on describing the CHW interventions used in the studies when this information was available from the study articles.

The final evidence tables are presented in [Appendix B](#). Studies are presented in the evidence tables chronologically by year and then alphabetically by the last name of the first author.

A full bibliography of the study articles is included as [Appendix C](#).

## Results

We analyzed the studies along four dimensions that appeared to us to be most useful to those interested in trends through time and we provide summary tables for: research designs; health condition of primary interest; racial and ethnic population of primary interest; and gender and age population of primary interest.

1. Total number of studies and trend in rate of publication.

AHRQ: 69 studies, 1980 – 2008 (equivalent to 2.4 studies per year)

- 52 RCTs (75%)
- 8 Prospective cohort
- 4 Retrospective cohort
- 1 cohort with historic control
- 1 prospective case control observational
- 1 observational cross sectional
- 1 repeated cross sectional survey with random assignment
- 1 2x2 factorial design

NECEPAC: 21 studies, 12/08 – 4/13, Equivalent to 4.8 studies per year

- 21 RCTs (100%)

GW: 19 Studies, 5/13 – 4/15, equivalent to 9.5 studies per year.

- 13 RCTs (72%, excluding the meta-analysis)
- 1 interviewer equivalence
- 1 cross sectional validation
- 1 non-randomized one group cohort study
- 1 quasi experimental (**but which design exactly – Breyssee 2014**)
- 1 quasi experimental pre-post design using propensity score matching
- 1 meta-analysis

## Target health issue: overall, and since 2013

[Table 3](#) provides a detailed summary of the health condition which were the main focus of studies in each review, while [table 4](#) presents a summary at a coarser level which presents a clearer picture of trends over time.

**Table 3: Detailed Summary of Primary Health Condition of Interest, by review**

Health condition	GW (2013-15)	NECEPAC (2008-13)	AHRQ (1980-2008)
Diabetes/A1c	7	5	8
Diabetes/diet	1		1
Obesity/BMI			
CVD	1	3	1
Hypertension		1	3
High BP			3
Pregnancy and child health			4
Maternal health			2
Failure to thrive			2
Child immunization			2
Immunization cost	1		1
Parent training	1		
Psychosocial risk in pregnancy			1
Breastfeeding			1
Low birth weight			1
Infant mortality			1
Maternal phenylketonuria			1
Maternal drug use			1
Child safety			
Child abuse			4
Asthma	2	2	
Childhood asthma	1		3
Cervical cancer screening	1	5	3
Breast cancer screening		1	10
Both			3
Women's cancer screening		1	1
HIV	1	2	1
Colorectal cancer screening			2
Mental health			2
Injury prevention			2
Chronic disease prevention		1	1
Other	Health expenditures Hospital readmissions Dementia		2nd hand smoke exposure Back pain Diet TB

**Table 4: High Level Summary of Primary Health Condition of Interest, by review**

Health condition	GW	NECEPAC	AHRQ
Diabetes & obesity	8 (44%)	5 (24%)	9 (13%)
CVD & hypertension	1 (6%)	4 (19%)	7 (10%)
Maternal and child health	2 (11%)		17 (25%)
Child abuse			4 (6%)
Childhood asthma	3 (17%)	2 (10%)	3 (4%)
Women's cancer screening	1 (6%)	7 (33%)	17 (25%)
HIV	1 (6%)	2 (10%)	1 (1%)
Colorectal cancer screening			2 (3%)
Mental health			2 (3%)
Injury prevention			2 (3%)
Chronic disease prevention		1 (5%)	1 (1%)
Other	Health expenditures Hospital readmissions Dementia		2nd hand smoke exposure Back pain Diet TB
Totals	18 <sup>iii</sup>	21	69

Table 5 summarizes the main population of interest by race/ethnicity in the studies. Where race/ethnicity appeared not to be a factor in the way the study population was selected, an alternative descriptor is used. We assigned only one main population descriptor for each study - it was generally clear from the study narrative what the population factor of particular interest to the study designers was.

**Table 5: Summary of Populations of Interest by Race, Ethnicity, other factors, by review**

Population	GW	NECEPAC	AHRQ
All African American	2 (11%)	1 (5%)	14 (20%)
Mainly African American	3 (17%)	1 (5%)	14 (20%)
Hispanic	7 (39%)	8 (38%)	6 (9%)
Mainly Hispanic			7 (10%)
Both AA and Hispanic	2 (11%)	1 (5%)	5 (7%)
Low income	1 (6%)	1 (5%)	7 (10%)
Vietnamese-American		3 (14%)	1 (1%)
Korean-American	2 (11%)		
Hawaiian			3 (4%)
Chinese American			1 (1%)
Native American			2 (3%)
Church goers		1 (5%)	1 (1%)
Rural			2 (3%)
Other			
Totals	18 <sup>iii</sup>	21	69

<sup>iii</sup> One meta-study omitted from total

Table 6 summarizes the main population of interest by gender and age factors. As in table 5, only one descriptor was assigned per study.

**Table 6: Summary of Populations of Interest by Gender, Age, and Review**

Gender/Age	GW	NECEPAC	AHRQ
Women	2 (11%)	9 (43%)	32 (46%)
Men			
Mainly women	2(11%)		
Mainly men			
Children	1 (6%)	2 (10%)	10 (14%)
Mothers and children	1 (6%)		5 (7%)
60+	1 (6%)		
Adult	4 (22%)	3 (14%)	6 (9%)
Not stated (= 'adults' in all cases)	7 (39%)	7 (33%)	16 (23%)
Totals	18 <sup>iii</sup>	21	69

### Brief Commentary

There are several trends in the summary table that appear to merit mention, though explaining these trends in any depth is beyond the scope of our review.

1. Study designs: RCT design continue to dominate the published work, as they have done in previous reviews, with 13 of the 18 2013-2015 studies using an RCT design (72%, compared to 75% in the AHRQ review and 100% in the NECEPAC review). It is not clear why there should have been no non-RCT studies in the NECEPAC review although this may reflect decisions about study quality.
2. There has been an upward trend in interest in diabetes, which was the focus of only 13% of the AHRQ reviewed studies compared to 42% of the GW reviewed studies.
3. On the other hand there has been a downward trend in studies of child and maternal health (from 25% of AHRQ studies to none at all in the NECEPAC review studies and just 11% of the GW review studies) - with the exception of childhood asthma where interest appears have increased (from 4% of the AHRQ studies to 16% of the GW studies).
4. There also appears to be a downward trend in studies of 'fringe' applications of CHWs such as for back pain, TB and 2<sup>nd</sup> hand smoke exposure; the only 'fringe' application in the GW review studies was the dementia study.
5. Other than the focus on RCTs, all these trends may reflect a shift in funder's interests towards the use of CHWs in reducing health costs related to chronic disease.
6. A large increase in studies of Hispanic/Latino populations is evident since the AHRQ review was completed. In the period since 2008 almost 40% of review studies were focused on Hispanic or mainly Hispanic populations, compared with 19% in the period up to 2008.
7. Note however that the numbers we are dealing with are small and that published studies can't be considered a representative sample owing to publication bias. The above trends raise questions rather than supply answers.

## APPENDIX B – Literature Review Reference Table

Source	Author	Year	Health conditions of interest	N	Population studied	Research Design	Study/Intervention	Outcome measures	Follow-up period	Key findings
AHRQ	Frate	1983	High Blood Pressure	Training	Five-county, low income, medically underserved rural area with bi-racial population of 86,000+.	Prospective cohort	Hypertension health counselors with three main functions. 1) Managing hypertensive clients 2) Develop and monitor high BP management self-help groups. 3) Church Community activities including blood pressure screenings and health education material dissemination	Program effectiveness Program cost effectiveness Can the program be adapted to community medical settings?	18 months	Both the single client and self-help group intervention had achieved a blood pressure control rate of over 90 percent. Cost effectiveness can be directly extrapolated from the 1300 hypertensive clients who were provided entry into the medical care system. Conclusion: The 12-month formative education program demonstrated health effectiveness,. Although developed and implemented in a rural area this model has general applicability.
AHRQ	Barth	1988	Child Abuse	50	Women during or just after pregnancy identified as at-risk of engaging in child abuse by community professional. RCT: n=24 (intervention), n=26 (control).	RCT	Child Parent Enrichment Project services(CPEP). Control group received traditional community services.	Prenatal care, birth outcomes, reports of child temperament, indicators of child welfare.	6 Months	Advantage for the CPEP group in prenatal care, birth outcomes, better reports of child temperament, and better indicators of child welfare. CPEP mothers tended to report better well-being. No significant differences for levels of formal and informal support. Reports of child abuse were similar for both groups. Consumer satisfaction indicates that clients valued the program.
AHRQ	Bone	1989	High Blood Pressure	722	Inner city predominantly black (85%) ED clinic population, 47% male, median age of 34 years, half receiving public assistance.	Prospective cohort	CHWs were women residing in the community where the ED is located Interventions comprised (1) BP and pulse measurements, and educational counseling on HBP and cardiovascular risk factors; (2) telephone pre-appointment reminders to improve ED follow-up visit rates; (3) re-contact of patients failing to show for their ED follow-up visits	Emergency Department follow-up appointments attended	Single follow up visit	60% of those patients contacted by CHWs returned to the ED for their follow-up visit, as compared with 41% of those not contacted (P < .001).
AHRQ	Barth	1991	Child Abuse	19	Pregnant women referred to the Child Parent Enrichment Project (CPEP) by public health, education, or social service professionals working in 17 different agencies. Participants were selected using a child abuse screening instrument (n = 19)	RCT	Six months of home visiting by paraprofessional women and linkage to other formal and informal community resources.	(1) well-being (CES-D, STAI, PEARLIN, and CAPI); (2) support (CRUS, SSP, ISSB, and SSI); (3) prenatal care (Eat Bad, Eat Right, and Prenatal Visits); (4) birth outcomes (Pregnancy Problems, Hospital Stay, Birth weight, and Discomfort); (5) baby temperament (Activity, Mood, and Distractibility); (6) child welfare (Need Care, Emergency Medical Care, Baby Care, and Health).	Time from end of CPEP services to follow-up review of case records was about three years.	No advantages on self-report measures for the CPEP group were measured at posttest, and follow-up reports of child abuse were similar for both groups. Consumer satisfaction indicates that clients highly valued the program. Some indication of greater success with families with less serious problems was observed.
AHRQ	Graham	1992	Low Birth Weight	145	High-risk women registered at a Cleveland clinic (n=145)	RCT	Experimental and the control groups received routine care from the obstetrical staff at the prenatal clinic. Experimental group also received a home visit intervention.	Low birth rate	Birth of child	No. of prenatal visits was significantly higher in the intervention group, but this did not correlate with a reduced rate of low birth-weight. Findings question the utility of short-term psychosocial interventions for influencing low birth-weight rates in low-income black clinic populations.
AHRQ	Sung	1992	Cancer Screening	321	Low-income black women from Atlanta aged 35 and up with no history of hysterectomy or cancer (n=321)	RCT	Two educational sessions, each about 1.5 hours in length, held 2 to 3 weeks apart at the home of the subject. A "booster" session was scheduled about 2 months	Frequency of pap smears and breast examinations.	6 month	Overall, about half of these volunteer subjects self-reported at least one Papanicolaou (Pap) smear and one breast examination within a year before enrollment in the study. There was little variation by source of recruitment in compliance with screening recommendations, except that referrals from the National Black Women's Health Project (NBWHP) were more likely (P< 0.01) to have had a Pap test and breast self-examination, while residents of public housing projects were somewhat less likely to have done so.

## APPENDIX B – Literature Review Reference Table

Source	Author	Year	Health conditions of interest	N	Population studied	Research Design	Study/Intervention	Outcome measures	Follow-up period	Key findings
AHRQ	Schwarz	1993	Injury Prevention		Urban community of 68 103 people who reside in 17 census tracts in western Philadelphia. Nine census tracts in the community were assigned as either intervention or control. The population is predominantly (97.2%) African American and poor, with a median family income of \$11 810.	Prospective case-control observational Quasiexperimental; nonrandom controlled trial	12 months after randomization random samples of these groups were assessed for home hazards and injury prevention knowledge (1) Home modification for simple prevention measures, (2) home inspection to inform residents about hazards and ways of alleviating them, and (3) education about selected injury prevention practices. Educational programs were conducted in individual homes and at block and community meetings.	12 months after intervention a random sample was assessed for (1) whether home modifications remained intact, (2) compliance with the hazard abatement recommendations made by the safety inspectors, and (3) residents' knowledge about safety procedures. In the control area they assessed the prevalence of hazards in the home and the residents' level of knowledge concerning safety procedures.	12 Months	Data on injury rates are not yet available, and the relationship between the incidence of injury and preventive efforts to alter safety knowledge and home hazards has not been definitively established. A significantly larger proportion of intervention homes had functioning smoke detectors, ( $P \leq .0001$ ), syrup of ipecac ( $P < .001$ ), safely stored medications and reduced electrical and tripping hazards.
AHRQ	Black	1995	Failure to Thrive	130	130 children, recruited from urban pediatric primary care clinics serving low income families, younger than 25 months with weight for age below the fifth percentile. Eligibility required having a gestational age of at least 36 weeks, birth weight appropriate for gestational age, and no significant history of perinatal complications, congenital disorders, chronic illnesses, or developmental disabilities.	RCT	A community-based agency provided receive weekly home visits for 1 year by lay home visitors, supervised by a community health nurse. The intervention provided maternal support and promoted parenting, child development and use of informal and formal resources; all also received services in a multidisciplinary growth and nutrition clinic.	Weight, height and height for age; cognitive and motor development; language development. Parent-child interaction was measured by observing mothers and children during feeding	12 months 18 months	Children's weight for age, weight for height, and height for age improved significantly during the 12-month study period, regardless of intervention status. Children in the home intervention group had better receptive language over time and more child-oriented home environments than children in the clinic-only group. The impact of intervention status on cognitive development varied as a function of children's ages at recruitment, with younger children showing beneficial effects of home intervention.
AHRQ	Pilote	1996	Tuberculosis Prophylaxis	244	244 eligible subjects infected with tuberculosis to (1) peer health adviser (assistance by a peer [n=83]), (2) monetary incentive (\$5 payment [n=82]), or (3) usual care (referral slips and bus tokens only [n=79]).	RCT	(1) peer health adviser assistance by a peer (2) monetary incentive \$5 payment (3) usual care referral slips and bus tokens only	Adherence to a first follow-up appointment	14 months	A monetary incentive or a peer health adviser is effective in improving adherence to a first follow-up appointment in homeless individuals infected with tuberculosis. A monetary incentive appears to be superior. Intravenous drug users and young individuals are at high risk for poor adherence to referral.
AHRQ	Corkery	1997	Diabetes	40	Inner-city Hispanic population >20yrs old. N=64 patients enrolled, n=40 completed.	RCT	Only used one CHW for total treatment group. CHW acted as a liaison between the patients, their families, and health care providers for the CHW intervention group. The CHW attended clinic sessions with assigned patients. She served as Spanish interpreter, reinforced self-care instructions, reminded patients of upcoming appointments, and rescheduled missed appointments.	1) glycohemoglobin levels 2) knowledge-gain scores of patients who did and did not have a CHW; 2) knowledge-gain scores of patients who did and did not have a participating family member; 3) glycohemoglobin values with and without a CHW. 4) glycohemoglobin levels with and without a participating family member; and 5) differences in age between the group who completed the program and the group who dropped out.	Mean: 7.7 months	Of the patients having CHW intervention, 80% completed the education program, compared with 47% of patients without. The effect of the CHW assignment on program completion, controlling for financial status and language spoken, was robust ( $P = 0.007$ ). The effect of the CHW on knowledge, self-care behavior, or glycohemoglobin outcome variables was not statistically significant.
AHRQ	Hutchenson (see also Black 1995)	1997	Failure to Thrive	74	Follow-up study of children age 4 that participated in a home intervention study (n=74).	RCT	Half of families were assigned to home-intervention group. All families enrolled in a multidisciplinary growth and nutrition clinic and received nutritional, medical, and behavioral intervention including videotaped feeding observations.	Bayley Scales of Infant Development and the Battelle Developmental Inventory at age 4 Child interactive behavior Child behavior during play	6 months + 1 year	There were no effects of demographic risk, maternal negative affectivity, or intervention status on child outcome at the close of the home intervention. However, at age 4, more than 1 year after the home intervention ended, there were effects of the home intervention on motor development among all children and on cognitive development and behavior during play among children of mothers who reported low levels of negative affectivity

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AHRQ	Silver	1997	Mental Health	365	365 mothers of 5-to-8 year-olds with diverse health conditions. Recruited from two large urban medical centers that serve a predominantly inner-city, low-income, minority population.	RCT	Community-based support program	Mothers' subscale and total symptom scores on the 29-item Psychiatric Symptom Index. PSI is multidimensional and includes several elements believed to be related to maternal capacity to provide care, including depression, anxiety, anger, and cognitive disturbance.	12 months, 6, 12, and 18 months	Among mothers reporting more than five stressful life events (SLE) in the past year, posttest anxiety was lower in the EG than in the CG, but no difference was found between EG and CG mothers having less than five SLE. The intervention also acted as a moderator variable, with correlations of SLE and posttest depression, anxiety, and total symptoms significantly lower in the EG than CG. $F(1,94) = 4.61, p > .05$ .
AHRQ	Sung	1997	Cancer Screening	321	321 African-American women from diverse inner-city. 93 women in the intervention group and 102 in the control group completed the post intervention inter-view.	RCT	Homes visits up to three times by LHWs who provided a culturally sensitive educational program that emphasized the need for screening.	Pre/post change in self-report of receiving screening exams.	6 months	Increase in pap smears screening was similar in both groups. Clinical breast exams had a modest increase in the intervention group. The improvement was greatest for mammography, for which there was a 10% to 12 % increase [95%CI 9.8 (2.9, 16.7) $P<.05$ ]. Among women who were not on recommended schedules at baseline, the improvement was substantial and greater in the intervention group.
AHRQ	Tessaro	1997	Maternal Health	705	N.C. birth files for the original 24 participating counties and include 1,726 Maternal Outreach Worker (MOW) participant births and 12,988 comparison births whose records were linked to birth files and met the study criteria. Interview study 373 MOW participants and 332 comparison.	Prospective cohort	Women were personally interviewed three times: during pregnancy, one month postpartum, and one year after delivery.	Low birth rate	1 year	Risk factors associated with poor pregnancy and parenting outcomes were greater among MOW participants than comparisons in both the program wide and intensive study components. Caucasian MOW participants had slightly higher rates of adequate prenatal care. African Americans were found to have less adequate prenatal care. Fewer than expected LBW and VLBW births were observed for African-American MOW participants. MOW Program participation did not affect the utilization of health and social services for infants. African Americans, regardless of whether they received MOW services, fared better than Caucasians in terms of having their pregnancy needs fulfilled.
AHRQ	Wolff	1997	Mental Illness	85	85 people with severe DSM-III axis I diagnosis, such as schizophrenia, and either current homelessness or risk for homelessness based on prior history of homelessness. Participants were recruited from the emergency rooms and inpatient units of local psychiatric hospitals.	RCT	28 in assertive community treatment alone, 35 in assertive community treatment with community workers, and 22 receiving brokered case management (purchase of services).	Program contact, client satisfaction, stable housing, and psychiatric symptoms using a 24-item Brief Psychiatric Rating Scale	18 months	Clients assigned to the two assertive community treatment conditions had more contact with their treatment programs, experienced greater reductions in psychiatric symptoms, and were more satisfied with their treatment than clients in the brokered condition. There was no statistically significant difference between treatment conditions in terms of the total costs of treating the participants. However, the assertive community treatment conditions spent less money on inpatient services than brokered case management, but more on case management services and maintenance (i.e., food stamps, housing subsidies, and Supplemental Security Income payments).
AHRQ	Caulfield	1998	Breastfeeding	242	African-American women (N=548 enrolled, n=242 completed.)	RCT	<u>Video intervention</u> consisted of a breastfeeding motivational video and accompanying posters, pamphlets and breastfeeding. <u>Peer counseling intervention</u> was active both before and after delivery. Talked with women, assessed their attitudes regarding infant feeding, corrected misconceptions, held one-on-one counseling, and group support sessions on infant feeding. Followed up those women interested in breastfeeding three or more times during pregnancy and then weekly to 16 weeks postpartum as long as they continued to breastfeed.	Breastfeeding practices	Up to 16 weeks post-partum	48% initiated breastfeeding, but only 31 % were still breastfeeding at 7-10 days. Overall, trends toward a positive impact of the breastfeeding promotion activities were evident but weak, and largely gone by 7-10 days postpartum.



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							Contacts with the peer counselors were made at the WIC clinic, at home, or by telephone. <u>Combined intervention</u> included all of the components of both the peer counseling and video interventions described above.			
AHRQ	Navarro	1998	Cancer Screening	361	512 Latinas, 361 completed. Average age = 34	RCT	Lay health worker intervention developed specifically to target low-income Latinas whose access to health care service and cancer screening rates was expected to be particularly low	Extensive face-to-face interviews conducted in either Spanish or English. Ninety-seven percent of the participants preferred to be interviewed in Spanish. A 178-item questionnaire was developed that covers information on access to health care services, cancer knowledge, preventive measures, and previous cancer screening examinations. The questionnaire also included the Marí n's Short Scale of Acculturation, and the Social Support Questionnaire.	1 and 2 years	Increase in the use of the cancer screening tests was higher in the PLV cancer intervention group in comparison to women in the community living skills control group. (P<.001). <b>Study Conclusion:</b> The model is an effective and viable approach for increasing the use of cancer screening tests in Latinas of low socioeconomic level and low level of acculturation.
AHRQ	Von Korff	1998	Back Pain	255	Patients aged 25 through 70 with back pain enrolled for at least 1 year in the Group Health Cooperative of Puget Sound (GHC), a health maintenance organization in Western Washington State. Patients had been seen for back pain or strain, a disc disorder, or sciatica (n=255)	RCT	Four 2hr session group educational sessions led by trained lay persons following a structured protocol and applying problem-solving techniques to back pain self-management, supplemented by educational materials (book and videos) supporting active management of back pain. Control group received usual care.	Roland Disability Questionnaire Score Mental Health Inventory of the SF-36	12 months	Significant difference in Roland Disability Questionnaire Score at 6 month (P = 0.007). At 6-month follow-up, 47.9 % of the self-management group showed a 50% or greater reduction in Roland Disability Questionnaire Score from baseline, whereas 33% o of the usual care control subjects showed a 50% o or greater reduction in Roland score (X2 = 5.2; df = 1; P = 0.02). At 12-months, difference reached borderline significance (P = 0.092). Back pain self-management (according to the Self-Care Orientation Scale) was significantly more favorable at 3- and 6-month follow-ups and continued to differ at a border-line significance level at 12 months. Pain intensity rating did not show a significant effect, although there was a trend favoring the self-management group participants at 6 months (P=0.064). Conclusion: The findings suggest that engaging patients in problem solving to overcome ongoing activity limitations, enhancing patient confidence in self-care, and addressing specific patient worries may be important components in reducing activity limitations among patients with back pain.
AHRQ	Barnes	1999	Immunization	163	Low-income children younger than 2 years old who were no-shows for a scheduled pediatric appointment and due or overdue for a vaccine (n=163).	RCT	Immunization outreach, tracking, and follow-up by community volunteers. Control children were notified of immunization status at enrollment.	Immunization status	6 months.	Significantly more intervention children up-to-date with their vaccination series than controls (75% vs 54%; P = .03). Control group 2.8 times more likely to be late for a vaccine. Immunization delay of longer than 30 days at enrollment was a significant predictor of final immunization delay (odds ratio = 2.6; P = .02).
AHRQ	Duggan	1999	Child abuse, neglect, development	566	Hawaiian community members not known to child protective services (n=566). Mothers had to be proficient enough in English to answer survey questions without the aid of a translator.	RCT	Home visiting with individualized service plans, child developmental screenings, and mother-child interaction assessments; family support plan within 45 days of initial visit, reviewed every 6 months, revised annually; periodic screening for DD, observational assessment of parent-child interaction and home environment; ensure existence of medical home, links to other needed resources	Linkage of families with community resources, parental life course, home environment, parenting behavior and attitudes. Child health and development, and child maltreatment. Infant and mental development.	2 years	No overall positive program impact emerged after two years of service in terms of the adequacy of well-child healthcare; maternal life skills, mental health, social support or substance use; child development; the child's home learning environment or parent-child interaction: pediatric health care use for illness or injury; or child maltreatment (according to maternal reports and child protective services reports). There were agency-specific positive program effects on

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										several outcomes, including: parent-child interaction, child development, maternal confidence in adult relationships, and partner violence.
AHRQ	Erwin	1999	Mammography	206	African American Women churchgoers (n=206)	Prospective cohort	Seven local African American women who had survived breast or cervical cancer, speak in groups of two to five at local churches and community organization meetings.	Breast self-exam in the past month.	6 months	Participants significantly increased their practice of breast self-examination ( $P < .0001$ ) and mammography ( $P < .005$ ) compared with the women in the control counties.
AHRQ	Korfmacher	1999	Pregnancy and child health	560	Pregnant women who had had no previous live births and who either qualified for Medicaid or had no private insurance were recruited from 21 prenatal clinics in the Denver, Colorado metropolitan area (n=560)	RCT	Home visitation focused on focused on 3 primary goals: improving pregnancy outcomes by promoting health-related behaviors; improving child health, development, and safety by promoting competent care of the child; and enhancing parent life-course development by promoting pregnancy planning, educational achievement, and employment.	Program dropouts Encounter variables. Mothers rating of the helping relationship. Relationship continuity. Analysis	2 years	Nurses completed more visits than paraprofessionals ( $P < .001$ ) and spent greater time on physical health during pregnancy ( $P < .001$ ). Paraprofessionals conducted longer visits that more focused on environmental safety issues ( $P < .001$ ). Nurses had fewer dropouts ( $P = .04$ ). <b>Study Conclusion:</b> Nurses and paraprofessionals conducted a program for parents and infants in unique ways, even when they were provided with a structured and common set of program protocols.
AHRQ	Krieger	1999	Hypertension	421	Black or White adults over the age of 18 with a blood pressure of $\geq 140/90$ and income $\leq 200\%$ of the poverty line (n=421)	RCT	RCT comparing enhanced to usual care. In the enhanced care arm, community health workers performed blood pressure measurements as well as 1) referral to medical care as well as assistance in locating provider 2) arranged appointments or follow-up for clients who made their own appointments to assure an appointment was made; (3) an appointment reminder letter; (4) follow-up to determine whether the appointment was kept; (5) a new appointment for each missed appointment (up to 3); and (6) assistance in reducing barriers to care through referral to community transportation, child care, or other services. Standard guidelines were followed in determining the interval from blood pressure measurement to appointment.	Completion of a medical follow-up visit within 90 days of referral.	3 months	Follow-up increased in the intervention group by 39.4% relative to usual care (95% CI 14%, 17% $P = .001$ ). Follow-up visits were completed by 65.1% of intervention group compared to 46.7% of those in usual care ( $P = .001$ ).
AHRQ	St. James	1999	Maternal Phenylketonuria	83	19 pregnancies in resource mothers program group in New England. compared to 64 pregnancies in phenylketonuric women without the program	Retrospective cohort	Home visitation program, the Resource Mothers Program for Maternal PKU. Resource mothers involved were recruited from metabolic centers throughout New England and are mothers of children with phenylketonuria. They are familiar with the diet, the methods for calculating phenylalanine in food, and the stresses such restrictions produce in a family.	Weeks to metabolic control and offspring outcome	12 months after birth	Offspring in the resource mothers group had a significantly larger birth head circumference (Wilcoxon rank-sum test, $z = 1.76$ , $P = .08$ ) and a higher developmental quotient at 6 to 12 months of age ( $F = 4.89$ , $P < .05$ ). <b>Study Conclusion:</b> This study shows that the Resource Mothers Program reduces the delay in attaining metabolic control in pregnant women with phenylketonuria. The most recent results from the Maternal PKU Collaborative Study indicate that "every week counts" in terms of protecting offspring from adverse cognitive effects. Delays of only 2 to 4 weeks in attainment of metabolic control can dramatically increase the risk of having a child with developmental problems.
AHRQ	Andersen	2000	Mammography promotion	N/A	Predominantly rural communities in Washington state with high levels of uninsurance among women	RCT	Individual counseling; community activities; & combination of the two.	Rate of relapse at follow-up Increase in utilization of mammography among under-users	3 year	Community activity intervention appears to have significantly reduced rates of relapse by regular users. All three interventions increased use of mammography by under-users.
AHRQ	Derose	2000	Mammography	1967	African American, Latino, and white churches and women church members ages 50-80, living in private residencies,	RCT	Control churches provided minimal intervention: a library of resource materials on cancer and cancer prevention, assistance with starting a health committee or working with an existing health	Breast cancer screening and enrollment.	2 years	Assuming that all labor is voluntary and that churches provide materials and resources: Cost per additional screening for a LAMP study participant = \$188;

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					not being too ill or impaired to be interviewed, being able to be interviewed in English or Spanish, living in a sample area, and being reachable by telephone (n=1,967)		committee, computer hardware, software, and a printer Intervention group: One session of telephone counseling annually, for 2 years, by peer counselor; counseling individualized to address barriers, churches also received computer support offered to control churches			Cost if all participants are adherent at baseline = \$145; Cost if all participants nonadherent at baseline = \$419 (using LAMP effectiveness rates for adherent (7.5%) and nonadherent (2.6%) participants)
AHRQ	Duggan	2000	Child abuse	6553 /373	Hawaii's Healthy Start Program (HSP), which incorporates 1) early identification of at-risk families of newborns via population-based screening and assessment, and 2) paraprofessional home visiting to improve family functioning, promote child health and development, and prevent child maltreatment. Cross-sectional study: civilian births in 6 communities (n= 6553). Longitudinal study: at-risk families in the intervention group of a randomized trial of the HSP (n=373).	RCT	Home visiting protocol requires that a home visit take place within 1 week of the family's early identification referral. Visit frequency is based on an overall assessment of family need. Goal to promote child health and development and to prevent child abuse and neglect by improving family functioning in general and parenting in particular. Home visitors are trained paraprofessionals working	Process: completeness and timeliness of early identification and home visiting activities; Family characteristics: sociodemographics, child abuse risk factors, infant biologic risk. Continued participation in home visiting.	2 years	Families with higher risk scores [odds ratio 1.16 (1.08, 1.24)], young mothers with limited schooling [odds ratio 2.45 (1.32,4.56)], and families with infants at biologic risk [odds ratio 2.13 (1.47, 3.08)] were more likely to enroll in home visiting. Half of those who enrolled were active at 1 year with an average of 22 visits [odds ratio 2.78 (1.21, 6.40)] and where the mother was substance abusing [odds ratio 1.85 (1.05, 3.23)] . Conclusion: It is challenging to engage and retain at-risk families in home visiting. Service monitoring must be an integral part of operations.
AHRQ	Nacion	2000	Maternal Child Health	213	Pregnant women and/or women and their infants (n=213).	Retrospect ive cohort	Conducted home visits consisting of health promotion and problem identification. The actions of community health advocate-nurse teams and professional validating nurses were compared on 213 duplicate home visits.	Study was designed to identify the amount of agreement between a professional nurse and a community health advocate Agreement 1. Nurse identifies a problem or referral. 2. MCHA identifies a problem or referral. Agreement 1. Nurse does not identify a problem or referral. 2. MCHA does not identify a problem or referral. Disagreement 1. Nurse identifies a problem or referral. 2. MCHA does not identify a problem or referral. Disagreement 1. Nurse does not identify a problem or referral.2. MCHA identifies a problem or referral.	na	There were no significant differences between maternal-child health advocates (MCHAs) and professional nurses in their identifications of infant health problems, infant health care deficits, other family members' health problems, prenatal care deficits, emotional problems and substance abuse on either the hypothetical home visits or the duplicate home visits. Nurses identified significantly more women's health problems (P= 0.01) and women's health care deficits (P= 0.02) than the MCHAs
AHRQ	Navaie-Waliser	2000	Maternal Health	419	Two groups of high-risk Medicaid-eligible mothers, 221 who participated in a maternal home visitation program and 198 who did not	Prospectiv e cohort	program services begin prior to 28 weeks' gestation and continue on a monthly basis (or more often based on familial needs as assessed by the MOWs) through the infant's 1st birthday.	mothers' psychological functioning 1 year after delivery (that is, self-esteem, perceived stress, and depression).	1 year	The results suggest that, compared to nonparticipants, participants provided with more intensive home visitor support had significantly higher self-esteem (P= 0.039) and were less depressed (P= 0.015). Participants with less intensive home visitor support, however, did not differ significantly from nonparticipants in their self-esteem or depression levels.
AHRQ	Schuler	2000	Maternal Drug Use	171	At 2 weeks postpartum, mothers and infants were randomly assigned to either an intervention (n = 84) or a control (n = 87) group.	RCT	Control families received brief monthly tracking visits, and intervention families received weekly visits by trained lay visitors.	Self-reported maternal drug use	6 months	No direct effects of the intervention, in the control group, mothers who continued to use drugs were less responsive to their babies than mothers who were drug free. In the intervention group, drug use was not associated with maternal responsiveness. Weekly home-based intervention

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										may be a protective strategy for children of drug-using women because it disrupts the relation between ongoing maternal drug use and low maternal responsiveness.
AHRQ	Ward	2000	Hypertension	367	Underserved low-income minorities in the inner-city with hypertension in a 4 year longitudinal study (n=367)	RCT	Individualized counseling sessions; home visits/discussion groups; or computerized appointment-tracking system. 1 <sup>st</sup> intervention consisted of usual care combined with short individualized patient counseling sessions after clinic visits. 2 <sup>nd</sup> intervention involved usual care with a computerized appointment reminder patient tracking system. 3 <sup>rd</sup> condition comprised usual care combined with home visits and opportunities to take part in discussion groups The remaining participants received the usual care provided by the hypertension clinic.	Blood pressure control	1 year	Average diastolic (t [1153] 5 7.1, P , 0.0001) and mean arterial (MAP) blood pressure levels (t [1153] 5 3.4, P , 0.001) of individuals with diabetes were significantly lower than those of individuals without diabetes. There were no differences in mean blood pressures for individuals with kidney disease, heart conditions, or stroke, compared with individuals who did not have target organ damage. The total number of comorbid conditions per participant was not related to baseline blood pressure nor to blood pressure control.
AHRQ	Barnes-Boyd	2001	Infant mortality	666	Low-income, predominately African American families, residing in Chicago inner-city neighborhoods with high unemployment, high teen birth rates, violent crime, and deteriorated neighborhoods (n=666). Comparison group was previous home-visiting program that used only nurses.	Cohort with historic control	Nurse-managed team which included community residents selected, trained and integrated as health advocates	Infant health problems and developmental levels; immunization rates.	12 Months	Infant health problems and developmental levels were equivalent to the prior program and significantly more infants were fully immunized at 12 months.
AHRQ	Batts	2001	Type 2 diabetes	119	Urban African American adults with type 2 diabetes aged 35 to 75 (n=119)	RCT	Participants received behavioral/educational interventions from a nurse case manager, a community health worker, or both during 3 intervention visits.	Hemoglobin A1c and blood pressure. Priorities and needs were assessed in the clinic by the NCM or in the home by the CHW.	2 year study	Most of the intervention visits (77%) addressed non-diabetes-related health issues such as cardiovascular disease (36%) and social issues such as family responsibilities (30%). The most frequently addressed diabetes needs were glucose self-monitoring and medication adherence. The most frequently reported priorities for diabetes care were glucose self-monitoring (61 %), medication adherence (47%), and healthy eating (36%).
AHRQ	Rask	2001	Cost of registry-based Immunization interventions	3050	Children aged <12 months who had been seen in a county public health clinic were randomly selected from the registry of immunization records (n=3050)	RCT	(1) computer-generated telephone messages (autodialer), (2) outreach worker, (3) autodialer with outreach worker backup (4) usual care.	Monthly cost per child.	15 months	(1) autodialer, \$1.34 per child; (2) outreach worker, \$1.87 per child, and (3) combination, \$2.76 per child. Personnel costs represented the majority of incremental costs for all three interventions. Increasing the number of children targeted sharply decreased the cost per child for the autodialer but had only a modest effect on outreach costs. The monthly costs for outreach were substantially lower than previously reported for nonregistry-based interventions in part because of differences in the number of children who were followed up.
AHRQ	Williams	2001	Health Promotion	302	Evaluation of program aimed at Low-income African American women. Experimental condition (n = 154) control group (n = 148).	RCT	Nutrition program that had been designed to reduce high-fat dietary patterns among obese women at risk for developing non-insulin-dependent diabetes mellitus (NIDDM). Community-based, dietary change delivered in 3-month intervals or cohorts, and approximately 80 women were assigned to either condition for each cohort.	Survey, recorded sessions	3 months	Overall comprehensiveness of the content delivered by the peer educators was 91.42%. Overall accuracy of information delivered was 88.52%.
AHRQ	Andersen	2002	Mammography	See text	Women in 40 rural communities	Community RCT	Communities were placed into one of four groups.	Costs Cost effectiveness	3 years	New-use analysis (underusers at baseline), the observed differences of use by CAs, IC, and ICCAs

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							<p>1) Individual counseling (IC): volunteer peer counselors telephoned women and used barrier-specific telephone counseling</p> <p>2) Community activities (CA): volunteers sought to promote a social norm supportive of mammography by showing a video describing the benefits of mammography; hosting mammography theme bingo games; and arranging for the display of information at community gatherings, meetings, and events. Contributed to the development of community newsletters and distributed a variety of materials imprinted with messages about the benefits of mammography at stores, libraries, beauty salons, golf clubs, grocery stores, and other places in their communities.</p> <p>3) Individual counseling and community activities (ICCA)</p> <p>4) No intervention.</p>			<p>interventions were +2.1% (95% CI) –8.0%, 11.7%), +2.8% (95% CI –6.4%, 11.3%), and +2.6% (95% CI –6.2%, 12.2%), respectively. These increases were not statistically significant (<math>p &gt; .05</math>). Relapse prevention analysis: among regular users at baseline with the CAs, IC, and ICCAs interventions were +2.9% (95% CI 0.8%, 5.2%), +0.4% (95% CI –4.3%, 3.2%), and +1.4% (95% CI –1.3%, 3.9%), respectively. The increase was statistically significant for the CAs intervention effect (<math>p = .01</math>) but not significant for IC and ICCAs effects (<math>p &gt; .05</math>).</p>
AHRQ	Auslander (see also Williams 2001)	2002	Type 2 diabetes		Overweight, low-income African American women ages 25-55	RCT	Health promotion and individually tailored dietary patterns through staging and use of peer educators	Pre- and posttest and follow-up interviews of dietary behaviors, knowledge, attitudes, fat intake, and weight.	3 month	Significant reductions in fat intake, maintained at 3-month follow-up assessment. Significant changes in dietary patterns reported after the study and were maintained, except for one dietary pattern (replacement).
AHRQ	Earp	2002	Breast Cancer Screening	801	Rural African American women 50 years and older (n=801)	Prospective cohort	Trained lay health advisors worked individually and collaboratively to promote awareness and use of breast cancer screening among African American women in their communities. Social-ecological model of behavior emphasized linked strategies at the individual, social network, organizational, community, and policy levels.	Mammogram with previous 2 years. Awareness of the intervention program, plus 2 measures regarding receipt of mammography advice and recognition of project materials.	32 months	6 percentage point increase (95% CI=-1, 14) in communitywide mammography use. Low-income women in intervention counties showed 11 percentage point increase (95% CI = 2, 21) in use above that exhibited by low-income women in comparison counties. Adjustment for potentially confounding characteristics did not change the results.
AHRQ	Gielen	2002	Child Safety		Parents of pediatricians' patients were enrolled when the patient was 6 months or younger and observed until 12 to 18 months of age. Pediatricians randomized to a standard-or an enhanced intervention group. N=39 residents, n=187 families.	RCT	Standard-intervention group received safety counseling and referral to the children's safety. Enhanced intervention group received the standard services plus a home-safety visit by a community health worker.	Home observers assessed the following safety practices: reduction of hot-water temperature, poison storage, and presence of smoke alarms, safety gates for stairs, and ipecac syrup.	na	Home visiting was not effective in improving parents' safety practices. Counseling coupled with convenient access to reduced-cost products appears to be an effective strategy for promoting children's home safety. Children's Safety Center visitors had a 3.39 times higher likelihood of having more safety practices observed compared with those who did not ( $P=.01$ )
AHRQ	Krieger	2002	Child Asthma	274	Low-income children with asthma ages 4-12 (n=274)	RCT	High intensity: CHW conducted an initial home environmental assessment, provided client specific action plans and additions visits over a 12 month period to provide education and social support, pest control. Low intensity: also received initial assessment and action plan with limited training/support	Asthma-related quality of life. Asthma symptoms (days with any symptoms in past 2 weeks and nights with symptoms)	2 years	-Gap between the practices recommended in the literature and what is feasible in the home. -Home interventions and participants found the project very useful. -The project was limited in resolving structural housing quality issues that contributed to exposure to indoor triggers. (Qualitative findings)
AHRQ	Morisky	2002	Hypertension	1367	Black (76%) and Hispanic (21%) adults (n=1,367).	RCT	Either usual care or one of three interventions: (a) individualized counseling sessions with community health workers (CHWs), (b) a computerized appointment tracking system, or (c) home visits/focus group discussions with CHWs.	Blood pressure control	12 months	Participants assigned to the patient tracking intervention exhibited the most significant improvement in appointment keeping and blood pressure control status at 6 months ( $p<.05$ ); however, the 12-month follow-up assessments indicated that individualized counseling and home visits resulted in significant, sustained improvements in appointment keeping and blood pressure control status ( $p<.01$ ).
AHRQ	Olds (see also	2002	Maternal and Child Health	1178	Consecutive women from 21 antepartum clinics serving low-income women in the	RCT	Home-visitation program delivered by both nurses and paraprofessionals was based on one tested previously and has 3 broad goals: 1) to improve	Socioeconomic conditions, mental health, personality characteristics, obstetric histories, psycho-active	6, 12, 15, 21, 24 months	For most outcomes on which either visitor produced significant effects, the paraprofessionals typically had effects that were about half the size

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	Korfmacher 1999)				Denver metropolitan area (n=1178)		maternal and fetal health during pregnancy by helping women improve their health-related behaviors; 2) to improve the health and development of the child by helping parents provide more competent caregiving; and 3) to enhance parents' personal development by helping them plan future pregnancies, continue their education, and find work.	drug use, conflict with partners, conflict with their own mothers, and experience of domestic violence.		of those produced by nurses. Paraprofessionals produced small effects that rarely achieved statistical or clinical significance; the absence of statistical significance for some outcomes is probably attributable to limited statistical power to detect small effects. Nurses produced significant effects on a wide range of maternal and child outcomes.
AHRQ	Taylor	2002	Cervical Cancer Screening	402	North American Chinese women in Seattle, Washington, and Vancouver, British Columbia (n=402)	RCT	1 <sup>st</sup> experimental group (outreach worker intervention) received the materials, as well as tailored counseling and logistic assistance, during home visits by trilingual, bicultural outreach workers. 2 <sup>nd</sup> experimental group (direct mail intervention) received the materials by mail. Control group received usual care.	Pap testing in the 6-month interval between random assignment and follow-up survey completion. Secondary outcomes were Pap testing within the last 2 years and plans for Pap testing in the next 2 years.	6 months	50 (39%) of the 129 women in the outreach group, 35 (25%) of the 139 women in the direct mail group, and 20 (15%) of the 134 women in the control group reported Pap testing in the interval between randomization and follow-up data collection (P<.001 for outreach worker versus control, P = .03 for direct mail versus control, and P = .02 for outreach worker versus direct mail). Intervention effects were greater in Vancouver than in Seattle.
AHRQ	Gary	2003	Type 2 Diabetes	149	RCT 186 (149 completed follow-up) urban African Americans with type 2 diabetes	RCT	4 parallel arms: (1) usual care only (2) usual care + nurse case manager (NCM): 45-min face-to-face clinic visits and/or telephone contacts. (3) usual care + community health worker: interventions conducting 45- to 60-min face-to-face home visits and/or telephone contacts. (4) usual care + nurse + case manager/community health worker team. Combined arms 2 and 3.	HbA1c BP Triglycerides	2 year	Compared to the Usual care group, the NCM group and the CHW group had modest declines in HbA1c over 2 years (0.3 and 0.3%, respectively), and the combined NCM/CHW group had a greater decline in HbA1c (0.8%. P = 0.137). After adjustment for baseline differences and/or follow-up time, the combined NCM/CHW group showed improvements in triglycerides (-35.5 mg/dl; P = 0.041) and diastolic blood pressure, compared to the usual care group (-5.6 mmHg; P = 0.042). Conclusions: combined NCM/CHW interventions may improve diabetic control in urban African Americans with type 2 diabetes. This approach deserves further attention as a means to reduce the excess risk of diabetic complications in African Americans.
AHRQ	Levine	2003	High Blood Pressure	471	African American' with high blood pressure from the Sandtown-Winchester community (N=708 at baseline, N=471 at follow-up)	RCT	Census blocks of the community were randomized to either a more or less intensive intervention arm. Less intensive (N = 387): Usual care, Community HBP education, and MBP patient education materials. More intensive (N = 402): Less intensive treatment plus education and counseling, outreach and follow-up, and social support mobilization	Blood Pressure	40 months	More intensive arm had a mean systolic change of -2.7 mm Hg, and a mean diastolic change of -3 mm Hg Less intensive arm's respective changes were -6.5 mm Hg, and -4.6 mm Hg Baseline to follow up within both treatment arms, and for both systolic and diastolic pressures, were significant (P<.05). Difference between the two groups was not significant (P>.10)
AHRQ	Wendell	2003	HIV prevention	6547	Questionnaires from 66 intervention sites and 13 comparison sites in nine state public health regions. Data from 4950 questionnaires collected at intervention sites and 1597 questionnaires collected at comparison sites.	Observational cross sectional	Street outreach to prevent HIV infection in 1998 and/or 1999. Street outreach was conducted in neighborhoods with one or more of the following characteristics: high rates of STD/HIV, high levels of drug use, exchange of sex for money or drugs, 'crack' houses, or injection drug users. During interactions workers were also encouraged to provide condoms, educational materials, bleach kits, coupons for new needles at local pharmacies, and referrals for HIV counselling and testing and services such as substance abuse treatment, STD care and social services.	Condom use at the last sexual encounter.	NA	After controlling for demographic characteristics and sexual risk factors, persons in intervention sites were more likely to use condoms than persons in comparison sites [odds ratio 1.37 (95% confidence interval 1.20, 1.56; P=0.001)]. Contact with an outreach worker mediated condom use. The mechanism of effect may be related to direct contact with an outreach condom distribution rather than to broader community mobilization.
AHRQ	Campbell	2004	Colorectal Cancer	587/287	African American members of 12 rural North Carolina churches (n=587; n= 287 for 50 and older)	RCT	A tailored print and video (TPV) intervention, consisting of 4 individually tailored newsletters and targeted videotapes, with a lay health advisor (LHA) intervention Pre- and post-intervention participant surveys.	Fruit and vegetable consumption, recreational physical activity; fecal occult blood testing screening among those 50 and older	3 months	TPV intervention significantly improved (p <.05) fruit and vegetable consumption and recreational physical activity and, among those 50 and a 15% increase in fecal occult blood testing screening (p <.08). The LHA intervention did not prove

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										effective, possibly because of suboptimal reach and diffusion.
AHRQ	Conway	2004	2 <sup>nd</sup> hand smoke exposure	143	Latino parent-child pairs. Where child was 1–9 years, and exposed to at least six cigarettes a week (n=143)	RCT	Promotoras conducted problem solving aimed at lowering the target child's exposure to ETS in the household through six home and telephone sessions over a four month period.	(1) parent's paper-and-pencil reports of the child's past month exposure; (2) hair samples from the child analyzed for past month nicotine; (3) hair samples from the child analyzed for past month cotinine; and (4) per cent confirmed reducers.	Data collected at baseline, immediately post-intervention, three months post-intervention, and 12 months post-intervention.	No significant condition-by-time interactions. Significant or near significant time main effects were seen for children's hair cotinine, per cent confirmed reducers, and, in particular, parent reports of exposure.
AHRQ	Forst	2004	Eye injuries	786	Latino farm workers on 34 farms (n=786)	Prospective cohort	Three intervention blocks: (A) CHWs provided protective eyewear and training to farm workers (B) CHWs provided eyewear but no training to farm workers (C) eyewear was distributed to farm workers with no CHW present and no training. Promotores carried eye problem forms and recorded any eye injury or illness.	Percent of farm workers wearing safety glasses before and after study. Knowledge of subjects regarding eye injuries and their prevention Risk perception around eye injuries before and after study. Number of eye injuries. by	16 weeks	Greater self-reported use of eyewear in all blocks after the intervention (P < 0.0001), with Block A showing the greater change compared to B (P < 0.0001) and C (P 1/4 0.03); this was supported by field observations. Block A showed the greatest improvement in knowledge on questions related to training content.
AHRQ	Hunter	2004	Chronic Disease Prevention	103	Hispanic Women aged 40 and older at the US-Mexico border (n=103)	RCT	Postcard arm (control group); Promotora arm (intervention group) assisted with scheduling appointments	Self-report Survey about exam usage.	na	Receiving the promotora intervention was associated with a 35% increase in rescreening over the postcard-only reminder (risk ratio [RR] = 1.35, 95% confidence interval 0.95-1.92). <b>Study Conclusion:</b> Using promotoras to increase compliance with routine screening exams is an effective strategy for reaching this female population [but CI includes 1].
AHRQ	LeBaron (see also Rask 2001)	2004	Vaccination	3050	Children (76% black, 14% Hispanic, 7% white, and 3% other) median age: 9 months range 1-14months (n=3050).	4 group RCT	Each child was randomly assigned to 1 of 4 groups: control (usual care), autodialer (automated telephone or mail reminder recall), outreach (in-person telephone, mail, or home visit recall), and combination (autodialer with outreach backup). Interventions continued until the child reached 24 months of age.	Completion by the age of 24 months of the 4-3-1-3 vaccination series based on intention-to-treat analysis.	3 years	The three intervention groups had series completion rates 3% to 6% higher than the control group, but this was significant only for the autodialer group (P=.02). Coverage did not vary significantly within intervention exposure (exposed, 38% vs nonexposed, 40%; P=.49). Conclusion: large-scale, registry-based reminder-recall interventions produced only small improvements in low immunization rates of an inner-city population.
AHRQ	Olds	2004	4 year follow-up to Olds 2002		See Olds 2002	RCT	See Olds 2002	See Olds 2002	4 years	Paraprofessional-visited mothers began to experience benefits from the program 2 years after the program ended at child age 2 years, but their first-born children were not statistically distinguishable from their control group counterparts. Nurse-visited mothers and children continued to benefit from the program 2 years after it ended. The impact of the nurse-delivered program on children was concentrated on children born to mothers with low levels of psychological resources.
AHRQ	Vetter (see also Gary 2003, 2005; Batts 2001)	2004	Type 2 Diabetes	186	African American adults from east Baltimore with type 2 diabetes. (n=186)	4 arm RCT	Control group: quarterly newsletter on diabetes health Nurse Case Manager (NCM): 45min face-to-face clinic visits and/or telephone contact, coordinated care according to American Diabetes Association Clinical	1. HBA1c (now referred to as A1C), 2. Lipid profiles (including HDL, and LDL cholesterol, and triglycerides) 3. Blood pressure.	2 years	All three experimental groups showed improved diabetes control compared to usual care control group. NCM and CHW individual groups experienced similar reductions in A1C (-0.31 and --.30 respectively), NCM+CHW combined group

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							Practice Recommendations (direct patient care, management, education, counseling, follow-up, referrals, and physician feedback and prompting) CHW: 45- to 60-minute home preventive care visits, assisted with scheduling appointments, monitoring participant and family behavior, reinforcing adherence to treatment recommendations, mobilizing social support, and providing physician feedback CHW + NCM: both group treatments with an additional biweekly conference to coordinate interventions and promote synergy.			experienced an even greater decline (-0.80). These findings were not statistically significant but were large enough to be clinically important.
AHRQ	Becker	2005	Cardiovascular Disease		Black 30- to 59-year-old siblings subjects with a family history of premature coronary heart disease (CHD)	Two intervention RCT	Two intervention RCT: “community-based care” (CBC, n=196) and “enhanced” primary care (EPC, n=168). The CBC group received care by a nurse practitioner and a community health worker in a community setting.	LDL-C level, systolic and diastolic blood pressure, and in the 10-year Framingham Risk Score (FRS) for CHD events.	1 year	The CBC group was 2 times more likely to achieve goal levels of LDL cholesterol and blood pressure compared with the EPC group (95% CI, 1.11 to 4.20 and 1.39 to 3.88, respectively) with adjustment for baseline levels of age, sex, education, and baseline use of medications. The CBC group demonstrated a significant reduction in global CHD risk, whereas no reduction was seen in the EPC group (P<0.0001).
AHRQ	Dignan	2005	Breast Cancer Screening	157	Urban Native American Women 40 years and older living in greater Denver metropolitan area who had not had a mammogram within previous 18 months (n=157)	RCT	Social Cognitive Theory-based intervention - a tailored education program developed to address individual risk factors for breast cancer.	Follow-up care adherence	6 months	No difference in change from pretest to posttest between the telephone and face-to-face groups. Navigators can be effective in increasing adherence to recommendations for screening mammography among urban American Indian women.
AHRQ	Elder	2005	Diet	357	Spanish-Dominant Latinas age 18-65 from two San Diego County areas (n=357)	Three-group RCT	Three-group randomized controlled trial: (1) personalized dietary counseling via lay health advisors (promotoras) plus tailored print materials delivered via the mail, (2) tailored mailed print materials only, and (3) targeted mailed “off-the-shelf” materials targeted to Spanish-speaking Latinos (control).	Fat intake and number of grams of dietary fiber.	1 year	Promotora group achieved significantly lower levels of total fat grams, and lower levels of energy intake, total saturated fat, total carbohydrates, glucose, and fructose than the targeted group. However, longitudinal analyses suggest the effects achieved by the promotoras dissipated over the 12-month follow-up period while the effects of the tailored group concurrently improved.
AHRQ	Gary (see also Gary 2003; Batts 2001; Vetter 2004)	2005	Type 2 Diabetes	542	Urban African Americans with type 2 diabetes	RCT	Study in two phases: Project Sugar 1 (1994-1999) piloted a 4-arm clinic and home-based intervention using nurse case management and community health workers (n=186) urban African Americans with type 2 diabetes Project Sugar 2 (2000-2005) examined the effectiveness of this intervention (n=542). Project Sugar 1: (1) nurse case manager (NCM) (2) community health worker (CHW), (3) combined NCM and CHW interventions (4) control Project Sugar 2: CHWs see patients in the home to assess blood pressure, blood glucose, weight, health behaviors, and psychosocial issues and to provide diabetes education for the patient and diabetes-related counseling to the family/support network, as needed. The NCM sees patients in the clinic to assess clinical issues using clinical algorithms, particularly for foot screening, medication, depression, and evaluation of clinical signs and symptoms reported by patients.	Project Sugar 2: (1) sociodemographic characteristics (2) laboratory and physical assessments of clinical parameters (HbA1c, lipids, blood pressure, weight) (3) health care use (preventive health care, emergency department visits, hospitalizations), (4) health behaviors (blood glucose self-monitoring, foot care, diet, physical activity, adherence), (5) patient-centered factors (patient satisfaction, SF-36 health status) (6) psychosocial factors (depression, social support, problem solving).	24 months	The highest effectiveness is given to the NCM use of standardized algorithms and CHWs’ in-home monitoring of blood glucose, blood pressure, and weight for identifying clinical abnormalities and directing what intervention(s) to employ, as derived from clinical practice recommendations. (P values not stated)



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AHRQ	Jandorf	2005	Colorectal Cancer Screening	78	Patients attending a primary care practice in East Harlem, New York City (n=78)	RCT	Patient Navigator educated the participant about any additional information on both screening techniques and to begin navigation services. Served to identify those participants who made appointments before receiving navigator services. If necessary, the PN reviewed the collection technique and return procedure for FOBT cards. At this time, she addressed any barriers that the participant described with regard to collecting the specimens.	Completion of a fecal occult blood test	6 Months	Within 6 months of physician recommendation, 15.8% in the PN+ group had complied with an endoscopic examination, compared with only 5% in the PN- group (P = .019). The PN+ group also demonstrated higher rates of fecal occult blood test completion (42.1% vs. 25%, P=.086). Thus, a PN system successfully increases CRC screening rates among a predominantly minority population of low socioeconomic status.
AHRQ	Krieger	2005	Childhood Asthma	214	Low-income children with asthma ages 4-12 (n=214)	RCT	Randomly assigned participants to either a comprehensive intervention arm ("high intensity") or a minimal intervention arm ("low intensity"). The 1-year-long high-intensity intervention was provided by CHWs, as described in prior publication.	The high-intensity intervention yielded significantly greater benefit in caregiver quality-of-life (GEE group × time interaction coefficient=0.58 points [95% confidence interval (CI)=0.18, 0.99], P=.005, NNT=4.8), with the difference in the change across groups exceeding the clinically significant threshold of 0.528. Urgent health services use declined significantly more in the high-intensity group (GEE group × time interaction coefficient=-0.97; 95% CI= -1.82, -0.12; P=.026; NNT=12.9).	1 year	<b>Study Conclusion:</b> Our findings indicate that a Healthy Homes intervention in which community health workers provide education and support to reduce exposure to in-home asthma triggers can reduce asthma morbidity and health service use. Further work will define the place of this approach in the broader context of asthma control.
AHRQ	Welsh	2005	Breast Cancer Screening	209	Churches in Colorado that received educational printed materials in Spanish and English (the printed statewide intervention) and four churches in the Denver area that received personalized education from promotoras, or peer counselors (the promotora intervention), in addition to the printed statewide intervention (n=209)	Retrospective cohort	Biennial Medicaid mammogram claim rates in Colorado before the interventions (1998–1999) and after (2000–2001) were used to compare the effect of the interventions on mammogram use among Latinas and non-Latina whites aged 50 to 64 years who were enrolled in the Medicaid fee-for-service program.	Mammography screening status	Intervention (January 1998–December 1999) with those obtained during a follow-up period (January 2000–December 2001)	Small, nonsignificant increases in screening were observed among Latinas exposed to the promotora intervention (from 25% at baseline to 30% at follow-up [P = .30]) as compared with 45% at baseline and 43% at follow-up for the printed statewide intervention (P = .27). Screening among non-Latina whites increased by 6% in the promotora intervention area (from 32% at baseline to 38% at follow-up [P = .40]) and by 3% in the printed statewide intervention (from 41% at baseline to 44% at follow-up [P = .02]). No significant disparities in breast cancer screening were detected between Latinas and non-Latina whites. Promotora intervention had a marginally greater impact than the printed statewide intervention in increasing mammogram use among Latinas (generalized estimating equation, P = .07).
AHRQ	Katz	2006	Cervical Cancer Screening	897	Women from three racial groups (white, African American, Native American) living in a rural county in North Carolina (n=897).	RCT	Educational program focused on mammography delivered by a lay health advisor, and the control group received a physician letter/brochure focusing on Pap tests.	Data from the baseline and follow-up surveys	12–14 months	Women in both the intervention (OR 1.70; 1.31, 2.21, p=0.001) and control groups (OR 1.38; 1.04, 1.82, p=0.025) significantly increased cervical cancer screening rates within risk appropriate guidelines. Nonsignificant increase in Pap test completion in women categorized as low risk for cervical cancer (OR 1.25; 0.87, 1.79, p=0.221). Conclusion: the study suggests that women in an intensive behavioral intervention designed to increase mammography use may also increase Pap test completion, similar to a minimal intervention focused only on increasing Pap test completion.
AHRQ	Paskett	2006	Mammography	851	Low-income, triracial women who had not had a mammogram within the past year were randomly assigned	RCT	Started 2–4 weeks following completion of the baseline survey and consisted of an intensive, face-to-face interactive educational program. Intervention was administered over a 9- to 12-month period and	Rates of mammography use after 12–14 months (as verified by medical record review) were	12–14 months	Compared with those in the comparison group, women in the LHA group displayed statistically significantly better belief scores (difference = 0.46 points on a 0–10 scale, 95% CI = 0.15 to 0.77)

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					to the LHA intervention (n = 433) or to a comparison arm (n = 418) in rural Robeson County, NC		consisted of three in-person visits, with educational materials provided and follow-up phone calls and mailings after each visit.	compared using a chi-square test. Baseline and follow-up		and reduced barriers at follow-up (difference = – 0.77 points, 95% CI = – 1.02 to – 0.53), after adjusting for baseline scores.
AHRQ	Lujan	2007	Diabetes	150	Mexican Americans recruited at a Catholic faith-based clinic and randomized into 2 groups (n=150).	RCT	Culturally specific 6-month intervention was developed with collaboration from clinic promotoras and patients. Participative group classes and telephone follow-up to the intervention participants.	HgbA1c	6 months	No significant changes were noted at the 3-month assessment, but the mean change of the A1C levels, $F(1, 148) = 10.28$ , $P < .001$ , and the diabetes knowledge scores, $F(1, 148) = 9.0$ , $P < .002$ , of the intervention group improved significantly at 6 months, adjusting for health insurance coverage. <b>Conclusion:</b> Intervention resulted in decreased A1C levels and increased diabetes knowledge, suggesting that using promotoras as part of an interdisciplinary team can result in positive outcomes for Mexican Americans who have type 2 diabetes.
AHRQ	Mock	2007	Cervical Cancer Screening	1005	Vietnamese American women (n=1005)	RCT	2 groups: lay health worker outreach plus media-based education (combined intervention) or media-based education only. Lay health workers met with the combined intervention group twice over 3 to 4 months to promote Papanicolaou (Pap) testing.	Primary outcomes were (1) having ever obtained a Pap test and (2) being up-to-date for Pap tests, defined as having obtained a first test or having obtained a test after a lapse of more than 1 year. Secondary outcomes were changes in participants' awareness of cervical cancer and beliefs about causes; knowledge about which types of women should obtain Pap tests; and intention to obtain a test.	3-4 months	Testing increased among women in both the combined intervention (65.8% to 81.8%; $P < .001$ ) and media-only (70.1% to 75.5%; $P < .001$ ) groups, but significantly more in the combined intervention group ( $P = .001$ ). Among women never previously screened, significantly more women in the combined intervention group (46.0%) than in the media-only group (27.1%) obtained tests ( $P < .001$ ). Significantly more women in the combined intervention group obtained their first Pap test or obtained one after an interval of more than 1 year (became up-to-date; 45.7% to 67.3%, respectively; $P < .001$ ) than did those in the media-only group (50.9% to 55.7%, respectively; $P = .035$ ).
AHRQ	Sauaia (see also Welsh 2005)	2007	Breast Cancer	209	209 catholic churches, predominately Latinas in Colorado. Printed intervention: baseline to follow-up (58% [2979/5130] vs 58% [3338/5708]) Promotora Intervention: the rate was 59% (316/536) at baseline and 61% (359/590) at follow-up	Retrospective cohort	Printed Intervention: 209 Colorado Catholic churches for their use. Promotora Intervention: Four Catholic churches delivered breast-health education messages personally.	Biennial mammography screening status in each study period	na	Printed intervention: baseline to follow-up (58% [2979/5130] vs 58% [3338/5708]) Promotora Intervention: the rate was 59% (316/536) at baseline and 61% (359/590) at follow-up. Promotora Intervention had a higher increase in biennial mammograms than those exposed to the printed intervention (GEE parameter estimate = .24 [ $\pm .11$ ], $P = .03$ ). <b>Study Conclusion:</b> Results suggest, rather than provide firm evidence, that the Promotora Intervention is more effective than the Printed Intervention in increasing breast cancer screening rates among Latinas.
AHRQ	Beckham	2008	Diabetes	116	Primarily (74%) Native Hawaiian and Samoan participants with HbA1c greater than 10%. (n=116)	Prospective cohort	Multidisciplinary team representing family practice, internal medicine, chronic disease management, traditional. Supportive services offered as needs were identified by the CHWs, primary care providers, and patients themselves. Diabetes self-management education conducted by CHWs	HbA1c.		The 80 participants who completed CHW intervention had a 2.2 $\pm$ 1.8%, compared with baseline) mean reduction in HbA1c, compared with a 0.2 $\pm$ 1.5% reduction for those without CHW intervention ( $p < .01$ ).
AHRQ	Hiatt	2008	Breast and Cervical Cancer		Pretest (n=1,599) and posttest (n=1,616) women (age 40-75) in multiethnic underserved area comprised of eight neighborhoods and their clinics.	2x2 factorial design	LHWs interacted with women on an ongoing and personal basis to achieve maintenance of periodic screening through three channels: one-on-one visits at various events and locations; presentations to community-based organizations (agencies); and Women's Health Days, offering free mammograms, Pap tests, and breast self-examination instruction.	Self-report survey	4 years	Analyses of community survey results showed no significant improvement in reported screening behaviors. Reports of mammography in the intervention areas in the previous 2 years, or for Pap smear in the previous 3 years, did not differ significantly

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AHRQ	Parker	2008	Children's asthma	298	Households in Detroit, Michigan, with a child, aged 7 to 11, with persistent asthma symptoms participated (n=298)	RCT	The aim was to work with the family in making environmental changes in the home to reduce the child's exposure to multiple common asthma triggers.	Child's asthma symptom frequency	1 year	The intervention was effective in increasing some of the measures of lung function (daily nadir Forced Expiratory Volume at one second [P= .03] and daily nadir Peak Flow [P= .02]), reducing the frequency of two symptoms ("cough that won't go away," "coughing with exercise"), reducing the proportion of children requiring unscheduled medical visits and reporting inadequate use of asthma controller medication, reducing caregiver report of depressive symptoms, reducing concentrations of dog allergen in the dust, and increasing some behaviors related to reducing indoor environmental triggers.
AHRQ	Wilson	2008	Breast Cancer Prevention		40 salons in an urban, minority area were randomly assigned to provide messages to clients or to serve as controls. Pre-intervention surveys were completed by 1,185 salon clients. Following program initiation, assessments of 1,210 clients were conducted.	Repeated cross-sectional survey with random assignment	Education, counseling, and information including the location of local screening services were delivered by salon stylists during appointments with their clients.	7-question self-report instrument provided to customers by program staff. Asked whether they had conducted a monthly BSE for the last 3 months, if they had had a CBE in the last 3 months, whether they intended to have a CBE in the next 12 months, whether they had received a mammogram in the last 3 months, and whether they intended to have a mammogram in the next 12 months. did not ask women about actual appointments for CBE or mammography, but instead focused on behavioral intentions to receive these services. Last questions on the survey asked the woman's age and if she had received information on breast health from her stylist during the last 3 months.	3 months	Among women completing surveys at control salons, 10% reported exposure to breast health messages, as opposed to 37% at experimental salons (OR 5.4, 95% CI 3.7–7.9). Self-reported exposure to stylist-delivered messages was associated with improved breast self-examination rates (OR 1.6, 95% CI 1.2–2.1) and with greater intentions to have a clinical breast examination (OR 1.9, 95% CI 1.1–3.3).
NECEPAC	Sixta	2008	Type 2 Diabetes	131	Mexican Americans with type 2 diabetes who were patients at a Texas-Mexico border community clinic (n=131)	RCT	Promotores-led 10-week self-care management group intervention versus usual care control group.	Diabetes Knowledge Questionnaire HbA1c HBQ	6 months	Hypoth 1: Patients who attend diabetes self-management classes taught by promotores will report increased knowledge of the disease as measured by the DKQ: The DKQ scores showed significant changes over time, $F(1, 129) = 4.77$ , $P = .0308$ , and in treatment by time, $F(2, 168) = 5.85$ , $P = .0035$ . The first hypothesis was supported. Hypoth 2: Patients who participate in regular and consistent goal setting and follow-up as part of the diabetes self-management classes will report strengthened health beliefs as measured by the HBQ compared with those in the wait-list control group.: comparing the intervention and the control groups, the HBQ mean scores at 0-, 3-, and 6-month intervals did not show a significant change between groups. The hypothesis was not supported. Hypoth 3: Patients who are taught, followed up, and supported by promotores through a structured diabetes self-management course will demonstrate improved diabetes control: In comparing the intervention and the control groups, the HbA1c means at 0-, 3-, and 6-month intervals showed no significant change between groups. The hypothesis was not supported.

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Source	Author	Year	Health conditions of interest	N	Population studied	Research Design	Study/Intervention	Outcome measures	Follow-up period	Key findings
NECEPAC	Babamoto	2009	Type 2 diabetes		Newly-diagnosed Hispanic/Latino adults attending inner-city health centers	RCT	Prospective randomized pre–post measurement design.	Self-reported health status Self-reported ED admissions BMI A1c		Significant increase in reported “very good” or “excellent” health No significant change in self-reported ED admissions. 2.9 times greater odds of decreased BMI. Significant decrease in A1c .
NECEPAC	Balcazar	2009	Hypertension	98	Medically underserved Mexican Americans of the El Paso, Texas area diagnosed with hypertension. (n=58 (intervention), n=40 (control).	RCT	9-week promotora intervention.	Health behavior constructs and clinical data were measured pre-post intervention: blood pressure, BMI and waist circumference, self-reported behaviors and attitudes and beliefs about blood pressure.	9 weeks	Improvements in blood pressure, BMI and waist circumference. Improvement in two heart-healthy behaviors (salt and sodium, and cholesterol and fat).
NECEPAC	Fisher	2009	Asthma	191	Children hospitalized for asthma aged 2 to 8, of African American ethnicity, and having Medicaid coverage (n=191).	RCT	Coaches reinforced basic asthma education and encouraged key management behaviors through home visits and phone calls , emphasizing a nondirective supportive style.	The reach of intervention to parents, contacts with coaches, and rehospitalization over 2 years based on hospital records.	24 months	35 of 96 (36.5%) children rehospitalized in the asthma coach group and 55 of 93 (59.1%) in the usual care group (P<.01), controlling for parental education and child age, sex, and hospitalization in the year prior to the index hospitalization. In surveys, parents indicated the importance of the nondirective approach to support.
NECEPAC	Krieger	2009	Asthma	271	Children 3-13 years of age with asthma from low-income households (n=271 completed).	RCT	(nurse-only group) asthma education and support only in clinics from nurses (nurse + CHW group) asthma education and support from both clinics nurses and in participants’ homes from CHWs (4.5 visits plus telephone calls)	Asthma symptom–free days Pediatric Asthma Caretaker Quality of Life Scale score Use of urgent health services.	N/A.	-Caretaker quality of life increased in both groups (nurse-only group: 0.4 points; 95% [CI], 0.3-0.6; nurse+CHW group: 0.6 points; 95% CI, 0.4-0.8) -Number of symptom-free days in the past 2 weeks increased (nurse-only group: 1.3 days; 95% CI, 0.5-2.1; nurse+CHW group: 1.9 days; 95% CI, 1.1-2.8) -Proportion of participants who used urgent health services in the prior 3 months decreased (nurse-only group: 17.6% absolute decrease; 95% CI, 8.1%-27.2%; nurse+CHW group: 23.1%; 95% CI, 13.6%-32.6%) -Caretaker quality of life improved more in the nurse+CHW group than in the nurse-only group (0.22 points; 95% CI, 0.00-0.44; P=.049), though did not exceed clinical threshold of 0.5 points -number of symptom-free days increased by 0.94 more days per 2 weeks (95% CI, 0.02-1.86; P=.046), or 24.4 more days per year, in the nurse+CHW group. -odds ratio comparing use of urgent health services in the nurse+CHW group with the nurse-only group was 0.69 (95% CI, 0.38-1.26; P=.23).
NECEPAC	Nguyen	2009	Breast Cancer screening	1100	Vietnamese-American women aged 40+ years in California. Recruited through lay health worker (LHW) social networks (n=1100).	RCT	Intervention group received two LHW educational sessions and two telephone calls Both groups received targeted media education (ME).	Change in self-reported receipt of mammography ever, mammography within 2 years, clinical breast examination (CBE) ever, or CBE within 2 years.	Two years	The LHW group significantly increased receipt of mammography ever and mammography in the past 2 years while the control group did not. Both groups increased receipt of CBE ever, but the LHW group had a significantly greater increase. The results were similar for CBE within 2 years. LHW group was significantly more effective than control for all four outcomes.
NECEPAC	Balcazar	2010	CVD	328	Hispanic border Community in El Paso, Texas, individuals with at least 1 CVD risk factor. N=192 (intervention), n=136 (control).	RCT	Series of 8 health classes over 2 months using the Su Corazón, Su Vida curriculum. Control group received basic educational materials only.	Changes in health behaviors and clinical measures: salt and cholesterol intake, weight control practices, total cholesterol, non–HDL cholesterol and LDL cholesterol.	2 months	Improved awareness of CVD risk factors, more confidence in control of these factors, lower salt and cholesterol intake and better weight control practices. Total cholesterol 3% lower, and non–HDL cholesterol and LDL cholesterol were both 5% lower.
NECEPAC	Hayashi	2010	CVD	1093	Hispanic women meeting socioeconomic eligibility criteria at four community health centers in Los Angeles	RCT	Lifestyle counseling focusing on health behaviors provided by bilingual, bicultural CHWs. Controls received usual care.	Two outcome measures: changes in health behaviors; and changes in the CVD risk profile, as measured by the 10-year probability of	1 year	Intervention group experienced more improvements in eating habits and physical activity. The improvement in the 10-year CHD risk was greater for intervention group.

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Source	Author	Year	Health conditions of interest	N	Population studied	Research Design	Study/Intervention	Outcome measures	Follow-up period	Key findings
					and San Diego counties. n=552 (intervention), n=541 (control).			having a coronary heart disease (CHD) event.		
NECEPAC	O'Brien	2010	Cervical Cancer	120	All 120 Hispanic Women (n=120).	RCT	Four promotoras led a series of two, 3-hour workshops including between 4 and 10 women community members in each group covering content related to cervical cancer. Control group received usual care.	Sociodemographic characteristics, cervical cancer risk, previous screening history, cervical cancer knowledge, and self-efficacy were measured by a pre-intervention questionnaire. The post-intervention questionnaire measured: cervical cancer knowledge (on a 0–6 scale), self-efficacy (on a 0–5 scale), and receipt of Pap smear screening during the previous 6 months (dichotomous).	6 months	Follow-up data revealed significantly greater improvements in the intervention group in all outcome measures. Cervical cancer knowledge and intervention group assignment were significantly associated with receiving a Pap smear during the follow-up period.
NECEPAC	Scoggins	2010	Cervical Cancer	234	Vietnamese women in the Seattle, Washington area who had not received a Pap test in the last three years (n=234).	RCT	Experimental group received a cervical cancer lay health worker intervention. Control group participants received a mailing of physical activity print materials and a pedometer with instructions for use.	Primary trial outcome was Pap testing completion within six months of randomization. Outcome ascertainment was based on both follow-up survey responses and medical record reviews.	6 or 12 months	Incremental cost-effectiveness ratio (ICER) of \$30,015 per quality-adjusted life year.
NECEPAC	Taylor	2010	Cervical Cancer	234	Vietnamese American women who had not received a Pap test in the last 3 years (n=234).	RCT	Lay health worker home visit using two lay health workers, both of them fluently bilingual ethnic Vietnamese women who had grown up in Vietnam and were conversant with Vietnamese culture.	Completion of Pap testing within 6 months of randomization. Outcome ascertainment was based on responses to a follow-up survey verified where possible by medical records.	6 months	Ever-screened experimental group women were significantly more likely to report Pap testing ( $P<.02$ ) and to have records verifying Pap testing ( $P<.04$ ) than were ever-screened control group women. No significant differences for women who had never been screened.
NECEPAC	Paskett	2011	Cervical cancer screening	286	Women from 14 Ohio Appalachian clinics (n=286). in need of a Pap test were randomized to receive either usual care or an LHA intervention over a 10-month period. 286 women, 145 and 141 were randomized to intervention and usual care arms, respectively.	RCT	Two in-person visits with an LHA, two phone calls, and four postcards.	Both self-report and medical record review (MRR) data (primary outcome).	12 months	In MMR, more women in the LHA arm had a Pap test by the end of the study compared with those randomized to usual care (not significant). However, there was a significant improvement according to self-reporting.
NECEPAC	Spencer	2011	Type 2 Diabetes	164	African American and Latino adult participants recruited from 2 health systems in Detroit, Michigan (n=164).	RCT	Randomized, 6-month delayed control group design. CHWs provided participants with diabetes self-management education and regular home visits, and accompanied them to a clinic visit during the 6-month intervention period.	Hemoglobin A1c (HbA1c) level Self-reported diabetes understanding.	6 months	Mean HbA1c value improved from 8.6% at baseline to 7.8% at 6 months ( $P<.01$ ). No change in mean HbA1c among the control group. Intervention participants also had significantly greater improvements in self-reported diabetes understanding compared with the control group.
NECEPAC	Bernstein	2012	STI/HIV	802	Out-of-treatment heroin/cocaine users at an emergency department visit (n=802)	RCT	Brief motivational intervention (B-MI) added to point-of-service testing, counseling and drug treatment referral. B-MI involves a conversation about the client's goals, an exploration of pros and cons of condom use with main, casual and transactional sex partners, and sex while high. Benefits and challenges of change were used as points of negotiation, and a Readiness to Change Ruler	Predictors of Change in The Number and Percentage of Non-Protected Sex Acts and Sex While High B-MI Versus VC/T	6 and 12 months	No significant differences between control and intervention conditions in distribution of laboratory test positives, self-report of vaginal or penile discharge, or sexual risk behaviors at either 6 or 12 months post-enrollment. Both groups reported similar contact with detox or other substance abuse treatment services ( $\chi^2 = 0.2769$ , $df\ 1$ , $p = 0.5987$ ). Improvement in condom use was equal in both groups. no difference by intervention status in the number of sex partners at 6 months ( $Z = 1.793$ , $p = 0.073$ ). Reduction sexual partners and non-protected sex continued at 12months but no difference between groups ( $Z = 1.446$ , $p = 0.149$ )

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NECEPAC	Coleman	2012	CVD	1093	Low-income Latinas in Californian screened for CVD risk factors = 552 (intervention), n = 541 (control).	RCT	One-on-one counseling sessions by community health workers. Controls received usual care.	Self-reported readiness to change and physical activity.	12-month	A higher percentage (67%) of the enhanced intervention group was in the action/maintenance stage for vigorous physical activity at follow-up compared with baseline (47%). No such change among women in usual care (52%, baseline; 58%, follow-up). A higher percentage of the enhanced intervention group also reported significant increases in moderate (71%, baseline; 84%, follow-up) and vigorous (13% to 33%) physical activity at follow-up than at baseline. Women in usual care reported no changes.
NECEPAC	Larkey	2012	Cancer Screening	1006	Community-based group randomized trial. 1006 Latinas due for breast, cervical, or colorectal cancer screening.	RCT	Six 80min Promotora-taught sessions. Cancer screening/prevention classes delivered individually (IND) or in social support groups (SSG) over 8 weeks	Screening behavior	15 months	Screening and maintenance behaviors were not significantly different between SSG and IND for any one type of cancer screening, but with a study entry requirement that participants were either never screened or due for screening, postintervention screening rates (that is, completing a screening that was due) were notable (39.4% and 45.5%, respectively). The cost of achieving any one screening was much higher for IND participants. Conclusion: SSG vs. IND delivery did not significantly affect cancer screening behaviors, but both interventions produced robust achievement of screenings for previously nonadherent participants. Group-based promotora-led interventions supporting social involvement are recommended as a more cost-effective approach to achieving cancer screening among Latina women.
NECEPAC	Roth	2012	HIV	449	HIV-positive adults in the greater Indianapolis area who spoke English fluently. n= 91 (treatment), n=358 (control).	RCT	LHWs acted as “health coaches,” using behavioral change and motivational techniques to encourage the PLWH to be an active participant in the management of his/her illness and achieve greater adherence to medication regimens and more appropriate use of health care. Particular attention was given to building a strong and trusting relationship between the LHW and the PLWH.	Medication possession ratio (MPR), an indicator of adherence, for the year following enrollment, drawn from pharmacy claims data.	12 Months	PC clients were 16% more likely to have undetectable viral loads than clients in standard care. Incremental program cost was approximately \$10,000 for each additional person who achieved an undetectable viral load.
NECEPAC	Studts	2012	Cervical Cancer		Women aged 40–64 overdue for screening recruited from churches and individually in four Appalachian Kentucky counties.	RCT	Faith-placed lay health advisor (LHA) home visits and newsletters addressing barriers to screening.	Self-reported Pap test receipt	Six months	Treatment group had over twice the odds of wait-list controls of reporting Pap test receipt post-intervention (P=0.04).
NECEPAC	Wang	2012	Chronic Illness		Recently released prisoners with a chronic medical condition or older than 50 years.	RCT	Transitions Clinic, a primary care–based care management program with a community health worker, versus expedited primary care.	Main outcomes were (1) primary care utilization (2 or more visits to the assigned primary care clinic) and (2) emergency department (ED) utilization (the proportion of participants making any ED visit).	12-month	Both groups had similar rates of primary care utilization (37.7% vs 47.1%; P = .18). Transitions Clinic participants had lower rates of ED utilization (25.5% vs 39.2%; P = .04).
NECEPAC	Katula	2013	Diabetes	301	Individuals with prediabetes (fasting blood glucose 95-125 mg/dL) at community-based sites.	RCT	CHW-led program to decrease caloric intake and increased physical activity, and usual care group receiving two visits with a registered dietitian and a monthly newsletter.	Fasting blood glucose, insulin, insulin resistance, body weight, waist circumference, and BMI.	24 months	Participants experienced significantly greater decreases in fasting glucose, insulin, insulin resistance, body weight, waist circumference, and BMI.
NECEPAC	Lawlor	2013	Diabetes	301	Individuals with prediabetes in Forsyth County NC.	RCT	Diabetes education program delivered by CHWs, trained and supported by registered dietitians. CHWs were community members with well-controlled diabetes. CHWs led lifestyle groups, managed participants, and collected attendance	Direct medical costs, direct nonmedical costs, and indirect costs. Research costs are excluded.	2 years	Direct medical costs per capita for participants in the usual care group were \$142 and \$850 for lifestyle weight-loss participants. Per capita direct costs of care outside the study were \$7454 for the usual care group and \$5177 for the lifestyle weight-loss group. Per capita direct nonmedical

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							data. The usual care group received two visits with a registered dietitian and monthly newsletters.			costs were \$12,881 for the usual care group and \$13,836 for the lifestyle weight-loss group.
GWU	Godecker	2013	Psychosocial risk in pregnancy (N.B. Interesting study but not focused on health outcomes)	733	Predominantly young, unmarried (prenatal) African American women attending the largest community health care center in Minneapolis metropolitan area	Interviewer equivalence study	Screening instrument called The PRO Either a community health worker or a registered nurse conducted the interview based on day of the week. A comparison of identified risk factors found no significant differences between study samples for six of 13 domains	Risk assessment results collected by CHWs were compared to those collected by RNs.		Significantly more participants were classified by CHWs as Moderate/ High Risk of Risk for Depression, Lack of Telephone Access, Food Insecurity, and Housing Instability, Lack of Social Support, Lack of Transportation Access, and Housing Instability. RNs classified significantly more participants as High Risk for Alcohol Use. <b>Study Conclusion:</b> CHWs successfully conducted psychosocial risk screening and elicited more self-reported risk than RNs, especially lack of basic needs.
GWU	Han	2013	Dementia (N.B. Interesting study but not focused on health outcomes)	90	Community-dwelling Korean-Americans aged 60 or older in the Baltimore–Washington metropolitan area	Cross-sectional validation study	Determined the level of agreement between dementia rating by trained community health workers (CHWs) based on the Clinical Dementia Rating (CDR) and the criterion standard: physician diagnosis.	Cognitive impairment through CDR score		CHWs rated 61.1% of the participants as having mild cognitive impairment dementia versus 56.7% diagnosed by the clinician. A receiver operating characteristic curve analysis demonstrated good predictive ability of CDR rating by trained CHWs
GWU	Hawkins	2013	Diabetes	180	African American and Latino adult residents of 2 Detroit, Michigan, low-income communities	Non-randomized one group cohort study	African American–centered Journey to Health and Latino-centered El Camino a la Salud curricula were culturally and linguistically tailored to each population using a community-based participatory approach and delivered during 11 group meetings to improve diabetes-related lifestyle and self-management behaviors and clinical outcomes.	Study completion rate. Intervention class attendance. Home visits by CHWs. Doctor visits with CHWs. HBA1C	1 year	Among Latinos, men were less likely than women to complete the study, attend group classes, and complete CHW home visits. There were no gender differences in participation seen among African Americans.
GWU	Islam	2013	Diabetes	48	Korean Americans at risk of diabetes in New York City	RCT	Small pilot RCT. 6 workshops held by CHWs on diabetes prevention, nutrition, physical activity, diabetes complications, stress and family support, and access to health care.	Weight, BMI, waist circumference, blood pressure, glucose, and cholesterol; health behaviors (physical activity, nutrition, food behaviors, diabetes knowledge, self-efficacy, and mental health); and health access (insurance and self-reported health).	6 months	Changes were seen in weight, waist circumference, diastolic blood pressure, physical activity nutrition, diabetes knowledge, and mental health but these were not significant between treatment and control. <b>Study Conclusions:</b> findings demonstrate that a diabetes prevention program can be successful among a Korean American population in NYC, and important insight is provided for ways that programs can be tailored to meet the needs of vulnerable populations
GWU	Kenya	2013	HIV	91	African-Americans living with HIV in Miami, Florida with viral loads $\geq 1,000$ and/or a CD4 cell count $\leq 350$	RCT	CHW training and intervention informed by the Partners in Health (PIH) Prevention, Access, Care, and Treatment (PACT) programs in Haiti and in Boston. Intervention lasted 12 months.	Viral load and CD4 cell count .	12 months	Mean viral load in the intervention group was log 0.9 copies/uL lower than the control group ( $p < 0.01$ ). CD4 counts were not significantly different among the groups.
GWU	Prezio	2013	Diabetes	180	Uninsured Mexican Americans.	RCT	Social cognitive theory guided, emphasis on knowledge acquisition and the development of strategies for dealing with specific situations related to diabetes management	HbA1c, BP, BMI, lipids.	12 months	Mean HbA1c 0.7% lower, $P = .02$ , in CoDe group compared with controls. HbA1c decreased significantly from baseline to 12 months within the intervention (-1.6%, $p < .001$ ) and control (-.9%, $p < .001$ ) groups. No differences between groups for secondary outcomes were found. <b>Study Conclusions:</b> This study supports the effectiveness of CHWs as diabetes educators/case managers functioning as integral members of the health care team in community clinic settings serving uninsured Mexican Americans.
GWU	Williamson	2013	Parent training	194	Immigrant Latina Mothers and focal children	RCT	Home visitation program. Four-session intervention delivered individually to mothers in the home setting by promotoras. Each session is 2 hours, and consists of instruction in four core content areas: (1) normative child development and related social competencies, (2) positive parent–child interaction techniques, (3) positive behavioral management strategies, and (4)	Mother-reported parenting skills, broad family functioning, and child externalizing and internalizing behaviors.	3 and 9 months	Intervention group showed better parenting skills over time (48% difference, $P = .02$ ); and better family support ( $P = .01$ ), and family organization ( $P = .03$ ); effect sizes were moderate. No significant group differences found in child behavior.

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Source	Author	Year	Health conditions of interest	N	Population studied	Research Design	Study/Intervention	Outcome measures	Follow-up period	Key findings
							service navigation to support access to community resources (Madres a Madres program).			Conclusion: Madres a Madres is a promising method for intervening with immigrant Latina mothers and their children
GWU	Allen	2014	Cardiovascular Disease	525	People with CVD, Type 2 Diabetes, hypercholesterolemia, or hypertension who exceed guideline goals of low-density lipoprotein cholesterol, BP, or Hb A1c	RCT	NP/CHW intervention focused on evidence-based behavioral interventions to effect therapeutic lifestyle changes and adherence to drugs and appointments as well as the prescription and titration of drugs.	Lipids, BP, and Hb A1c. Costs.	1 year	The mean incremental total cost per patient (NP/CHW and physician) was \$627 (confidence interval, 248-1015). Cost-effectiveness of 1-year intervention was \$157 for every 1% drop in systolic BP and \$190 for every 1% drop in diastolic BP, \$149 per 1% drop in Hb A1c, and \$40 per 1% drop in low-density lipoprotein cholesterol. <b>Study Conclusion:</b> management by an NP/CHW team is a cost-effective approach
GWU	Breyse	2014	Childhood Asthma	102	Households with low annual incomes in the Highline communities in southwest King County, Washington (n= 34 households) vs comparison homes (n=68). Education of most caregivers was either less than high school or a high school diploma or GED. Almost half (47%) of enrolled children were Hispanic, 21% were Vietnamese, and 18% were African American.	Quasi-experimental design	CHW home visit: Both groups received a baseline assessment of home environment and health interview. CHW made 4 additional visits to educate and to provide supplies. Weatherization-plus-health structural intervention: County housing authority personnel conducted diagnostic home air tightness measurements, combustion safety testing, a heating system assessment, and an assessment of moisture related problems. Also assessed of asthma triggers that could be treated through additional structural interventions. Intervention performed in at least 35% of homes.	Participating child's asthma symptoms (NHLBI guidelines). Pediatric Asthma Care-giver's Quality of Life Questionnaire score, use of asthma-related urgent clinical care during the previous 12 months; self-reported asthma attacks in the last 3 months.	1 year	% of study group children with not-well-controlled or very poorly controlled asthma decreased more than the comparison group percentage (100% to 28.8% vs 100% to 51.6%; P = .04). Study group caregiver quality-of-life improvements exceeded comparison group improvements (P = .002). Conclusions: Combining weatherization and healthy home interventions with CHW asthma education significantly improves childhood asthma control.
GWU	Fouad	2014	Cervical cancer risk screening	632	Predominately African American women.	RCT	3 management strategies: 1) immediate colposcopy; 2) human papilloma virus (HPV) DNA testing, which triaged to colposcopy only participants with an oncogenic HPV type; and 3) conservative management followed with serial Papanicolaou (Pap) smears. 4 types of intervention calls. An introductory call reviewed protocol, introduced CHA promoted study. A reminder call identified barriers to adherence and sought to find solutions to them. Rescheduled appointments as needed. A follow-up the day after a visit to provide positive feedback and identify negative experiences. Miscellaneous to acknowledge significant dates like the participant's birthday or to inquire about special needs.	Adherence to scheduled clinic visits		Adherence rates for scheduled clinic visits were significantly higher in the intervention group (80% vs. 60%, P< .0001).
GWU	Kangovi	2014	Posthospital outcomes	446	Patients from two urban hospitals	RCT	2 arm, single-blind RCT. CHWs worked with patients to create individualized action plans for achieving patients' stated goals for recovery. The CHWs provided support tailored to patient goals for a minimum of 2 weeks.	Completion of primary care follow-up within 14 days of discharge. Quality of discharge communication, self-rated health, satisfaction, patient activation, medication adherence, and 30-day readmission rates.	14 days	Intervention patients were more likely to obtain timely posthospital primary care (60% vs. 47.9%, P=.02) and report high quality discharge information 91.3% vs. 78.7%, P=.002) and to show greater improvements in mental health (6.7 vs 4.5; P=.02) and patient activation (3.4 vs 1.6; P=.05). No significant differences between groups in physical health, satisfaction with medical care, or medication adherence. Patients in both arms experienced at least one 30-day readmission; however, intervention patients were less likely to have multiple 30-day readmissions (2.3%vs 5.5%; P= .08; Among the subgroup of 63 readmitted patients, recurrent readmission was reduced from 40.0% vs 15.2% (P=.03).



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GWU	Martin	2014	Asthma	101	Elementary school and high school Puerto Rican children in Chicago (n=50, elementary school, n=51, high school)	RCT	Behavioral randomized controlled trial design with a community-based participatory research approach. All received education on core asthma topics and self-management skills. Participants in the CHW arm were offered home education by the CHWs in four visits over four months.	Adherence to ICS and home asthma triggers.	12 months	In the elementary school cohort, the CHW arm had lower odds of having an ICS (OR:0.2; p:0.02) at 12-months. The only significant treatment arm difference in the high school cohort was in inhaler technique where the CHW arm performed 18.0% more steps correct at five months (p<0.01) and 14.2% more steps correct at 12 months (p<0.01). <b>Study Conclusions:</b> while this CHW intervention did not increase the number of participants with ICS or reduce home asthma triggers, important lessons were learned including challenges to CHW intervention fidelity and the need for CHWs to partner with clinical providers
GWU	Palmas	2014	Diabetes	360	Hispanics aged 35-70 from Northern Manhattan .	RCT	CHW one-on-one visits, group visits, and telephone follow-up.	A1c. Secondary outcomes were systolic and diastolic blood pressure and LDL-cholesterol levels.	12 months	Non-significant trend toward improvement in A1C levels in the intervention group. Non-significant trend toward an increase in SBP and LDL cholesterol in the intervention arm. The number of contacts in the intervention arm showed a borderline association with greater A1C reduction (P= 0.054). Phone contacts were associated with greater A1C reduction (P= 0.04).
GWU	Rothschild	2014	Diabetes	144	Mexican Americans with type two diabetes	RCT	Single-blinded RCT. CHWs delivered behavioral self-management training during 36 home visits over 2 years.	HbA1c BP Glucose self-monitoring Adherence to medications and diet Physical activity	2 years	Intervention participants showed significantly lower hemoglobin A1c levels than control participants at both year 1 D = -0.55; P = .021) and year 2 (D = -0.69; P = .005). No effect observed on blood pressure control, glucose self-monitoring, or adherence to medications or diet. Intervention participants increased physical activity from a mean of 1.63 days per week at baseline to 2.64 days per week after 2 years. <b>Study Conclusion:</b> A self-management intervention delivered by CHWs resulted in sustained improvements in glycemic control over 2 years among Mexican Americans with diabetes.
GWU	Jonk	2015	Reducing health expenditures	1161	Participants that matched the inclusion criteria	Quasi-experimental pre-post design using propensity score matching	Scheduled coaching sessions, initiated ad hoc coaching sessions as needed, and actively worked on self-selected goals and health behavior changes. Health coaches provided telephonic coaching to members at their convenience.	Health expenditure levels.	2 years	Probability of incurring costs and expenditure levels for ER services were not affected. Probability of incurring inpatient expenditures for health coaching participants fell significantly from preparticipation to postparticipation relative to controls (P=.034). Estimated outpatient and total cost savings were \$286 (P=.01) and \$412 (P=.003) per person per month, respectively.
GWU	Krieger	2015	Asthma	333	Adults with uncontrolled asthma aged 18-65 living in King County, Washington	RCT	Randomized parallel group study comparing intervention group with usual care. CHWs conducted home visits to assess asthma control, self-management, and home environment	Asthma free symptom days. Secondary outcome measures were night symptoms, asthma exacerbations, pulmonary function, $\beta$ -agonist use, asthma control level, missed work, school, or normal daily activity days and general health status	1 year	Significantly greater increase in mean symptom-free days per 2 weeks and quality of life. mean of 3.46 to 1.99 episodes in the intervention group (mean change, -1.47 [95% CI, -2.28 to -0.67]; P < .001) and from a mean of 3.30 to 1.96 episodes in the control group (mean change, -1.34 [95% CI, -2.00 to -0.72]; P < .001) (P = .83 comparing groups).
GWU	Palmas	2015	Diabetes	Various	13 studies	Various	Meta analysis.	A1c	Various	<b>Study Conclusions:</b> CHW interventions showed a modest reduction in A1c compared to usual care. A1c reduction was larger in studies with higher mean baseline A1c. Caution is warranted, given the small number of studies.
GWU	Perez-Escamilla	2015	Diabetes	211	Adult Latinos with uncontrolled type-two diabetes	RCT	17 individual educational sessions delivered at home by CHWs over a 12-month period addressing type two diabetes complications, healthy lifestyles, nutrition,	HbA1c, fasting blood glucose, and lipid profile	3, 6, 12 and 18 months	CHWs had a positive impact on net HbA1c improvements at 3, 6, 12, and 18 months. CHWs had an overall significant effect on glucose concentration that was more pronounced at the

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							healthy food choices and diet for diabetes, blood glucose self-monitoring, and medication adherence.			12 and 18 month visits (overall repeated-measures group effect -0.51%, P= 0.002). No significant effect on blood lipid levels, hypertension, and weight.
GWU	Rosas	2015	Obesity	177	Latinos (mostly women – 77%) with a body mass index of 30 to 60 and one or more heart disease risk factors	RCT	Three arm RCT comparing two interventions with each other and with usual care. Case mgt. + CHW intervention compared with usual care. Motivational interviewing, building self-management, and goal-setting skills, providing hands-on cooking and physical activity demonstrations, fostering self-efficacy, leveraging group-based social support, identifying community resources, and coordinating with primary care providers.	BMI Secondary outcome included change in obesity-related cardiovascular risk factors	24 months	At 6 months, men in the CM+CHW arm lost more weight (-4.4 kg; 95% CI -6.0 to -2.7) compared with UC (-0.4 kg; 95% CI -2.4 to 1.5), but by 12 and 24 months differences were not significant. <b>Study Conclusion:</b> incorporation of CHWs may help promote initial weight loss among Latinos, especially among men, but not weight maintenance over time. Additional strategies to address social and environmental influences may be needed for Latino immigrant populations.

## APPENDIX C – Literature Review Annotated Bibliography

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## APPENDIX D – Project Interviews & Interview Guide

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Chairwoman  
Women- Inspired Neighborhood Network

## Interview Guide

*(Menu of questions from which we would select based on background/knowledge of the interviewee)*

### **Brief description of project**

*The Office of Minority Health (OMH) and the Health Resources and Services Administration (HRSA) have asked the George Washington University Health Workforce Research Center (GWU HWRC) to examine Community Health Worker (CHW) programs and reimbursement models. (Michelle M. Washko, PhD HRSA/National Center for Health Workforce Analysis; Gloria González, PhD Public Health Advisor, Latino Health Policy Lead Division of Policy and Data Office of Minority Health U.S. Department of Health and Human Services)*

*The primary purpose of the project is to help advance the CHW as a viable career, in the context of a transformed health care system. Our goal is to synthesize the ‘state of art’ with regard to CHWs’ current roles, proven effectiveness, reimbursement practices and other policies impacting the advancement of CHWs within the field. This is not an effort to build consensus among various stakeholders – rather, we have been tasked by OMH/HRSA to provide a snapshot of the range of CHW programs as they are today.*

*[May want to include a disclaimer of what we mean by CHWs]*

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### **<Questions for All Interviewees (CHW Programs and Other Thought Leaders)>**

#### **Questions related to database**

*Start with brief description of database: We are working to develop a searchable database that represents a range of programs using CHWs, Promotores, or other similar public health workers. This database will serve as a research tool to allow GWU HWRC to identify various “models” or a typology of CHWs and to understand the similarities and differences between these programs. Stemming from our database analysis, we will conduct in-depth interviews with select programs to develop case studies of innovative models. The database and case study analysis will form the basis of two peer-reviewed papers on CHW program models and payment policies.*

1. Within your experience, what types of program models using CHWs work effectively?
2. Are you aware of other types of models other organizations are using and whether these are effective?
3. If you were doing a typology of CHW programs models, what would that look like?
4. What leading programs should we include in our database? (innovative programs, new models of reimbursement, programs that are embracing health reform)

#### **ACA/Health System Reform**

1. *<Question for Interviews with Program Leaders>* In what ways, if any, is your program changing in response to ACA/ delivery system reforms?
2. In what ways are CHWs being used in new health system delivery initiatives undergoing implementation throughout the country? (resulting from ACA or otherwise)
  - Are you aware of any ACA delivery system reforms that currently use CHWs? (including ACOs, Medicaid health homes, SIMs, CHNAs, other CMMI initiatives)
    - Under these initiatives, how are CHWs being reimbursed? In what ways are these initiatives tracking the value of CHWs (e.g. documenting ROI, documenting health outcomes)?
3. How do the models of CHWs currently in use fit into the context of health reform?

- Do these need to be modified to enable broader participation of CHWs within these delivery system reforms?
  - Are programs changing the way they use CHWs based on health reform or other health system changes? (e.g. modifying roles of CHWs, modifying qualifications etc.)
4. Do you know of good “case study” examples where CHWs are succeeding in adapting under health reform?

### ***Reimbursement/Payers***

1. What are the primary ways that CHWs are currently compensated?
2. Have you seen new models of reimbursement of CHWs emerge in the past 3-5 years? If yes, please describe.
3. Please provide examples of MCOs, self-insured employers and private health plans reimbursing for CHWs?
4. What barriers to reimbursement do CHWs face today? Where are opportunities?

### **Other People to Interview/Resources to Gather**

- (1) Who else should we be talking to? (other thought leaders, programs, payers, employers)

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### **<Questions for Interviews with Program Leaders>**

1. Please describe your organization and your role within your organization.
2. Please describe the use of CHWs within your organization (or a program that your organization is affiliated with)
  - How many CHWs?
  - What target population do CHWs serve? What target health outcome?
    - Are CHWs matched to clients/patients (e.g. by race, community or origin etc.)?
  - What are the key functions/responsibilities/roles of CHWs?
  - What are the qualifications required of CHWs participating in your program? (e.g. education level, credentialing, language requirements, program-based training etc.)
    - If there is training for your program, describe the nature of this training (how many hours, are CHWs trained on the job or sent out for training etc.)
    - Is the program in a state where certification is required? If so, do you only hire certified CHWs?
  - Describe the CHW-patient interaction:
    - What is the typical caseload size?
    - How many visits/contacts does a patient get? How long does each visit/contact last?
    - Where does the visit take place?
    - Do CHWs work only with the patient or with family members/care givers?
    - Does the program offer any incentives to patients to participate?
    - What educational materials are used?
    - What are the factors that determine when a patient/client has completed services with the CHW (e.g. is discharged)?
  - What is your fiscal model? (e.g. fed/state grant funding, foundation, hospital funding etc.)
  - Describe CHW compensation within your program. (salaried, volunteer, etc.)
  - Describe any CHW reimbursement from Medicaid/insurers.
  - Describe any use of health IT.

3. How does your organization integrate CHWs into the larger workforce team? Or are CHWs organized separately from supportive healthcare teams?
  - In what ways and how do CHWs communicate with other healthcare team members? (how do they provide information, feedback, ensure care coordination etc.)
  - Describe ways that CHWs link patients into social services
  - What barriers has your organization faced when integrating CHWs into team-based care models?
4. How does the way you use CHWs differ from your understanding of the way other programs use CHWs? Describe similarities and differences.
  - What are key features of your program that makes it more successful than other programs?
5. What drivers led you to develop your program and its use of CHWs the way you did?
  - What alternatives did you consider? (Why select a program model that uses CHWs over other types of professionals?)
6. What barriers have you faced in program implementation? (e.g. resistance from other professionals, payers, funding)
7. Is your program undergoing any formal evaluation, or has your program undergone evaluation in the past? (e.g. return on investment, evaluation of outcomes)
  - If known, what has been the impact of your program on target outcomes? (e.g. patient knowledge, behavior, satisfaction, health outcomes, and health care utilization)
  - If known, what has been the impact of your program on ROI?
8. What lessons learned would you share with others interested in implementing a similar program?
9. What are the key things about CHWs that make them “different” or “unique” from other types of providers?
10. Please provide us with any written descriptions of your program.



## APPENDIX E – Database Programs

PROGRAM NAME	DESCRIPTION
<b>Boston Children’s Hospital: The Community Asthma Initiative (Boston, MA)</b>	<p>Drawing on lessons learned in the clinical setting and earlier community-based intervention efforts, the Boston Children’s Hospital implemented the Community Asthma Initiative (CAI) in 2005 to provide more intensive support to improve the health of children with moderate to severe asthma in the Boston neighborhoods of Jamaica Plain, Roxbury and Dorchester. CAI began serving patients from the targeted neighborhoods who visited the emergency department or who were hospitalized because of an asthma exacerbation, as those children were most likely to have poorly controlled asthma. The program was not meant to replace the role of primary care providers, but rather be an additional partner and support in helping a family to manage their child’s every day asthma care and connect patients more closely with their Medical Home.</p> <p>CAI, which operates through a nurse and community health worker model, establishes a close relationship with the participating families and provides case management services according to a child’s unique medical and social needs. The initiative provides a home environmental assessment and asthma management and medication education, while working with the family and child’s health care providers to remove barriers to improved asthma control. The CAI staff truly partners with the families—answering questions, listening to concerns, reinforcing the child’s Asthma Action Plan, which outlines medications to give when the child is well, when symptoms develop and in case of emergency. They also provide education, materials and supplies to reduce home environmental triggers including High-Efficiency Particulate Air (HEPA) vacuums, which remove 99.97 percent of particles that are at least 0.3 micrometers, to every family.</p> <p>In addition to working with families in the home, a nurse provides asthma education out in the community for parents and caregivers by partnering with community organizations, day care centers and schools. Through education and support, the nurse helps families understand that children with asthma can stay physically active with proper control of their symptoms.</p>
<b>Vermont Blueprint for Health (VT)</b>	<p>The Vermont Blueprint for Health (Blueprint) is described in statute as “a program for integrating a system of health care for patients, improving the health of the overall population, and improving control over health care costs by promoting health maintenance, prevention, and care coordination and management.” The Blueprint works with practices, hospitals, health centers, and other stakeholders to implement a statewide health service model in Vermont. The model includes advanced primary care in the form of patient centered medical homes (PCMHs), multi-disciplinary support services in the form of community health teams (CHTs), a network of self-management support programs, comparative reporting from statewide data systems, and activities focused on continuous improvement (Learning Health System). The program aims to assure that all citizens have access to high quality primary care and preventive health services, and to establish a foundation for a high value health system in Vermont.</p> <p>Community health teams (CHTs) provide general and targeted populations with more direct and unhindered access to diverse staff, such as nurse care coordinators, social workers, counselors, dieticians, health educators, and others. These essential multi-disciplinary staff</p>

PROGRAM NAME	DESCRIPTION
	<p>members augment and stimulate the provision of high-quality primary care as a coordinating feature in a community-oriented health system. In combination, medical homes and community health team staff help link individuals more seamlessly with the services they need by strengthening network interactions with a larger array of medical and non-medical providers in their communities.</p> <p>The CHT effectively expands the capacity of primary care practices by providing patients with direct access to an enhanced range of services and by providing closer and more individualized follow up. Barriers to care are minimized, since there is no charge (no copayments, no prior authorizations, no billing) for CHT services to patients or practices. Importantly, CHT services are available to all patients in the primary care practices they support, regardless of whether these patients have health insurance of any kind or are uninsured.</p>
<b>Commonwealth Care Alliance -- Senior Care Options; Disability Care Program; Complex Care Needs (Boston, MA)</b>	<p>Commonwealth Care Alliance, a not-for-profit health care system based in Boston, Massachusetts, offers a full spectrum of medical and social services for older people and the physically and mentally disabled. Providing individualized primary care, coordination, behavioral health, and social support services in the home and community through multidisciplinary teams, Commonwealth Care Alliances works to reduce the need for hospitalization and nursing home placement for the elderly and disabled. The sharply reduced use of nursing homes by eligible older people led to an average growth in total medical spending of just 2.1 percent from 2004 to 2009, sharply below fee-for-serve rates. For disabled patients, monthly medical costs were \$3,601 in 2008, compared to \$5,210 for Medicaid fee-for-service patients. In 2009 Commonwealth Care Alliance scored in the ninetieth percentile or above on Healthcare Effectiveness Data and Information Set measures for comprehensive diabetes care, monitoring patients on long-term medication, and access to preventive services. Looking forward, the alliance seeks to implement integrated global payments, build adequate financial reserves to satisfy insurance regulators, has to shore up struggling primary care physician practices to serve as a foundation for its programs, and overcome challenges to recruiting a multilingual, multidisciplinary workforce to serve a multilingual population.</p>
<b>Health Resilience Program of CareOregon (Portland, OR)</b>	<p>In partnership with safety-net practices, CareOregon developed a new model of Community-Oriented Primary Care that travels beyond the four walls of the medical office practice and reaches into the community where the city's most vulnerable residents live their lives, trying to navigate a complex web of services that is anything but user-friendly. The Health Resilience Program believes that providing the health care system with a new workforce of non-traditional health care workers- Health Resilience Specialists (HRS) who are Master's level 'engagement specialists' tasked with developing meaningful partnerships with a panel of high-acuity/high-cost patients to enable wellness and stability in their lives- will reduce the total cost of care and enhance patient experience and outcomes.</p> <p>The Health Resilience Program is designed to address the bio-psychosocial needs of this high-risk population using a trauma-informed, strength based approach, with the specialist embedded in a primary care clinic as part of the primary care team. The program collaborates with the doctor and the client supporting the client's health goals. Criteria as defined by the grant for inclusion in this intervention are: (i) Established in a clinic where a Health Resilience specialist (HRS) is embedded; (ii) Have Health Share of Oregon as primary</p>

PROGRAM NAME	DESCRIPTION
	<p>Medicaid insurance, dual eligibility or payer of choice; (iii) Living in the Portland tri-county area; (iv) Willing and able to make a change in their lives; (v) Recent, modifiable utilization patterns; (vi) One or more non-OB hospitalization admissions with or without ED visits within 12 months, or six or more ED visits with or without hospitalization within 12 months; (vii) 18 years or older.</p>
<p><b>St. John's Wellchild and Family Center (SJWCFC)</b> (Los Angeles, CA)</p>	<p>Over the past 8 years, St. John's Wellchild and Family Center, an FQHC network, has been part of a growing Healthy Homes South Los Angeles (HHSLA) collaborative. The HHSLA collaborative is comprised of health service providers, community health promoters, tenant organizations, and affordable housing and civil rights advocates who ameliorate the health consequences of substandard slum housing in Central and South Los Angeles, while shifting the discourse around housing and health. In 1996, SJWCFC and Esperanza Community Housing Corporation began work on lead poison prevention. Services included health services and treatment for children with elevated blood lead, anchored by home visits conducted by promotoras who assessed substandard conditions in pre-70s housing stock, and who educate and empower parents to minimize adverse exposures. Between 1996 and 2003, Strategic Actions for Just Society joined the coalition and the project focus expanded to include harvesting data that influenced local and state policy. By 2009 the Healthy Homes Healthy Kids (HHHK) project embraced a comprehensive approach: home visits, health program enrollment, medical homes for participating families, advocacy, and policy development. Across all projects a community health promoter model is utilized to ensure the greatest level of receptivity, cultural competency, and program success.</p>
<p><b>UnitedHealthcare Community &amp; State</b> (National)</p>	<p>UnitedHealthcare Community &amp; State serves as a Medicaid Managed Care Organization in 26 states. In several markets, UnitedHealthcare has begun to leverage community health workers as an integral part of its health team. CHWs focus on the members with the most complex needs who are also experiencing barriers in accessing care. Members' needs often include a combination of behavioral health, medical, and social supports. The strategy behind the CHW approach is to increase engagement through access to a non-clinical resource that likely lives in the community and knows how to connect with the different cultures within the community. The CHW builds rapport and trust with members within the community while also emphasizing the importance of having a primary care physician (PCP) relationship, helping members communicate effectively with their PCPs, making sure members have access to transportation and teaching them about appropriate use of the Emergency Department. Over time UnitedHealthcare has come to recognize the importance of the role a CHW has in serving the Medicaid population. UnitedHealthcare is working to continually evolve this role and explore how these individuals can contribute to its efforts to achieve improved health outcomes, member experience, and improved efficiencies.</p>
<p><b>Supporters of Health- Wake Forest Baptist Health</b> (NC)</p>	<p>Wake Forest Baptist Medical Center has recently begun training former environmental service worker staff (housekeeping, sanitation) as CHWs. These workers would have been let go due to hospital budget cuts and outsourcing, but the hospital realized that these employees were from the zip codes where most of the charity care write-off was occurring within the health system. Patients coming from these zip codes represent the highest cost for the health system, and they also have significant social needs upon returning from the hospital that makes post-discharge recovery difficult (e.g. many of these patients do not have money for groceries or for utilities upon returning home; these concerns prevent them from following post-discharge instructions). Having deployed former environmental service workers as salaried, full-time CHWs – called “Supporters of Health” – the hospital is now</p>

PROGRAM NAME	DESCRIPTION
	<p>able to send CHWs out into their communities to help patients connect to social service resources. The former environmental service workers provide a network of on-the-ground, in-the-community, trusted intelligence about the care and social needs of patients.</p> <p>The Supporters of Health program works with discharged hospital patients in five targeted zip codes, but also works with other residents in these zip codes who are in need of better connections to social services. While these “other” residents have not recently been hospitalized, most have been to the hospital in the past five years. By connecting them to resources that address the social determinants of health, the hospital is able to attend to the health needs of Winston-Salem residents before they come to the hospital. CHWs work in communities to connect and navigate discharged patients to existing social service resources, such as ministries and food pantries. They conduct a detailed profile and needs assessment in each initial encounter, and follow up, along with other hospital staff if needed, to link people to appropriate resources, including Medicaid enrollment. In just one year of operation, this model has decreased hospital costs related to uncompensated care from these five zip codes by 5%.</p> <p>Supporters of Health are integrated into the clinical care transitions team at Wake Forest. They attend clinical rounds in an intentional effort by the hospital system to connect clinical and non-clinical care needs that best support the patient. The Supporters of Health also work to educate clinical providers on working better with patients from these zip codes (for example, by instructing providers to prescribe affordable generics for these patients).</p>
<b>Molina Healthcare Community Connectors (National)</b>	<p>Community Connectors are a high touch extension of a Registered Nurse or Social Worker Case Manager who will meet the patient in their home, primary care physician’s (PCP’s) office or in the community. They are the eyes and ears in the field. Community Connectors provide outreach to locate and/or provide support for disconnected patients with special needs. They also educate patients and are advocates engaging and assisting the member in managing and navigating the healthcare system. Community Connectors provide non-clinical paraprofessional services and are thoroughly familiar with the patient’s community and available resources. By collaborating with Molina Healthcare staff, primary care providers, social services and community resources Community Connectors assist members with all aspects of their health and wellness.</p>
<b>Women-Inspired Neighborhood Network: Detroit (Detroit, MI)</b>	<p>Working through an unprecedented public-private partnership of Detroit’s major health systems, public health, and community partners, the WINN will tighten the loose net of disconnected medical and social services for women to improve the conditions that lead to infant survival through the first year of life. The three primary project elements are (i) the 6 Community Neighborhood Navigators (CNNs) who recruited 1500 African-American women ages 18-34 in Brightmoor, Chadsey-Condon, and Osborn neighborhoods in Detroit; (ii) provision of healthcare equity training sessions to 500 physicians and providers; and (iii) the establishment of educational and supportive products that will engage the broader community in promoting good health status prior to and during pregnancy. The use of CNNs led to nearly zero infant deaths across three Detroit neighborhoods. Historically, neighborhood residents experience a disproportionate burden of poverty, stressors, diseases, health inequities, social isolation and limited access to resources. All of these factors contribute to Detroit’s high infant mortality rates (IMR).</p>

PROGRAM NAME	DESCRIPTION
	<p>Building upon existing relationships and trust between CNNs with organizations and the community, WIN Network links women between disconnected clinical and social services to address these social determinants. While we cannot geographically relocate women, through the engagement of CHWs as change agents, we are transforming their experience of their location. Data analysis describes how effective CNNs are in shaping the way residents view opportunities to thrive within these conditions. Trained in CHW core competencies as well as program specific strategies including motivational interviewing, visioning techniques, and asset mapping, CNNs assist women with things such as fulfilling their educational goals, housing, transportation, employment, food insecurity, budgeting, insurance enrollment, family planning, pregnancy spacing and seeing their families thrive. They are uniquely qualified to lead women from a foundation of strengths rather than deficits to identify needed, community-level resources. Pre/post assessment surveys are used to capture demographic information and survey community conditions. Compared with Detroit's overall IMR of 14.4 for Black mothers, WIN Network's IMR is only 2.56 with the mean birth weight of 6.6 pounds and average gestation of 38 weeks.</p>
<b>West Baltimore Primary Care Access Collaborative-west Baltimore Health Enterprise Zone (Baltimore, MD)</b>	<p>The West Baltimore Primary Care Access Collaboration (WBPCAC) is a group of sixteen organizations that aims to improve the overall health of the residents of west Baltimore. The mission of the Collaborative is to create a sustainable, replicable system of care to reduce health disparities, improve access to health care, reduce costs and expand the primary care and community health workforce. The Collaboration is focused on four zip codes in west Baltimore. Covering just over fourteen square miles, the targeted area contains as unofficial boundaries several of Baltimore City's famous landmarks, tourist attractions, and access points.</p>
<b>University of Arizona Pima County Cervical Cancer Prevention Partnership (Pima County, AZ)</b>	<p>The Pima County Cervical Cancer Prevention Partnership (PCCCPP) is a community-based coalition working to eliminate health disparities related to cervical cancer for Latinas residing in the US-Mexico border region in Pima County Arizona. Promotoras (community health educators) provide the coalition leadership. Other partners include community residents, neighborhood associations, school districts, healthcare providers, county and city agencies, non-profit organizations and University departments. The coalition increases knowledge and awareness of human papilloma virus (HPV) and cervical cancer prevention, screening, and management. The partnership works to eliminate structural barriers to medical care to facilitate timely access to diagnostic and treatment services.</p>
<b>Promoting Access to Health (PATH) for Pacific Islander and Southeast Asian Women Program (Los Angeles, Orange County, and San Diego Counties, CA)</b>	<p>Members of the Promoting Access to Health (PATH) for Pacific Islander and Southeast Asian Women program work to reduce the impact of breast and cervical cancer among American/Pacific Islander (API) women in Los Angeles, Orange, and San Diego counties in Southern California. The program specifically focuses on Cambodian, Hmong, Laotian, Thai, Vietnamese, Chamorro/Guamanian, Marshallese, Native Hawaiian, Samoan, and Tongan populations.</p>



PROGRAM NAME	DESCRIPTION
<b>Proyecto Movimiento (Greater Gilroy, CA)</b>	The YMCA- Silicon Valley REACH U.S. Proyecto Movimiento Action Community is a community-based partnership that strives to reduce the prevalence of diabetes among Latinos in the Greater Gilroy, California area by delivering a prevention outreach and education campaign across generations. Proyecto Movimiento addresses linguistic, cultural, and economic barriers to physical fitness opportunities and education on healthy eating and diabetes prevention. Promotoras, Youth Health Advocates, and outreach coordinators work directly with residents in small group settings, after school programs, and in other community settings.
<b>Keep Your Heart Healthy- Lawndale Health Promotion Project (Chicago, IL)</b>	The REACH Action Community program at the Chicago Department of Public Health provides outreach to address type 2 diabetes and cardiovascular disease among African American and Hispanic/Latinos in the North and South Lawndale neighborhoods of Chicago, Illinois. The program places special emphasis on bringing prevention activities out into the community, disseminating information on health disparities and educating local decision makers about the goals of the program.
<b>Midwest Latino Health Research, Training and Policy Center- CEED Chicago (Chicago, IL)</b>	The University of Illinois at Chicago works to reduce cardiovascular disease and diabetes among Hispanics/Latinos and African American living in the Chicago metropolitan statistical area. The program, CEED Chicago, uses strategies directed at policy and system changes that will increase the equitable distribution of healthy food and improve health literacy at the community level through peer education. The Chicago metropolitan statistical area includes southeast Wisconsin, northwest Indiana, and southwest Michigan.
<b>Health Visions Midwest, Inc. (Lake County, IN)</b>	REACH/Alliance staff and Coalition work to improve pre- and post-natal care among Hispanic women in Lake County, Indiana. Using a community health worker model, the program provides support to women by helping them to navigate and access healthcare resources, including access to translation services. REACH/Alliance has also expanded into the area of promoting systems and policy changes to improve health outcomes.
<b>Hidalgo Medical Services, La Vida Program (Hidalgo County, NM)</b>	The goal of the Hidalgo Medical Services' (HMS) La Vida Program is to reduce health disparities and improve the health status of the Hispanic population in the Southwestern U.S. who have diabetes or are at risk of developing diabetes. The program focuses on creating policy and systems/environmental change by collaborating with other organizations to increase access to care and reduce diabetes-related health disparities through preventative education, chronic disease management, and community-guided policy change to address the needs of the communities it serves.
<b>Communities Inspired and Motivated to Prevent and Control (IMPACT) Diabetes Center (New York, NY)</b>	It is projected that one in two African American and Hispanic-Latino children born in this generation will develop type 2 diabetes as adults, unless action is taken. Mount Sinai School of Medicine is partnering with community representatives and organizational and policy leaders to implement a novel and sustainable program. The Communities Inspired and Motivated to Prevent and Control (IMPACT) Diabetes Center supports initiatives contributing to improved nutrition, physical activity, diabetes prevention, detection, and management.
<b>Patient Navigation Center (Santa Clara County, CA)</b>	Asian Americans for Community Involvement (AACI), in partnership with the Career Ladders Project and local community colleges, received an award to train Asian and Hispanic youth as non-clinical health workers for a Patient Navigation Center (PNC). Serving low-income Asian and Hispanic families in Santa Clara County, PNC will provide enabling services, including translation, appointment scheduling, referrals, and application help for social services, as well as after-hours and self-care assistance. The goal is for these activities to

PROGRAM NAME	DESCRIPTION
	result in increased adherence, a reduction in emergency room visits, and reduced anxiety for patients. Over a three-year period, Asian Americans for Community Involvement will re-train its current staff of nurses, supervisors, and on-call clinicians and create an estimated 29 jobs. The new workers will include patient navigators, nurse, and clinician advisors, and a workforce manager.
<b>A home visitation program for rural populations in Northern Dona Ana County, New Mexico (Dona Ana County, NM)</b>	Ben Archer Health Center in south New Mexico has implemented an innovative home visitation program for individuals diagnosed with chronic disease, persons at risk for developing diabetes, vulnerable seniors, and homebound individuals, as well as young children and hard to reach county residents. Ben Archer Health Center provides primary health, dental, and behavioral health care to rural Dona Ana County, a medically underserved and health professional shortage area. The Ben Archer Health Center's Healthcare Innovation Award uses nurse health educators and community health workers to bridge the gap between patients and medical providers, aid patient navigation of the health management, preventive care, home safety assessments, and health education, thereby preventing the onset and progression of diseases and reducing complications. Project staff provides diabetes and asthma management classes for patients and families. The project implements a culturally-appropriate, immunization methodology utilizing door-to-door outreach campaigns. The staff connects individuals with primary care homes to decrease the cost of complications caused by disease in the predominately Hispanic population.
<b>CCHP Advanced Wrap Network (Southeast, WI)</b>	Children's Hospital and Health System received an award to create Care Links, which will support members of Children's Community Health Plan (CCHP), the system's Medicaid HMO in Southeast Wisconsin, as they navigate the health care system. Care Links will allow community health navigators to educate and empower health plan members to navigate the health care system, connect with a primary care doctor and receive preventive care and appropriate screenings. Community health navigators will offer services to individuals and families who have had two ER visits within six months. A nurse navigator will work with health plan members diagnosed with asthma who have had at least one ER or inpatient stay related to asthma. Both the community navigators and the nurse navigator will reinforce the availability of urgent care and CCHP's 24/7 nurse advice line. The goal of Care Links is to reduce avoidable ER visits, improve health outcomes (specific HEDIS measures) and reduce cost. Over the three year period, Children's Hospital and Health System will create nine jobs, including a program manager, community health navigators and nurse navigators.
<b>Cooper University Hospital (Camden, NJ)</b>	Cooper University Hospital in conjunction with the Camden Coalition of Healthcare Providers, serving Camden, New Jersey, received an award to better serve approximately 600 Camden residents with complex medical needs who have relied on emergency rooms and hospital admissions for care. The intervention will use nurse led interdisciplinary outreach teams to work with enrolled participants to reduce hospital readmissions and improve their access to primary health care. This approach is expected to result in better health care outcomes and lower cost with estimated savings of over \$6 million. Over the three-year period, Cooper University Hospital's program will train an estimated 22 health care workers, while creating an estimated 16 new jobs. These workers will include non-clinical staff, like AmeriCorps volunteers and community health workers, who will serve as part of the multidisciplinary teams to support care coordination activities.

PROGRAM NAME	DESCRIPTION
<b>Circle of Smiles Program (SD)</b>	<p>Delta Dental of South Dakota, which covers over thirty-thousand isolated, low-income, and underserved Medicaid beneficiaries and other American Indians on reservations throughout South Dakota, received an award to improve oral health and health care for American Indian mothers, their young children, and American Indian people with diabetes. Providing preventive care will help avoid and arrest oral and dental disease, repair damage, prevent recurrence, and ultimately, reduce the need for surgical care. The project will also work with diabetic program coordinators to identify and treat people with diabetes. By coordinating community-based oral care with other social and care provider services, the model is expected to reduce the high incidence of oral health problems in the area, improve patient access, monitoring, and overall health, and lower cost through prevention with estimated savings of over \$6 million. Over the three-year period, the Delta Dental of South Dakota Circle of Smiles program will train an estimated 24 health care workers and create an estimated 24 new jobs. These workers will be comprised of registered dental hygienists and community health representatives who will treat and educate patients and coordinate their dental care.</p>
<b>Michigan MATCH (Managing Asthma Through Case-Management in Homes), Asthma Network of West Michigan (MI)</b>	<p>The Michigan MATCH (Managing Asthma Through Case-management in Homes) program is based on the asthma case management model developed for the Grand Rapids area by the Asthma Network of West Michigan (ANWM) in 1996. The model is also implemented by the Hurley Medical Center (Flint area), the Capital Area Asthma Management Program (Ingham County) and the Wayne Children's Healthcare Access Program (Wayne County). Standard program elements of the intervention include:</p> <ul style="list-style-type: none"> <li>• ≥3 Home visits (includes environmental assessment) by a certified asthma educator</li> <li>• ≥1 Social Worker home visit/consultation for psychosocial intervention</li> <li>• ≥1 Physician care conferences (joint consultation with patient, primary care provider, and case manager) to make or update the asthma action plan</li> <li>• Case manager providing service is a certified asthma educator (AE-C)</li> <li>• All patients receive, or have updated, an asthma action plan</li> <li>• ≥1 case-manager visit to school/daycare as appropriate, work visit if requested by client</li> </ul> <p>In 2008 there was a new initiative in Grand Rapids, a patient-centered medical home pilot, funded by a community collaborative called First Steps. The pilot's focus was on increasing access to care and reducing unnecessary ED visits in children covered by Medicaid. First Steps, deciding to focus on asthma in particular, approached the Asthma Network to see if they would provide home-based case management and asthma education services for children with Priority Health Medicaid coverage. The partner health plan also incentivized some private pediatric practices to absorb more Medicaid patients and increased their Medicaid reimbursement rates accordingly. The pilot allowed ANWM staff unprecedented access into the medical homes (private practices and clinics alike) and allowed for the subsequent development of dashboards on provider and practice performance. The dashboards tracked not only use of services but also provision of flu shots, asthma action plans, asthma control test scores, 6-month asthma follow-up visits, and spirometry.<sup>12</sup> The pilot also allowed ANWM to incorporate community health workers into the case management team for the first time. Community health workers advocate for case-managed families and serve as peer educators, offering interpretation and translation services, providing culturally appropriate health education and information, and providing</p>



PROGRAM NAME	DESCRIPTION
	some direct services such as environmental assessments for patients with asthma and their families
<b>Congregational Health Network (Memphis, TN)</b>	The Congregational Health Network (CHN) is a partnership between Methodist Le Bonheur Healthcare and almost 400 churches in Memphis, Tennessee. CHN is designed to maintain a smooth transition from inpatient hospital admission to home. Congregants that choose to be enrolled in CHN are flagged by the health care system's electronic health record upon hospital admission. A hospital-employed navigator meets with the flagged patient to establish his or her needs once discharged and then works with the affiliated congregation's volunteer health liaison to arrange post-discharge services and facilitate the transition back into the home. The church volunteer provides education and comfort to the patient.
<b>Cambridge-Somerville Healthy Homes (Cambridge Health Alliance) (Cambridge and Somerville, MA)</b>	Cambridge-Somerville Healthy Homes offers two free home visiting programs that help families of young children who have asthma or lead poisoning. During home visits, families learn about what they can do to reduce asthma triggers and/or lead risks in their home. Cambridge-Somerville Healthy Homes is based at the Cambridge Public Health Department.
<b>The Community Health Project (CDPHP) (Troy and Albany, NY)</b>	Through this unique collaboration, trained community health workers from Trinity Alliance and the Commission on Economic Opportunity (CEO) are reaching out to CDPHP members who have been identified as not maximizing their health benefits. The goal of this initiative is to educate and empower individuals and families to help them identify and achieve their health goals. This free service will provide information on caring for children with asthma, eating well on a budget, managing chronic diseases and more. Additionally, community health workers can assist individuals with accessing medical care through a primary care doctor.
<b>Hennepin Health (Hennepin County, MN)</b>	<p>The Hennepin Health care model is anchored by interdisciplinary care coordination teams that are located in primary care clinics. The teams consist of registered nurse care coordinators, clinical social workers, and community health workers. In addition, Hennepin Health supports the extension of the traditional clinic-based care coordination teams to include nonclinical services that are believed to be important determinants of health. Access to these services, such as housing and vocational support, is prioritized based on an assessment of members' risk for high cost.</p> <p>Through outreach activities, community health workers establish relationships with members to help them understand their care plans, provide follow-up on missed appointments and referrals, resolve barriers to treatment, and facilitate social support. As laypersons with special training, community health workers collaborate with others on the care team to support patients in their navigation of the health care system and assist with patient education, goal setting, and social support. Recruited from the communities they serve, community health workers can also help translate health information for patients, using language or cultural contexts that are familiar to them. Because of limited family and social support for adults in this population, follow-up phone calls or texts from a community health worker may be one of the few sources of social connection for patients. The flexibility of Hennepin Health's funding structure makes it possible to purchase items such as cell phone minutes, so that a patient with high psychological or social needs can connect with his or her community health worker during stressful times.</p>

PROGRAM NAME	DESCRIPTION
<b>Neighborhood Health Plan -- Asthma Disease Management Program (Boston, MA )</b>	<p>Neighborhood Health Plan's Asthma Disease Management Program (ADMP) is based on the assumption that, for most patients, asthma is a controllable illness and that much of asthma morbidity is preventable. The varied components of ADMP are geared to assist primary care providers (PCP) with proactively managing their NHP patients with asthma while providing them with tools to improve the asthma care they provide to all of their patients. The program focuses on reaching out to members at risk and engaging their providers with actionable, patient-specific data to improve outcomes related to appropriate medication use and reducing hospital-based utilization.</p> <p>NHP worked in collaboration with community-based organizations to further improve the quality of life for members with asthma as well as members of the community. In 2000, NHP added home visits to its ADMP. A few years later, in response to results of the 2004 Inner City Asthma Study (ICAS) that bolstered the evidence of the effectiveness of home-based environmental interventions, and in consultation with Boston University School of Medicine experts in environmental determinants of the health, NHP established its Enhanced Asthma Home Visit Program (EAHVP) in 2005. NHP was the first health plan to contract with the Boston Asthma Initiative (BAI) (a community-based organization founded to address asthma and related environmental issues in some of the city's minority neighborhoods) to provide asthma education, conduct environmental assessments in the home to identify asthma triggers, and to offer advice on how to remove triggers. Along with its enduring relationship with BAI, NHP participates in community-based asthma initiatives such as the Greater Brockton Asthma Coalition, the Massachusetts Asthma Advocacy Partnership, and the Boston Asthma Home Visit Collaborative.</p> <p>ADMP interventions are stratified according to member acuity and include generalized mailings, personalized mailings, reporting to clinicians, and targeted telephonic outreach. Specific goals of the program are to improve patient/family self-management skills, enhance asthma management programs at primary care sites, improve the breadth and intensity of controller medication use, increase provider awareness of asthma treatment guidelines, decrease overuse of symptom relieving medications, and decrease asthma related emergency room (ER) and hospital utilization.</p>
<b>Coordinated Asthma Referral and Education (CARE) Program (San Bernardino County, CA)</b>	<p>The Coordinated Asthma Referral and Education (CARE) Program is a pediatric home visitation program that provides case management services. CARE provides one-on-one asthma education, home environmental assessment, and distribution of equipment and supplies to address environmental triggers associated with asthma. Referrals to the CARE program come from school nurses, parents, physicians, healthcare providers, and the Arrowhead Regional Medical Center Breath mobile program. The program is also promoted through presentations at community health fairs, advertisements, and flyers distributed in hospitals. Qualifying families receive three home visits from CARE Program staff. The initial home visit includes education, identification of asthma triggers in the home, instruction in asthma control, and emphasis on communication with school personnel and physicians. The program provides children with pillow and mattress covers, an air purifier, cleaning supplies, and an informational packet including a DVD and handouts. When necessary, the program provides peak flow meters, spacers, and portable nebulizers. All services, equipment, and supplies are provided at no cost to the families.</p>

PROGRAM NAME	DESCRIPTION
<b>Chronic Disease Health Management Program (CA4Health) (CA)</b>	<p>Public Health Institute’s CA4Health, a five-year Community Transformation Grant initiative (supported by the Affordable Care Act’s Prevention and Public Health Fund), funds 12 counties to work with clinics, hospitals, and community-based organizations to improve linkages between the healthcare delivery system and community resources that support healthier lifestyles and behaviors. Individuals with hypertension, heart disease, diabetes, and other chronic conditions need to acquire the confidence and skills necessary to improve their health. These skills, such as problem solving, the ability to brainstorm alternatives, and goal setting for behavior change, are not learned through traditional health education. CA4Health uses the Chronic Disease Self-Management Program (CDSMP), an educational workshop developed by Stanford University that has proved effective in helping individuals develop these skills. CA4Health is funded by the Centers for Disease Control and Prevention.</p> <p>One goal of the initiative is to increase the number of physician-led teams that link with community-based resources by engaging community health workers (CHWs). CHWs are trusted members of local communities who usually share ethnicity, language, socio-economic status, and life experiences with the community members they serve. These frontline public health workers link health and social services in communities, and build individual and community capacity to address health through outreach, intervention delivery, health education, informal counseling, social support and advocacy. In 2010, CHWs were recognized as an occupation by the federal Bureau of Labor and Statistics, and were included in the U.S. Preventive Services Task Force recommendations for team-based care in supporting medication adherence and healthy behaviors, reflecting their increasing role as important community assets.</p> <p>Initial efforts have focused on building CHW capacity within communities. This includes implementing evidence-based, chronic disease self-management programs led by CHWs. As access to workshops becomes more robust, local health departments are engaging communities in Wellness Summits, designed to facilitate organizational change within the healthcare system. As California lacks a formal certification process, counties are implementing strategies in workforce development, occupational regulation, and financing to support integration of CHWs in healthcare teams.</p> <p>To date, more than 300 CHWs have been trained as lay leaders to offer CDSMP in all 12 CA4Health counties. Many of the counties have conducted Wellness Summits to create systems change initiatives to ensure individuals with hypertension and other chronic conditions obtain recommendations to CDSMP. Six counties are currently working on workforce development strategies, four on occupational regulation, and two on financing.</p>
<b>IMPACT (University of Pennsylvania Health System) / Penn Center for Community Health Workers (Philadelphia, PA)</b>	<p>In the IMPACT™ model, community health workers provide tailored support to help high-risk patients achieve individualized health goals. IMPACT has been adopted by the University of Pennsylvania Health System as part of routine care for over 3,000 high risk patients. A Director and Community-based Interviewer can serve eight CHW Teams. Each CHW team is composed of one Manager, a half-time time Coordinator, and 8 CHWs (6 CHWs and 2 Senior CHWs). Because IMPACT is not disease or setting-specific, the CHWs within a given team can be spread across different practices or settings.</p>

PROGRAM NAME	DESCRIPTION
<b>Kentucky Homeplace (KY)</b>	Kentucky Homeplace was originally developed by the University of Kentucky Center for Excellence in Rural Health, based in the eastern Kentucky coal-mining town of Hazard, KY., as a demonstration project in 14 counties. Since its inception in 1994, this community health worker initiative has linked tens of thousands of rural Kentuckians with medical, social and environmental services they otherwise might have gone without. Homeplace's community health workers are trained to help medically underserved residents access appropriate health services. Emphasis is placed on preventive care, health education and disease self-management. Today, Homeplace's geographic service area includes most counties in eastern Kentucky.
<b>Core Health Program (Heart Failure Program and Diabetes Program) (Grand Rapids and Greenville, MI)</b>	Core Health is a free, 12-month program for adults with diabetes or heart failure. We provide one-on-one visits to patients' homes from a registered nurse and community health worker. Working with the patient's primary care physician (PCP), the program aims to help individuals to do the following: (i) Understand their health condition and how to access care; (ii) Manage their condition and learn how to work with the health care system; (iii) Improve their health through lifestyle changes; (iv) Set personal health goals. The program accomplishes these tasks by: (i) Educating patients based on their interests; (ii) Mentoring patients to help them meet their goals; (iii) Connecting patients with community resources.
<b>Community Asthma Prevention Program (CAPP) at CHOP (Philadelphia, PA)</b>	The Community Asthma Prevention Program (CAPP) offers free asthma education classes in familiar environments, such as schools, churches, daycare centers and community centers throughout the city. Classes are structured so both caregivers and children with asthma can learn simultaneously.
<b>Every Child Succeeds (OH and KY)</b>	<p>Every Child Succeeds (ECS) is significantly changing the life trajectory for at-risk children and their parents. ECS, which celebrated its 10-year anniversary in 2009, has provided more than 425,000 home visits and served more than 19,000 families. ECS' staff, volunteers, donors, and others are key to the program's strength.</p> <p>Every Child Succeeds assists families in Southwest Ohio and Northern Kentucky through home visits that help first-time parents create a nurturing, healthy environment. Home visits, which take place from pregnancy through the child's third birthday, are designed to ensure an optimal start, both physically and emotionally, for children.</p> <p>The program, made possible by the support of private donors and public funds, was founded in 1999 by three organizations: Cincinnati Children's Hospital Medical Center, Cincinnati-Hamilton County Community Action Agency and United Way of Greater Cincinnati. Fourteen local agencies provide home visitation, thirteen of which use the Healthy Families America (HFA) national model. One agency uses the Nurse Family Partnership (NFP) national model.</p>
<b>Health and Wellness Alliance for Children: Asthma Initiative (Dallas, TX)</b>	Equipping Children and Families for Asthma Wellness works to: (i) Create awareness and a sense of power among children and families regarding asthma management; (ii) Create peer groups (same age, older to younger kids) to teach, support and encourage children with asthma; (iii) Deliver in-home education for parents and children; (iv) Train community residents to serve as community health workers or other asthma health literacy educators from the community to provide asthma education to families in their neighborhoods in variety of settings.

PROGRAM NAME	DESCRIPTION
<b>Southeastern Diabetes Institute (Williamson Health and Wellness Center) (Williamson, WV)</b>	The Williamson Health and Wellness Center (WHWC) is a Federally Qualified Health Center (FQHC) located in Williamson West Virginia. Community health workers, serving as liaisons between doctors and patients, empower residents to live healthier lifestyles.
<b>Just for Us (Durham, NC)</b>	Many lower-income Durham seniors living with chronic, debilitating health conditions, such as hypertension, diabetes and heart conditions are unable to access patient care. Through the inter-agency partnership that forms the basis of Just For Us, low-income seniors in Durham have access to the consistent care they need. Just for Us offers in-home medical services to older adults and adults with disabilities in Durham's public and subsidized housing facilities and group homes that cannot access care on their own. The Just for Us medical team includes a supervising family physician, social worker, nutritionist, occupational therapist, and community health worker. The Just for Us social worker manages care and helps patients apply for benefits such as SNAP and Medicaid.
<b>Healthy Living Collaborative of Southwest Washington: Strengthening Neighborhoods Project (WA)</b>	Starting in 2014, the Healthy Living Collaborative of Southwest Washington has integrated systems changes with a neighborhood-based pilot project to mitigate the factors that affect individual and community health and well-being. Working in neighborhoods throughout the region that are facing significant health disparities, the pilot will identify the people who community members look to when they need help. It will recruit and train these people to become Community Health Workers who will work individually and neighborhood-wide to facilitate health improvements. At the same time, the pilot, through this new segment of community health workers (CHWs), will become a conduit for reporting to the Collaborative about how to best approach policy, system, and environmental changes to achieve sustainable improvements in the social and physical environments that promote good health for all. This direct line to the real-time needs of communities will uniquely position the Collaborative to ensure that their systems-level efforts remain responsive to the individuals and families who make up this region, especially the most vulnerable.
<b>Denver Health Outreach Services (Denver, CO)</b>	Denver Health Outreach Services employs 12 community health workers (CHWs) to conduct culturally effective outreach with underserved residents in Denver neighborhoods and with special populations (such as pregnant women). The types of services they provide include community-based screening and health education, assistance with enrollment in publicly funded health plans, referrals, system navigation, and care management. The outreach-based Denver Health 'Men's Health Initiative' is conducted by 2 CHWs who aim to increase access to and affordability of healthcare for underserved men in Denver, reduce socio-demographic health disparities, and improve seamlessness of care by using CHWs. Specific interventions the community health workers perform include community-based screening and health education, assistance with enrollment in publicly funded health plans, referrals, system navigation, and care management. In tandem with the initiative's overarching goals, an ongoing aim is to reduce hospital admissions/service utilization for medical conditions better handled by primary care and chronic disease management, including mental health care and substance abuse treatment.

PROGRAM NAME	DESCRIPTION
<b>Elder Multicultural Access and Support Services (San Diego County, CA)</b>	The Union of Pan Asian Communities manages and oversees the Elder Multicultural Access and Support Services (more commonly known as EMASS) Program, which uses community health workers known as promotores to provide culturally competent mental health education and services to elderly racial and ethnic minorities in San Diego County. Working with clients of similar racial and ethnic backgrounds and often of the same age, promotores offer group classes covering recreation, healthy living, and mental health education; one-on-one counseling and support; referrals to language-concordant mental health providers; and transportation to, and translation services at, appointments with medical and mental health providers. The program has enhanced access to mental health screening, referral, education, and peer support, leading to improved mental health status and health literacy.
<b>George Washington (GW) Cancer Institute (Washington, DC)</b>	The GW Cancer Institute was founded in 2003 with the vision to set the standard for patient-centered care and eliminate cancer health disparities. Its mission is to ensure access to quality, patient-centered care across the cancer continuum through community engagement, patient and family empowerment, health care professional education, policy advocacy, and collaborative multi-disciplinary research. Through its partnership with the National Area Health Education Center (AHEC) Organization the GW Cancer Institute has worked to develop health practitioners, including patient navigators and community health workers (CHWs), to support this mission. The Capital City AHEC (CCAHEC) has served as a leader for CHW and patient navigation training and education. It's DC Pink Divas initiative incorporates a lay health worker training, navigation, and outreach program that combats high rates of breast cancer mortality by empowering, educating, and impacting women in vulnerable communities. The DC Pink Divas initiative provides navigation, mammograms, and resources to women.
<b>Aetna's Asthma Program for Medicaid Members in Delaware (DE)</b>	<p>Aetna assessed asthma ER utilization over a one year period to determine if there were differences in ER utilization by race and ethnicity in its insured population. For African Americans, ER utilization was more than three times higher for both adults and children when compared to whites. For Hispanics, ER utilization was nearly two times higher for both adults and children when compared to whites. Based on the striking differences in asthma ER utilization by race and ethnicity, Aetna sought to address and reduce this disparity by developing a culturally appropriate, evidence-based program targeting high-risk populations. Its goal was to impact ER asthma utilization by improving the quality of asthma care for this population while simultaneously reducing avoidable ER visits in a specific state or region.</p> <p>In partnership with Delaware Physicians Care (DPC) and Disease Management, Aetna identified a high-risk target population. The target population was comprised of Delaware members with an asthma diagnosis and at least one ER visit. The age ranges of members were from five to 50 years old.</p> <p>Aetna's current asthma disease management program offers: (i) Asthma health coaching; (ii) Culturally competent training for Aetna clinical staff; (iii) Coverage and encouragement of primary care provider and specialist visits; (iv) Physician education and engagement; (v) Controller and rescuer medications; and (vi) Asthma-related medical supplies such as spacers, peak flow meters, nebulizers, etc.</p>



PROGRAM NAME	DESCRIPTION
	<p>As of 2012, for members who did not want strangers in their homes, Aetna began using community health workers (CHWs), who are considered known and trusted advisors in their community. Aetna is developing standardized asthma training for CHWs using the EPA home assessment tool as a guide.</p>
<p><b>Wake Forest Baptist Medical Center, FaithHealthNC (Winston-Salem, NC)</b></p>	<p>FaithHealthNC is a new initiative to improve health by forging covenants between faith communities and health care providers. Providers such as Wake Forest Baptist Medical Center, for example, will seek to create covenants in faith communities. Once a covenant is in place, the Medical Center will provide health care liaisons to help clergy and faith community volunteers (known as Congregational Care Providers) work to ensure that member needs are met during times of illness.</p> <p>Volunteers from congregations offer health care ministries for their members and neighbors. When illness strikes, they provide support before, during and after hospitalization. They make home visits, provide emotional and spiritual support, and help with meals, transportation and medications. They also hold educational events on preventive health and wellness.</p> <p>Wake Forest Baptist provides Health Care Liaisons to help clergy and their volunteers in providing care and ensuring that member needs are met during times of illness. They provide training in respecting patients' privacy, hospital visitation, care at the end of life, mental health first aide, home health care, and other topics. They ensure that member congregations receive a wealth of educational resources aimed at improving health.</p>
<p><b>Washington Heights/Inwood Network Asthma Program (WIN) (New York, NY)</b></p>	<p>In 2006, New York-Presbyterian Hospital initiated the WIN for Asthma program, a hospital-community partnership designed to address local health disparities and improve outcomes for children with poorly controlled asthma. Bilingual community health workers (CHWs) serve as the single point of contact for families who enroll in the yearlong care coordination program. Participating families receive comprehensive asthma education, home environmental assessments, trigger reduction strategies, on-going support, and social service referrals that address competing obstacles such as housing, immigration, and employment. The CHWs are based in partner community-based organizations, allowing them to remain anchored in the community while also maintaining a strong presence in the hospital and ambulatory care network (ACN) clinics where they conduct rounds and provide culturally appropriate education and support to families who require immediate assistance.</p>
<p><b>Community Outreach and Patient Empowerment (Navajo Nation, AZ)</b></p>	<p>The Community Outreach and Patient Empowerment (COPE) Project launched in 2009 to help improve the health of people living within Navajo Nation. Comprised of a partnership between the Navajo Nation Community Health Representative Program, Indian Health Service (IHS), Brigham and Women's Hospital, and Partners In Health, COPE provides training and resources to teams of community health workers, known as Community Health Representatives (CHRs), who have been working in Navajo Nation since the 1960s. Their goal is to improve the overall health of high-risk patients with poorly controlled chronic diseases and those at risk of developing chronic diseases living within Navajo Nation.</p> <p>A main focus of COPE is providing the CHR teams with training, resources, and materials to improve the health of their communities. The CHRs receive monthly health education trainings and quarterly skill-building trainings from the COPE team and local health care providers and educators. COPE has developed structured teaching modules, including</p>

PROGRAM NAME	DESCRIPTION
	<p>interactive materials designed for people with low levels of literacy who do not speak English as a first language. These resources help CHRs educate their patients about how to care for and improve their chronic conditions.</p>
<p><b>Children's Home Society of Florida: Improving Child Well-Being Through Integrating Care in a Community School Setting (FL)</b></p>	<p>The Children's Home Society of Florida project established a medical home for students, families, teachers and the community at the Wellness Cottage at Evans High School, which aims to reduce Emergency Department and inpatient utilization, increase sexually transmitted disease awareness, and address food insecurities and traumatic stress. Four community partners including Children's Home Society of Florida (child welfare/behavioral health), the University of Central Florida, Orange County Public Schools and Central Florida Family Health Center operate the Wellness Cottage, a hub for health, social, behavioral health, parental support, and after-school activities. The Central Florida Family Health Center provides onsite primary care. Health risk assessments inform health promotion activities while student health ambassadors promote healthy lifestyles. Community health workers (CHWs) help parents remove barriers to care. The University of Central Florida provides social work, nursing, and medical interns. Primary Health Maintenance Organizations facilitate access to the clinic and assist in evaluating health costs.</p> <p>Programs and services targeting wellness are available in the school and community. It is predicted that the services provided at Evans Wellness Cottage will improve both the physical health and behavioral health of students, staff, and adults living in the targeted area. The model is designed to create a safe environment where students can learn better health care seeking behaviors and personal health management. In addition, informal and formal connections help facilitate the development of trust and establish critical lines of communication to improve access to care at the Evans Wellness Cottage.</p>
<p><b>Clifford W. Beers Guidance Clinic Inc.: New Haven Wrap Around (New Haven, CT)</b></p>	<p>The Clifford W. Beers Guidance Clinic, Inc. project delivers evidence-based, culturally appropriate integrated medical, behavioral health, and community-based services coordinated by a multidisciplinary Wraparound Team. Services include: (i) family engagement, recruitment, and education provided by trained community health workers (CHWs) in community-based settings; (ii) multidisciplinary triage, screening, and assessment conducted by the Wraparound Team and including assessments of each family's physical, behavioral, and psychosocial risks, needs, and strengths; (iii) family-focused care plans developed with the family, family supports, and the Wraparound Team and used to guide care and interventions; (iv) care coordination provided by a Wraparound Team and focused on coordinating the provision of appropriate care across multiple care settings, managing care transitions, reconciling and managing medications, and coordinating access to crisis support and wellness and social support services; and (v) wellness and social support services provided at the hubs and at community-based organizations to address chronic and toxic stress (e.g., smoking cessation, parenting courses, diabetes prevention, meditation).</p> <p>The model focuses on high-need families, addresses medical and behavioral health care needs, integrates services across multiple health care institutions, and addresses the "chronic and toxic stress" experienced by the target population families. This project integrates care for families and care delivery across multiple health care and community-</p>



PROGRAM NAME	DESCRIPTION
	based institutions, which will reduce the fragmentation that currently puts families at risk for poor care, poor outcomes, and excessive costs.
<b>Johns Hopkins University: Comprehensive home-based dementia care coordination for Medicare-Medicaid Dual Eligibles in Maryland (Baltimore, MD)</b>	The Johns Hopkins University project tests the implementation of Maximizing Independence at Home (MIND), an Alzheimer’s disease / Dementia (AD) -targeted care coordination model that systematically assesses and addresses the critical barriers to adults with AD remaining in their home. The target population is adults eligible for Medicare and Medicaid (dual eligibles) in the Baltimore region. The model creates a broad link between community health agencies, medical providers and community resources, and innovatively synthesizes the expertise and experience of non-clinical community workers, nurses, physicians, and occupational therapists. Delivered over 18 months, MIND addresses 21 care need domains for patients and caregivers. The interdisciplinary team performs comprehensive, in-home, AD-related needs assessments followed by individualized care planning and implementation of six basic care strategies (resource referrals, environmental safety, dementia care education, behavior management skills training, informal counseling, problem-solving), on-going monitoring, and assessment and planning for emergent needs. Each component of the intervention is based on clinical practice guidelines and prior research, and is combined for maximum impact.
<b>The Trustees of Columbia University in the City of New York: MySmileBuddy (New York, NY)</b>	The Trustees of the Columbia University in the City of New York project are testing a model that uses family-level, peer-counseled, and technology-assisted behavioral risk reduction strategies, aims to divert children with early- and advanced-stage early childhood caries (ECC) from high-cost surgical dental rehabilitation (DR) to low-cost non-surgical disease management (NSDM). Together, parents and community health workers (CHWs) will use MySmileBuddy (MSB), a mobile tablet-based health technology, to plan, implement, and monitor positive oral health behaviors, including dietary control and use of fluorides, which arrest ECC's progression. MSB was designed with a strong theoretical basis, which applies key principles of risk-based triage, early intervention, individualization, and motivational interviewing. MSB is designed to enhance parental knowledge, skills, and self-efficacy to reduce caries-related risk factors, proportionate to their child's ECC experience. CHWs will meet in person with parents of children with early-stage ECC bimonthly for 1 year, and with parents of children with advanced-stage ECC weekly for the first 4 weeks, then bimonthly thereafter for the remainder of the year. Additionally, CHWs will provide tailored telephone interventions between in-person meetings to provide additional support and reinforce behavior change goals. CHWs will also assist parents in scheduling semiannual dental examinations at affiliated sites.
<b>Sinai Urban Health Institute (SUHI)- Healthy Home, Healthy Child: The Westside Children’s Asthma Partnership (HHHC) (Chicago, IL)</b>	<p>Since 2000, SUHI and Sinai Children’s Hospital (SCH) have worked to reduce the burden of asthma in underserved, minority Chicago communities, where up to one in four children suffer from asthma. In 2008, with funding from the U.S. Centers for Disease Control and Prevention (CDC), SUHI and SCH initiated Healthy Home, Healthy Child: The Westside Children’s Asthma Partnership (HHHC), a comprehensive, community-based program that centers on an intensive, home visit program led by community health workers (CHWs) to address asthma medically, socially and environmentally. The HHHC exclusively focuses on children with poorly controlled asthma living in poor communities on the Westside of Chicago.</p> <p>The program’s objective is to significantly impact asthma-related measures of morbidity, urgent health care utilization and quality of life by decreasing asthma triggers in the home</p>

PROGRAM NAME	DESCRIPTION
	<p>environment, improving asthma care knowledge among primary caregivers, and improving caregivers' confidence in their ability to manage asthma. To achieve these goals, CHWs provide asthma education during six home visits over the course of a year. Visits focus on providing tailored education to caregivers and children on medical management and addressing the disproportionate presence of asthma triggers in the home. Having a CHW visit participants' homes means that families do not have to arrange for transportation as visits can be scheduled to accommodate families. The CHWs can serve as advocates and liaisons between the families and the broad network of partners that SCH and SUHI have assembled to support the HHHC. The CHWs also record case information in a shared database for partners to access and initiate extensive telephone and email communication to discuss cases, asthma management education, home environmental exposures and controls, needed social support and assistance to help families navigate the health care system.</p>
<b>Monroe Plan for Medical Care Pediatric Asthma Program (Rochester, NY)</b>	<p>The Monroe Plan for Medical Care is a managed care organization, located in the Rochester, New York area. The Monroe Plan covers 5,633 children with asthma in Monroe County and 12 neighboring rural counties. With a high asthma burden among children in the area, the Monroe Plan saw trends in pediatric asthma and noticed high admission rates that disproportionately affected minorities. Monroe Plan partnered with ViaHealth, a health care delivery system, to launch a program to shift asthma care toward improved patient self-management. The program now covers all of the plan's members with moderate to severe pediatric asthma and includes assistance to providers in creating asthma action plans and comprehensive provider and member education. Home assessments are conducted by bilingual asthma outreach workers to identify and reduce environmental triggers. As a result of these interventions, ER visits decreased from 1.1 visits per person to .95 visits per person over the first three years of the program. Inpatient admissions decreased from 98.3 admissions per thousand to 84.15 per thousand in the first three years of the program.</p>
<b>Salud Para Todos (Health for All) (Yuma County, AZ)</b>	<p>Salud Para Todos ("Health for All"), a partnership between a health clinic system and a community organization, coordinates outreach workers, known as promotoras, to help Mexican farm workers navigate the health care system and improve their health. Promotoras from the clinics work with physicians and directly with patients before, during, and after visits to make sure they understand their diagnoses and treatment. Promotoras from the community organization hold classes and support groups to encourage healthier lifestyles and appropriate health care. Promotoras from both organizations work closely together on an ongoing basis. A preliminary review found that participants increased physical activity, improved dietary habits, and had higher satisfaction with their health care. Clinic staff also increased their cultural competence.</p> <p>Sunset Community Health Center, a nonprofit corporation, operates four community-based clinics that serve low-income individuals in Yuma County, AZ. Campesinos Sin Fronteras, a nonprofit, community-based organization, serves migrant and seasonal farmworkers and other members of the low-income Hispanic community in Yuma County by helping them access health information, treatment, and safe and affordable housing. The Salud Para Todos program grew out of an increasing awareness among leaders and staff within both organizations, as well as input from farm workers themselves, of the barriers that local farm workers (who are primarily from Mexico) face in accessing high-quality health care services. These barriers include problems in scheduling and attending doctor's appointments,</p>

PROGRAM NAME	DESCRIPTION
	<p>difficulties in understanding recommended treatments, and lack of availability of ongoing care management for chronic illnesses. Staff at both organizations believed that by joining forces and using the promotora model (which they previously used together in another program), they could enhance these migrant workers' experiences at the medical clinics and help them establish better health-related habits and behaviors at home.</p>
<p><b>Inland Empire Health Plan (IEHP) - Health Navigator Program (San Bernadino County, CA)</b></p>	<p>Inland Empire Health Plan (IEHP) has developed an innovative program called Health Navigator designed to help IEHP members better understand how, when and where to get their medical care. The program is funded by IEHP and First 5 San Bernardino. Launched in June 2010, the Health Navigators serve most of San Bernardino County and Riverside metro. It aims to increase preventive-care visits and reduce avoidable emergency room visits (ER) and hospitalizations. The program will serve as a link among members, providers and IEHP, ultimately leading to better communication and care.</p> <p>IEHP is the first health plan in the nation to have a full-time, in-house team dedicated to helping IEHP members navigate the healthcare system. Collaboration with IEHP's primary care physicians (PCP) is a key element for the program's success. Prior to the launch, the Health Navigators connected with PCPs to inform them about the program's promotion of preventive-care visits and how the program planned to help connect families to their offices.</p> <p>The Health Navigators, who are bilingual in English and Spanish, schedule in-home visits with IEHP members and their families. To prepare for the first visit, the Health Navigators utilize the members' health records to identify any medical needs, such as immunizations, and preventive-care services. Furthermore, during the first visit, the Health Navigators conduct an initial assessment to determine any other medical and social service needs. These efforts allow the Health Navigators to provide personalized education, guidance and advice on subsequent visits. Specifically, Health Navigators will educate IEHP members about the following:</p> <ul style="list-style-type: none"> <li>• What services their PCP provides</li> <li>• When they should see their PCP for a medical need</li> <li>• The importance of preventive care to stay healthy and prevent disease</li> <li>• Three options to get non-emergent medical help – PCP, the IEHP 24-Hour Nurse Advice Line and extended or after-hours urgent care clinics</li> <li>• Community resources they may find helpful</li> </ul> <p>After the initial visit, the Health Navigators conduct two more visits to continue education and to assess whether the members' knowledge on how to access care has increased.</p>
<p><b>Child Parent Enrichment Project (CPEP) (Contra Costa County, CA)</b></p>	<p>Perinatal abuse prevention projects are increasingly favored but rarely evaluated. An experimental evaluation of the Child Parent Enrichment Program (CPEP) was conducted, in which women were referred to the project during or just after pregnancy if identified as at-risk of engaging in child abuse by community professionals. Clients were randomly assigned to CPEP services or traditional community services. CPEP services involved six months of home visiting by paraprofessional women and linkage to other formal and informal community resources. Analysis of study results demonstrated advantage for the CPEP group</p>

PROGRAM NAME	DESCRIPTION
	in prenatal care, birth outcomes, better reports of child temperament, and better indicators of child welfare. CPEP mothers tended to report better well-being. No significant differences were demonstrated for levels of formal and informal support. Reports of child abuse were similar for both groups. Consumer satisfaction indicates that clients valued the program. The preliminary results argue for further use and evaluation of perinatal child abuse prevention services.
<b>Baltimore Maryland CHW Program in Emergency Departments (Baltimore, MD)</b>	This program introduced trained paraprofessionals, community health workers (CHWs), into the emergency department (ED) to supplement providers' routine efforts in high blood pressure detection, treatment, and follow-up among high risk black men. In a demonstration project over a 2-year period, CHWs provided (i) blood pressure and pulse measurements, and educational counseling regarding high blood pressure and cardiovascular risk factors; (ii) telephone pre-appointment reminders to improve ED follow-up visit rates; and (iii) re-contact of patients failing to show for their ED follow-up visits to improve return rates even after missed blood pressure appointments. The results reported support the idea that individuals from the community, trained as paraprofessionals, can improve appointment keeping as well as assist in screening and counseling for chronic conditions within the ED. These CHWs are seen as having the additional advantage of enhancing the integration of the ED, the community, and continuing care sites.
<b>Safe Block Project (PA)</b>	The Safe Block Project is a comprehensive injury trial on home hazards and injury prevention knowledge in a poor urban African-American community. The intervention, carried out by trained community outreach workers, consisted of (i) home modification for simple prevention measures, (ii) home inspection accompanied by information about home hazards, and (iii) education about selected injury prevention practices. An evaluation study found that a significantly larger proportion of intervention homes than control homes had functioning smoke detectors, syrup of ipecac, safely stored medications, and reduced electrical and tripping hazards. No consistent differences were observed between control and intervention homes on home hazards requiring major effort to correct.
<b>The Maternal Outreach Worker (MOW) Program (NC)</b>	The Maternal Outreach Worker (MOW) Program is a social support intervention using lay heelers to provide support, health education, and outreach to Medicaid eligible women at risk for poor pregnancy and parenting outcomes. MOWs work with pregnant women and their infants up to their first birthday. Program goals are to reduce infant morbidity and mortality by fostering (i) earlier entry into prenatal care and other supportive programs, (ii) improved consistency of care, (iii) adoption of healthful behaviors and improved parenting skills, (iv) enrollment of infants in preventive health care and social services, (v) increased time interval between pregnancies and (vi) decreased numbers of unplanned pregnancies. A major goal of these strategies is improved infant birth weights. State Health Department and University collaborators designed a two-pronged evaluation comprised of program wide and interview study components to assess the impact of the program on pregnancy outcomes, health behaviors, and infant status. Findings show the need to further explore appropriate measures of maternity support program outcomes and indicate inconsistent program benefit among subpopulations.
<b>Healthy Start Program (HSP) (HI)</b>	Hawaii's Healthy Start Program is a model of paraprofessional home visitation to improve family functioning and decrease child abuse and neglect. It includes: (i) population-based early identification of at-risk families of newborns through screening and assessment, and (ii) home visiting by trained paraprofessionals in the child's first 3 years of life to improve parent and child outcomes through direct support services, parenting education and case

PROGRAM NAME	DESCRIPTION
	management to ensure access to a pediatric primary medical home and other needed community resources.
<b>Wellness Project (MS)</b>	The Wellness Project is a culturally competent cancer education program that trains cancer survivors to promote early detection and increased breast self-examination and mammography in a population of rural, underserved, African American women. The primary setting for the Wellness Project, which incorporates spirituality and faith, was the African American church. The results of the program evaluation demonstrated that intensive, community-based, culturally sensitive educational programming incorporating the spiritual environment of the faith community can possibly influence breast cancer screening behaviors among rural, underserved African American women. Through the use of community churches and cancer survivors, breast cancer screening activities can be improved in this population.
<b>REACH-Futures Program (Chicago, IL)</b>	<p>The Resources, Education and Care in the Home (REACH) program was a multiagency service model developed by faculty and staff of the University of Illinois at Chicago and developed and implemented in collaboration with the Chicago Department of Public Health (CDPH), the Chicago Visiting Nurses Association (VNA), and Westside Future, a community-based social service agency.</p> <p>In this program, community health advocates in a trained community resident-nurse team screen mothers and infants for problems and refer them to health professionals and social services as appropriate. The community health advocates were part of a service project funded by the Healthy Tomorrows Partnership for Children program, a collaborative health promotion program developed by the Office of Maternal and Child Health and the American Academy of Pediatrics. The project, REACH-Futures, was administered through a university hospital located in the urban community served by the project. This community had high rates of infant mortality, post neonatal mortality, and socioeconomic problems. REACH-Futures used a trained community health advocate, called a Maternal-Child Health Advocate, teamed with a professional nurse to promote infant health through home visiting as well as through community educational programs.</p>
<b>Eat Well, Live Well (EWLW) Nutrition Program (St. Louis, MO)</b>	The Eat Well, Live Well nutrition Program was a community-based, dietary change program delivered by peer educators to low-income African American women. EWLW was developed by partnership of university-affiliated health professionals and trained peer educators from a wellness initiative of a social service agency with a long history of providing services to targeted African American communities in a large Midwestern city. This community-based peer-delivered nutrition program promoted dietary change among low-income, African American women by activation. An activation approach emphasizes risk awareness, self-efficacy, and skills training through active learning exercise in the community. An ultimate goal of the EWLW Nutrition Program was to reduce the risk of obesity-related major chronic disease such as diabetes, hypertension, and hypercholesterolemia in African American women. The program goals were to increase low-fat dietary patterns and to reduce fat intake using an activation approach.

PROGRAM NAME	DESCRIPTION
<b>Native American Cancer Research (NACR)</b> (Denver, CO)	Local Native American women are trained as Navigators that became known as Native Sisters. Native Sisters conduct brief face-to face and/or phone interventions to present participants with information on breast cancer and the value of early detection. Participants also received information on local mammography facilities and resources available from the CDC-funded breast and cervical cancer early detection and prevention program.
<b>Project Sugar 1 &amp; 2</b> (MD)	Phase 1 of this project consisted of a 4-arm trial among 186 African Americans with type 2 diabetes that evaluated the effects of nurse case manager (NCM), community health worker (CHW), and combined NCM and CHW interventions to improve diabetic control compared to usual care. Phase 2 was implemented from 2000 to 2005 and expanded the study to include 542 African Americans. The intervention featured a team intervention approach using an NCM and CHWs, who conducted clinic and home-based assessments and interventions, providing feedback to the participant's primary care physician as necessary.
<b>Amigos en Salud</b> (Los Angeles, CA)	Amigos en Salud (Friends in Health) is a culturally competent diabetes intervention comprised of three full time bilingual community health workers (CHWs) that have diabetes or have had experience with the disease through a family member. CHWs deliver diabetes care and education in the clinic setting working directly with individual patients. CHWs used standardized clinic protocol for education and monitoring based on ADA recommendations.
<b>California WISEWOMAN Program- Heart of the Family Project</b> (Los Angeles and San Diego, CA)	The Heart of the Family project is a within-site clinical trial at four health centers in Los Angeles and San Diego. The project focuses on lifestyle intervention on cardiovascular disease risk factors through behavior counseling. The intervention is provided by bilingual, bicultural, female CHWs.
<b>Positive Choices</b> (Indianapolis, IN)	<p>The Positive Choices (PC) program was developed by the Indiana Comprehensive Health Insurance Association, the state's high-risk pool, for people living with HIV (PLWH) who were also enrolled in the Health Insurance Assistance Plan (HIAP). Lay health workers (LHWs) worked with individuals from the PLWH patient population on a one-on-one basis, either in face-to-face meetings or by phone with a concentration on providing direct health education, behavioral skill development, and/or informational or emotional support, which typify the "educator-only" model of LHWs. LHWs in the PC program acted as "health coaches," using behavioral change and motivational techniques to encourage the PLWH to be an active participant in the management of his/her illness.</p> <p>The overall objective and purpose of the Positive Choices program is to enhance the quality of life of the individuals in the program. To meet this goal, PC incorporates three key components to maximize results:</p> <ol style="list-style-type: none"> <li>1. To provide personal facilitators who assist and address each member's specific need</li> <li>2. To provide health care benefit flexibility creating enhanced access to all needed medical care</li> <li>3. To provide incentives for adherence to best medical practices</li> </ol>
<b>Madres a Madres</b> (Los Angeles, CA)	Madres a Madres (Mothers to Mothers) is a parent training program for immigrant Latina mothers and their elementary school-aged children. The program is a four-session intervention delivered individually to mothers in the home setting by promotoras. Each session is 2 hours, and consists of instruction in four core content areas: (i) normative child development and related social competencies, (ii) positive parent-child interaction techniques, (iii) positive behavioral management strategies, and (iv) service navigation to



PROGRAM NAME	DESCRIPTION
	<p>support access to community resources. Promotoras teach mothers to increase positive communication with the focal child through the use specific skills during a designated interaction period. Visual materials, video segments, interactive role-plays, and worksheets are used to teach mothers the above intervention content. Materials were designed specifically for use with Spanish-speaking mothers with low levels of literacy and integrate familiar, community-relevant content.</p>
<p><b>Rural and Urban Access to Health (IN)</b></p>	<p>Rural and Urban Access to Health (RUAH) is a community based care coordination program sponsored by St. Vincent Medical Group. Inspired by the work of St. Vincent de Paul, the purpose of RUAH is to connect friends, family and neighbors to a comprehensive, integrated delivery network of health, human and social services resulting in improved access and removal of barriers to needed resources.</p> <p>Health access workers assist patients by helping them connect to care by finding a doctor, applying for health coverage programs, connecting to community resources and agencies as well as prescription assistance programs.</p>
<p><b>Community Health Access Project (CHAP) (OH)</b></p>	<p>The Community Health Access Project (CHAP) implemented the Pathways Model, which employs community health workers (CHWs) who connect at-risk individuals to evidence-based care through the use of individualized care pathways designed to produce healthy outcomes. This model promotes timely, efficient care coordination through incentives and prevents service duplication through use of a Community Hub, a regional point of patient registration, and quality assurance supporting a network of agencies involved in providing care to the target population. The first implementation of the model in Richland County, OH, resulted in increased services to at-risk women and a decline in the rate of low birth weight babies.</p>
<p><b>Chinese Women's Health Project (Seattle, WA and Vancouver, BC)</b></p>	<p>The Chinese Women's Health Project conducted two simultaneous interventions designed to increase cervical cancer screening in Chinese women living in Seattle, WA and Vancouver, British Columbia. Both interventions provided Chinese women between the ages of 20 and 69 with culturally and linguistically sensitive educational materials (video, brochures, and fact sheets). The "low intensity" method consisted of mailing these packets to eligible women, while the "high intensity" intervention involved home visits by outreach workers fluent in Cantonese, Mandarin, and English.</p> <p>The program aimed to increase the rate of cervical cancer screening in Chinese women living in North America in response to research findings of significantly lower cervical cancer screening rates in Chinese women.</p> <p>In an evaluation study, women were randomly assigned to one of two experimental arms or control status. Statistically significant differences in cervical cancer screening were found in both intervention groups: 39 percent of women in the outreach intervention group and 25 percent of women in the direct mail intervention reported having a pap smear during the intervention period, as compared to 15 percent of women in the control group. The researchers concluded that culturally and linguistically appropriate interventions may improve pap testing levels among Chinese women in North America.</p>

PROGRAM NAME	DESCRIPTION
<b>Access El Dorado (ACCEL)</b> <b>(El Dorado County, CA)</b>	<p>The El Dorado County Safety Network Technology Project was an ambitious effort undertaken by Access El Dorado (ACCEL) to increase the patient safety and quality of care delivered to uninsured and underinsured children. ACCEL is a partnership between the El Dorado County Health Services Department, Barton Healthcare System, Marshall Medical Center, El Dorado County Community Health Center, and Shingle Springs Tribal Community Health Clinic. ACCEL incorporates physicians, nurses, community health workers, mental health clinicians, and administrators.</p> <p>Based on the successful outcome-based model, ACCEL utilizes a Care Pathways approach that includes step-by-step actions for resolving problems and tracking outcomes as part of the process. ACCEL has developed and implemented seven Care Pathways aimed at increasing access to care. These Pathways focus on identifying and helping individuals who need to secure health insurance coverage, assisting individuals in securing a medical home, using a medical home appropriately, accessing pediatric mental health services, and gaining access to local specialty care services. Community health outreach workers from ACCEL participating agencies help individuals and families navigate complex medical systems and access providers to ensure that the problem or barrier to getting appropriate health care is resolved and that clients learn related self-care behaviors.</p>
<b>AH! (Asthma Health) Program (ME)</b>	<p>The AH! Program, sponsored by MaineHealth (a not-for-profit integrated healthcare delivery network that includes providers and other healthcare organizations), has been working since 1998 to improve the quality of life for children and adults with asthma. Education and self-care are the focus of the program. The program works to improve the coordination of asthma care among people with asthma and their families, community asthma educators, care managers, doctors, nurses and respiratory therapists. People enrolled in the AH! Program has fewer hospitalizations, emergency room visits and asthma-related sick days from work and school. The AH! Program staff works with patients and families, doctors' offices, hospitals, schools, childcare organizations, pharmacies, businesses, community agencies and public health organizations to better the lives of people with asthma.</p>
<b>Deaf Community Health Worker Initiative (MN)</b>	<p>Minnesota is the first state to have community health workers (CHWs) who are deaf. Deaf Community Health Workers (DCHWs) come from the communities or cultures they serve, enabling them to build trust and the vital relationships necessary to lower health disparities in Minnesota. DCHWs ensure that clients have access to effective, appropriate, timely care. DCHWs increase patients' health knowledge, attend to cultural differences, and improve patients' access to services.</p> <p>DCHWs provide in-house services from assessment to discharge, which include:</p> <ul style="list-style-type: none"> <li>• Identifying patient communication needs (language, literacy, health literacy)</li> <li>• Ensuring interpreter meets patients' register, dialect or signing style</li> <li>• Advocating for provision of alternative communication formats if needed (audio and visual i.e. large print, video, picture, graphics)</li> <li>• Ensuring comprehension of informed consent &amp; patient rights</li> <li>• Assisting patients in gathering family medical history</li> <li>• Determining if patients need assistance in completing medical, insurance or financial forms</li> </ul>



PROGRAM NAME	DESCRIPTION
	<ul style="list-style-type: none"> <li>• Encouraging and modeling good patient/provider communication</li> <li>• Facilitating a culturally mediated dialogue</li> <li>• Communicating information about unique patient needs to care team.</li> </ul> <p>DCHWs also provide individual &amp; community outreach &amp; health education, which include:</p> <p>Pre-visit planning for healthcare visits</p> <ul style="list-style-type: none"> <li>• Assisting clients in identifying and resolving barriers to care (child-care, transportation, money, insurance)</li> <li>• Conducting post-visit follow-up</li> <li>• Reinforcing compliance behaviors</li> <li>• Providing opportunities for community-based health education</li> <li>• Teaching and reminding patients about the need to keep appointments</li> </ul>
<b>Community Legal Aid and UMass Memorial Medical Center Medical-Legal Partnership (Worcester, MA)</b>	<p>Since 2003, Community Legal Aid and UMass Memorial Medical Center have had a medical-legal partnership in which pediatric primary care staff connects patients with civil legal aid services when housing, insurance, education, or public benefit problems interfere with their health. In 2014, the partners began using the program specifically as a vehicle to address housing conditions that can trigger asthma attacks.</p> <p>The Massachusetts Medical Society funded a small pilot program at UMass Memorial in which attorneys trained community health workers (CHWs) to screen families for housing-related civil legal problems—in particular for substandard housing conditions and threats of eviction—during home visits in the Belmont Street Community School neighborhood. The health workers then provided asthma management education and a healthy home assessment, addressing both medication management and housing conditions simultaneously. The health workers were able to initiate code enforcement actions and refer families who needed legal counsel in addressing housing conditions to the medical-legal partnership attorney.</p> <p>The pilot served 30 children and gave CHWs, UMass Memorial providers, and civil legal aid partners an opportunity to build strong relationships and hone service delivery, from referral mechanisms to case feedback loops. After the pilot concluded, they received a grant from the Massachusetts Prevention and Wellness Trust Fund, scaling the asthma home visiting project from a single neighborhood intervention to a city-wide approach.</p> <p>The grant project brought in new partners, including the City of Worcester Division of Public Health and Worcester’s two federally qualified community health centers — Edward M. Kennedy Community Health Center and Family Health Center of Worcester. Together, these centers provide a medical home to many of the low-income asthmatic children in Worcester. The target population of the new grant is the approximately 700 low-income children in Worcester who are listed on participating clinical sites’ asthma registries.</p>

## APPENDIX F – Database Fields

### I. LOCATION

#### (a) State

#### (b) Geographic Reach

- National
- Statewide
- County
- Regional
- City/Metropolitan Statistical Area
- Select Neighborhoods

#### (c) Intervention Setting

- Urban
- Rural
- Suburban

### II. TARGET HEALTH OUTCOMES/ OUTPUTS

#### (a) Target Health Outcome(s)

- |                          |  |
|--------------------------|--|
| • Cardiovascular disease | • Maternal/ infant health  |
| • Asthma                 | • STI screening/treatment  |
| • Diabetes               | • HIV screening/treatment  |
| • Cancer                 | • Tobacco  |
| • HIV                    | • Diet   |
| • Obesity                | • Physical Activity  |
| • Mental Health          | • Lead poisoning   |
| • Substance Abuse        | • Various areas of focus   |
| • Oral health            | • Areas of focus identified by community health needs assessment |
| • Child development      | • Patients with complex care needs                               |
| • Vaccination            |  |

#### (b) Improved Access to Care

- Improved access to care
- Improved care coordination
- Improved access to wrap around services
- Increased insurance enrollment

#### (c) Decreased Healthcare Utilization

- Avoidable hospitalizations
- ER visits

### III. TARGET POPULATION

#### (a) Age

- Infant
- Pediatric
- Adolescents
- Adult
- Geriatric

#### (b) Gender/Sexual Orientation

- Male
- Female
- Lesbian
- Gay
- Bisexual
- Transgender

#### (c) Race/Ethnicity

- African American
- Latino
- Asian/Pacific Islander
- American Indian/Alaska Native
- Caucasian

#### (d) Vulnerable Populations

- Low income
- Homeless
- Uninsured
- Immigrant/ Foreign Born
- Medically underserved
- Public housing
- Food stamps
- Homebound individuals
- Physically disabled
- Mentally disabled
- Dual eligible

#### (e) Other

- High cost patients
- Population identified by CHNA
- Health plan members
- Hospital admission rate based

### IV. CHW ROLES

#### (a) Working with Individuals and Families

- Addressing basic needs (e.g. childcare, transportation, shelter)
- Engaging family members in care
- Developing patient goals and action plans
- Self-management education
- Promoting treatment adherence
- Coordinating referrals/follow-ups
- Home visiting
- Home assessment
- Supportive counseling
- Supplies for the home (e.g. air filter)
- Implementing care action plans
- Promoting treatment adherence
- Translating and interpreting health information
- Teaching health promotion and prevention behaviors
- Promoting health literacy
- Coaching on problem solving
- Leading support groups
- Insurance enrollment/navigation
- Patient navigation

**(b) Working with Communities**

- Preparation and dissemination of health education materials
- Case-finding and recruitment
- Community strengthening/needs assessment
- Home visiting
- Promoting health literacy
- Advocacy
- Community organizing
- Translation and interpretation of information
- Teaching health promotion and prevention behaviors
- Leading support groups

**(c) Working with Health Systems**

- Insurance enrollment/navigation
- Patient navigation
- Promoting treatment adherence
- Training health care providers
- Health education curriculum
- Referrals/follow-ups
- Relationship building
- Patient advocacy
- Advocating for broader health system change

**V. PRIMARY SITE OF INTERVENTION**

- Hospital
- Other non-hospital clinical setting
- Patient's Home
- Other Community Setting

**VI. CHW HIRING QUALIFICATION (INPUTS)****(a) Education level**

- Masters
- Bachelors
- Associates
- High-School

**(b) Other CHW qualification**

- Language requirement
- Familiarity of the community
- Credentialing/ Certification
- Program-based training
- Peer Status
- None Specified

**VII. CHW TITLES****(a) CHW Titles**

- Community health worker
- Promotor(a) de salud
- Outreach education
- Health advocate
- Health ambassador
- Community health advisor
- Home visitor
- Community health representative
- Outreach worker
- Outreach advocate
- Community-based health navigator
- Youth worker
- Youth health advocate
- Community coordinator
- Family services coordinator
- Parent aide
- Health resilience specialist
- Maternal and infant health advocate
- Non-clinical health worker
- Community health navigator
- Community connector
- Volunteer health liaison
- Community health informant

**VIII. CHW COMPENSATION****(a) CHW Compensation**

- Salaried
- Hourly
- Volunteer

**IX. LEADING/FACILITATING ORGANIZATION/INSTITUTION****(a) Leading/Facilitating Organization/Institution**

- Hospital
- Healthcare provider/clinic
- Healthcare System
- Private Health Plan
- Public insurer (Medicare/Medicaid)
- Medicaid MCO
- City/State health department
- University
- Community-based organization
- Community-based partnership
- Coalition
- Employer-based
- Public-private initiative
- Federal qualified health center (FQHC)

**X. PARTNERSHIPS****(a) Partnerships**

- Schools
- Daycare centers
- Public health department
- Hospital
- Healthcare provider/clinic
- Healthcare system
- Public insurer (Medicare/Medicaid)
- Medicaid MCO
- Other community orgs
- University
- Community-based organization
- Community health centers

**XI. PROGRAM FUNDING SOURCE****(a) Federal Funding**

- REACH (CDC)
- CMMI grant
- CMS PCMH demonstration
- HRSA Home Visiting Grant
- ACA funded initiatives
- CDC funding
- Other federal funding

**(b) Other funding**

- State Funding
- City/Local Funding
- Foundation
- Health Plan
- Hospital/ Medical Center
- Public-Private Initiative

**XII. REIMBURSEMENT TO PROGRAM FOR CHW SERVICES****(a) Reimbursement**

- Medicaid
- Medicaid MCO
- Medicare
- Private Insurer
- No reimbursement

**XIII. EVALUATION****(a) Formal Program Evaluation**

- Longitudinal study
- Dose-Response study
- Randomized control trial
- Retrospective study
- Prospective study'
- Information/other form of data collection

**(b) Study of Cost-Benefit / Return on Investment**

- Cost-benefit analysis
- Return on Investment

**XIV. CHW INTEGRATION STATUS**

- Team Member
- Community Partner
- Informational Resource
- Independent

## APPENDIX G – CHW Program Survey Questions

### Thank you for assisting us in our research!

The U.S. Office of Minority Health (OMH) and the Health Resources and Services Administration (HRSA) have asked the George Washington University Health Workforce Research Center (GWU HWRC) to examine Community Health Worker (CHW) programs and reimbursement models.

Part of this project is to develop a searchable database that represents a range of programs using CHWs, Promotores, or other similar public health workers (see further definition below).

This database will serve as a research tool to help GWU and others identify various "models" of programs that utilize CHWs and to understand similarities and differences between these models. We would like to include your program in our database and would be very grateful if you would fill out the following short questionnaire. Each question asks you to describe the work of CHWs within your program. Please answer as many of the questions as are relevant to your program.

We are collecting responses until April 1, 2015.

If you have any questions about this questionnaire or about our work, please feel free to contact:

Mary-Beth Malcarney  
mbharty@gwu.edu

**\*\*Working definition of Community Health Worker (CHW):** For the purposes of our project, we are interested in the broad range of titles that refer to persons engaged in the delivery of community health-related services. Such titles may include:

Promotor(a) de salud  
Outreach educator  
Health advocate  
Health ambassador  
Community health advisor  
Home visitor  
Community health representative  
Outreach worker  
Outreach advocate  
Community-based health navigator  
Youth worker  
Youth health advocate  
Community coordinator  
Family service coordinator  
Parent aide  
Health resilience specialist  
Maternal and infant health advocate  
Non-clinical health worker  
Community health navigator  
Community health representative  
Community connector  
Volunteer health liaison  
Community health information expert

Throughout the questionnaire, when we use the term "CHW", we are referring to this broader range of titles that refer to persons engaged in the delivery of community health-related services.

## General Program Information

**\* 1. Please provide us with your program name, location and contact information.**

Your Name (Optional):

Program Name:

City/Town:

State:

Contact Email Address (Optional):

Contact Phone Number (Optional):

**2. Please select the term(s) that best describes your program's geographic reach:**

- ☐ National
- ☐ Statewide
- ☐ County
- ☐ Regional
- ☐ City/ Metropolitan Statistical Area
- ☐ Select Neighborhoods

Other (please specify)

**3. Please select the term(s) that best describes your program intervention's setting:**

- ☐ Urban
- ☐ Rural
- ☐ Suburban

Other (please specify)



## Program Target Population

The next three questions ask you to describe the primary populations served by CHWs working in your program.

### 4. Which of the following populations by age do CHWs working in your program serve?

**Check all that apply.**

- ☐ Not Applicable
- ☐ Infant
- ☐ Pediatric
- ☐ Adolescent
- ☐ Adult
- ☐ Geriatric

Other (please specify)

### 5. Which of the following populations by race/ethnicity do CHWs working in your program serve? Check all that apply.

- ☐ Not Applicable
- ☐ African American
- ☐ Latino
- ☐ Asian/Pacific Islander
- ☐ American Indian/Alaskan Native
- ☐ Caucasian

Further describe (optional):

**6. If relevant, please provide additional information about your target population. For example, some programs focus on individuals who are low-income, homeless, disabled or otherwise vulnerable/medically underserved. Other programs might focus on a specific sexual orientation or gender identity. Still others may serve individuals enrolled in a specific health insurance plan or people who live in a community served by a specific healthcare provider (hospital, community health center). Many programs target some combination of these populations.**

## Target Health Outcomes

The next series of questions asks you to indicate the health outcome(s) targeted by your program's intervention.

**7. Which of the following health issues do CHWs in your program work on? Check all that apply.**

- ☐ Not Applicable
- ☐ Cardiovascular disease
- ☐ Asthma
- ☐ Diabetes
- ☐ Cancer
- ☐ HIV
- ☐ Obesity
- ☐ Mental Health
- ☐ Substance Abuse
- ☐ Oral health
- ☐ Child development
- ☐ Vaccination
- ☐ Maternal/infant health
- ☐ STI screening/treatment
- ☐ HIV screening/treatment
- ☐ Tobacco
- ☐ Diet
- ☐ Physical Activity

Other (please describe)

**8. If relevant, please use this space to tell us other specifics about your target health outcome. For example, you might further clarify that CHWs in your program have a goal of decreasing hospitalizations/ER visits for patients with asthma.**

### Roles/Tasks/Functions of CHWs

This series of questions asks you to indicate the types of tasks and functions that CHWs in your program are engaged in on a day-to-day basis.

As a reminder, throughout the questionnaire, when we use the term "CHW", we are referring to a broad array of community-based workers, including Promotores and other similar public health workers.

**\*9. Do CHWs in your program work directly with individuals and families (e.g. conducting case management, care coordination, home-based support, health coaching etc.)?**

☐ Yes

☐ No

## Roles/Tasks/Functions of CHWs -- Working with Individuals and Families

**10. You indicated that CHWs in your program work directly with individuals and families. Please select the types of tasks/roles that CHWs in your program conduct when working with directly with individuals and families. Mark all that apply.**

- ☐ Addressing basic needs (e.g. childcare, transportation, shelter)
- ☐ Engaging family members in care
- ☐ Developing/Implementing patient goals and action plans
- ☐ Self-management education
- ☐ Promoting treatment adherence
- ☐ Coordinating referrals/follow-ups
- ☐ Home visiting
- ☐ Home assessment
- ☐ Supportive counseling
- ☐ Supplies for the home (e.g. air filter)
- ☐ Translating and interpreting health information
- ☐ Teaching health promotion and prevention behaviors
- ☐ Promoting health literacy
- ☐ Coaching on problem solving
- ☐ Leading support groups
- ☐ Insurance enrollment
- ☐ Patient navigation

Other (please specify)

**CHW Roles/Tasks/Functions -- Working with Communities**

**\* 11. Do CHWs in your program work with communities (e.g. as a community-cultural liaison, doing outreach and community mobilization activities, health promotion within community at-large)?**

☐ Yes

☐ No

### CHW Roles/Tasks/Functions -- Working with Communities

**12. You indicated that CHWs in your program work with communities. Please select the types of tasks/roles that CHWs in your program conduct when working with communities. Mark all that apply.**

- ☐ Preparation and dissemination of health education materials
- ☐ Case-finding and recruitment
- ☐ Community strengthening/needs assessment
- ☐ Home visiting
- ☐ Promoting health literacy
- ☐ Advocacy
- ☐ Community organizing
- ☐ Translation and Interpretation of Information
- ☐ Teaching health promotion and prevention behaviors
- ☐ Leading support groups

Other (please specify)

**CHW Roles/Tasks/Functions -- Working with Health Systems**

**\* 13. Do CHWs in your program work with health systems (e.g. conducting insurance enrollment, training health care providers, etc.)?**

☐ Yes

☐ No

### CHW Roles/Tasks/Functions -- Working with Health Systems

**14. You indicated that CHWs in your program work with health systems. Please select the types of tasks/roles that CHWs in your program conduct when working with health systems. Mark all that apply.**

- ☐ Insurance enrollment/navigation
- ☐ Patient navigation
- ☐ Promoting treatment adherence
- ☐ Training health care providers
- ☐ Health education curriculum
- ☐ Referrals/follow-ups
- ☐ Relationship building
- ☐ Patient advocacy
- ☐ Advocating for broader health system change

Other (please specify)

---



## CHW Roles/Tasks/Functions

**15. Please use this space to provide any other relevant details about the tasks/roles/functions of CHWs working in your program.**

**16. Please indicate the various settings where CHWs working in your program deliver services. Select all that apply.**

- ☐ Hospital
- ☐ Community health center
- ☐ Public health clinic
- ☐ Primary care setting
- ☐ Acute care setting
- ☐ Long-term care setting
- ☐ School
- ☐ Patient's home
- ☐ Worksite
- ☐ Faith-based organization
- ☐ Community events
- ☐ Community-based education/resource center

Other (please specify)

**CHW Hiring Qualifications, Compensation & Reimbursement**

The next few questions ask you to describe hiring qualifications, compensation and reimbursement for CHWs in your program.

**17. Please indicate the qualifications CHWs are required to have to be hired by your program. Mark all that apply.**

- ☐ Not Applicable
- ☐ Educational level (e.g. masters, GED)
- ☐ Program-based training
- ☐ Language requirement
- ☐ Familiarity with the community served
- ☐ Credentialing/Certification

Other (please specify)

**18. If relevant, please further describe hiring qualifications. For example, if you selected "program-based training" please describe the nature of that training.**

**19. Please select the titles used by your program to refer to CHWs. Select all that apply.**

- ☐ Community health worker
- ☐ Promotor(a) de salud
- ☐ Outreach educator
- ☐ Health advocate
- ☐ Health ambassador
- ☐ Community health advisor
- ☐ Home visitor
- ☐ Community health representative
- ☐ Outreach worker
- ☐ Outreach advocate
- ☐ Community-based health navigator
- ☐ Youth worker
- ☐ Youth health advocate
- ☐ Community coordinator
- ☐ Family service coordinator
- ☐ Parent aide
- ☐ Health resilience specialist
- ☐ Maternal and Infant health advocate
- ☐ Non-clinical health worker
- ☐ Community health navigator
- ☐ Community health representative
- ☐ Community connector
- ☐ Volunteer health liaison
- ☐ Community health information expert

Other (please specify)

---

**CHW Hiring Qualifications, Compensation & Reimbursement**

**20. Does your state currently have a process in place for CHW certification or credentialing?**

- ☐ Yes
- ☐ No
- ☐ No, but my state is currently developing such a process

**21. Please indicate how your program compensates CHWs. Mark all that apply.**

- ☐ Salaried employee
- ☐ Hourly employee
- ☐ Volunteer

Other (please specify)

**22. Approximately how many CHWs does your program employ or engage as volunteers?**

**23. What is the average compensation for CHWs in your program?**

**24. Please list the source(s) of funding for your program**

**25. Does your program receive reimbursement from public or private health insurers for the services CHWs provide?**

- ☐ Yes
- ☐ No

**26. If you answered "yes" to the previous question, please indicate the source of reimbursement (e.g. Medicaid, private insurer)**

## Program Leadership, Partnerships & Evaluation

**27. Please select the best description of the organization/institution that is leading or facilitating your program. Check all that apply.**

- ☐ Hospital
- ☐ Healthcare provider/clinic
- ☐ Healthcare System
- ☐ Private Health Plan
- ☐ Public Insurer (Medicare/Medicaid)
- ☐ Medicaid MCO
- ☐ City/State health department
- ☐ University
- ☐ Community-based organization
- ☐ Community-based partnership
- ☐ Coalition
- ☐ Employer-based
- ☐ Public-private initiative
- ☐ Federally-Qualified Health Center (FQHC)

Other (please specify)

**28. Please indicate any entities with which your organization partners to facilitate your program. Check all that apply.**

- ☐ Not Applicable
- ☐ Schools
- ☐ Daycare centers
- ☐ Public health department
- ☐ Hospital
- ☐ Healthcare provider/clinic
- ☐ Healthcare System
- ☐ Public Insurer (Medicare/Medicaid)
- ☐ Medicaid MCO
- ☐ University
- ☐ Community-based organization

Other (please specify)

---

**29. If your program is undergoing an evaluation, please indicate the type of evaluation ongoing or planned.**

- ☐ Not Applicable
- ☐ Longitudinal study
- ☐ Dose-Response study
- ☐ Randomized control trial
- ☐ Retrospective study
- ☐ Prospective study
- ☐ Cost-benefit analysis
- ☐ Analysis of return on Investment

Other (please specify)

---

### Additional Information

**30. Please use this space to provide any additional information about your program that might be useful for our database (e.g. additional relevant information that has not already been covered, and links to websites, studies and other publications)**

**31. We are trying to build a comprehensive database of programs that use CHWs. Please list other innovative programs using CHWs that we should include in our database.**



## Thank you!

Thank you for taking the time to complete our questionnaire. The information you have provided will greatly assist us in populating our database and conducting research on the broad range of programs and interventions that utilize CHWs today.

If you have any questions about our research, please contact:  
Mary-Beth Malcarney: [mbharty@gwu.edu](mailto:mbharty@gwu.edu)

For more information about the GW Health Workforce Research Center, please visit our website:  
<http://publichealth.gwu.edu/projects/gw-health-workforce-research-center>

## APPENDIX H – Presentation: OMH/HRSA Community Health Worker Project Memphis, TN (July 2015)

# OMH/HRSA Community Health Worker Project

*Leo Quigley*  
*Health Workforce Research Center*  
*The George Washington University Milken Institute*  
*School of Public Health*

THE GEORGE  
WASHINGTON  
UNIVERSITY  
WASHINGTON, DC

School of Public Health  
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Department of Health Policy

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### Goals of this Presentation

- Describe the present GW research project
- Share some of the tentative findings to date
- Outline the expected products of the project
- Receive any feedback and thoughts from the audience

## Project Overview

Sponsors: Office of Minority Health and HRSA

Primary Purpose: to help advance the CHW as a viable career, in the context of a transformed health care system that provides high quality and affordable health care to low-income minority populations

- *GW HWRC will synthesize the ‘state of art’ with regard to CHW policies, CHW programs, and CHWs’ current roles, proven effectiveness, and resulting core competencies*
- *Particular focus on health system integration*

Timeline: October 2014-August 2015

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WASHINGTON, DC

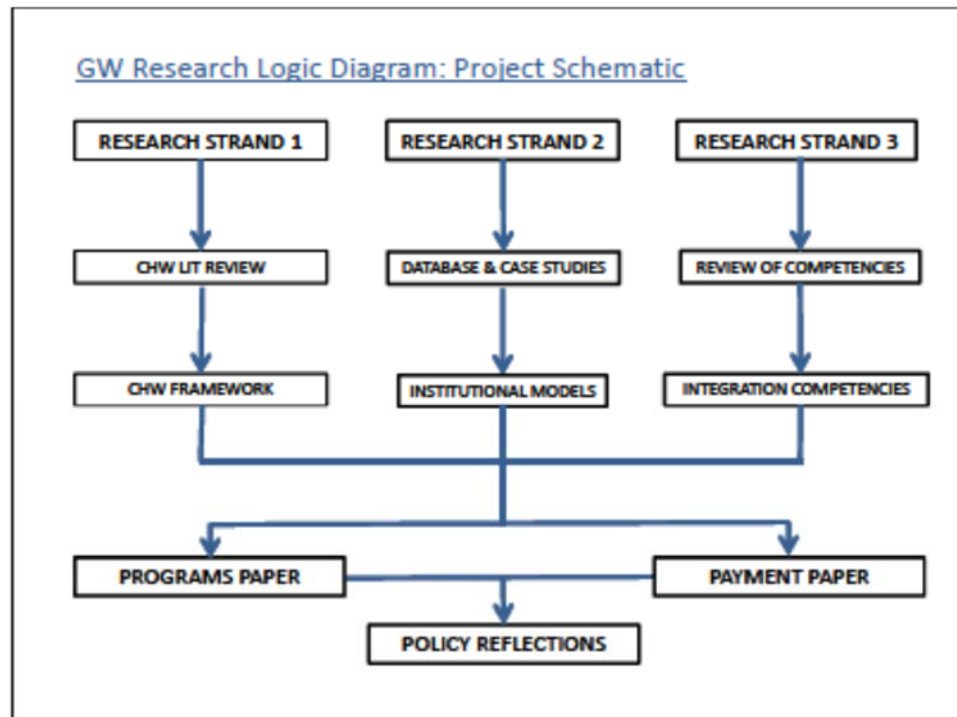
## Project components

1. Literature review
  - Conceptual framework and research trends
2. Database
  - Institutional models and case studies
3. Competencies review
  - Competencies for health system integration

### Planned Products

- Programs paper
- Payment paper
- Policy reflections

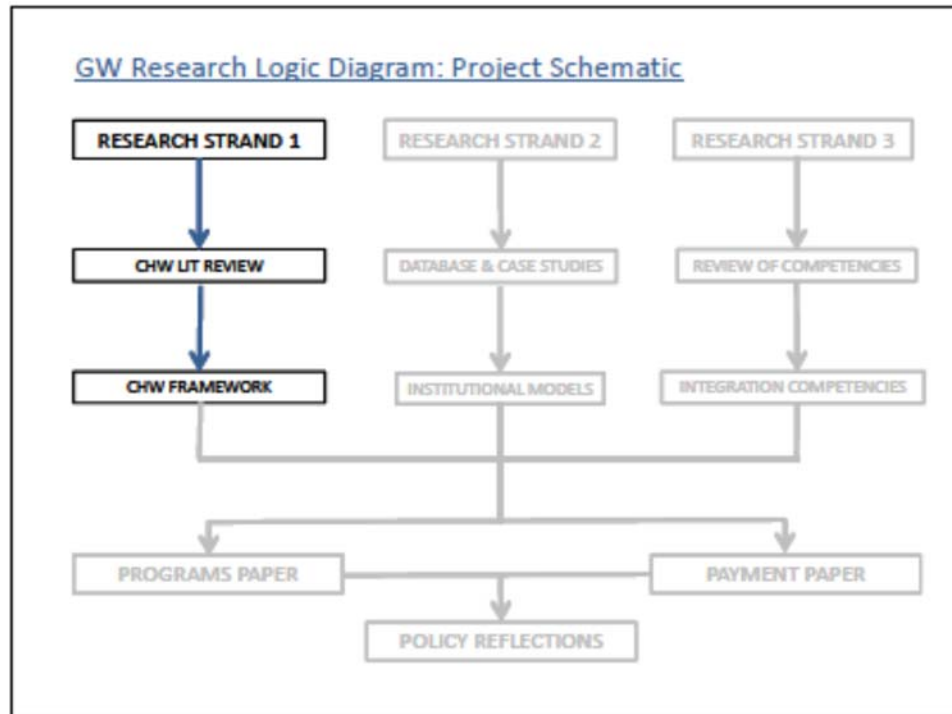
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## Introductory Point

### **Recurring Themes of an Emerging CHW Occupation**

1. **Variation:** programs differ enormously and in many, many ways
2. **Internal consensus:** eventually, the members of an emerging occupation have to decide what they are about, and who is a member and who isn't
3. **External legitimacy:** it's not enough to convince the members of the occupation of its value – to have any standing as an occupation you also have to convince people who aren't members



## Research Strand 1 Literature Update

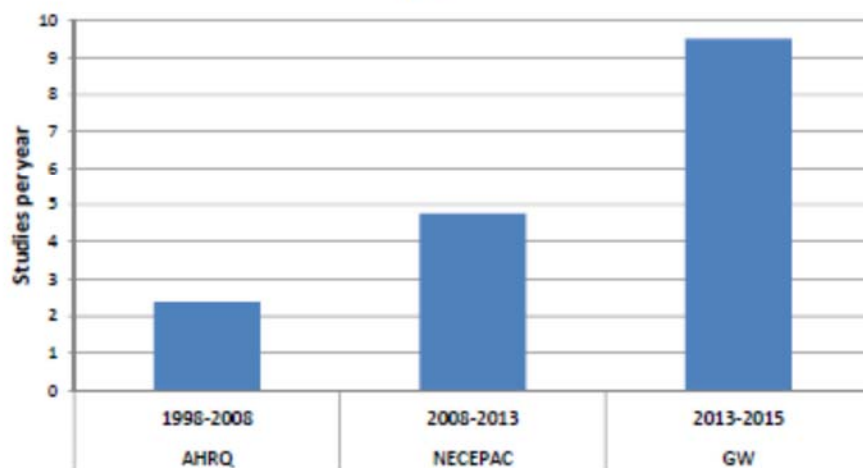
Annotated Bibliography  
Research Trends

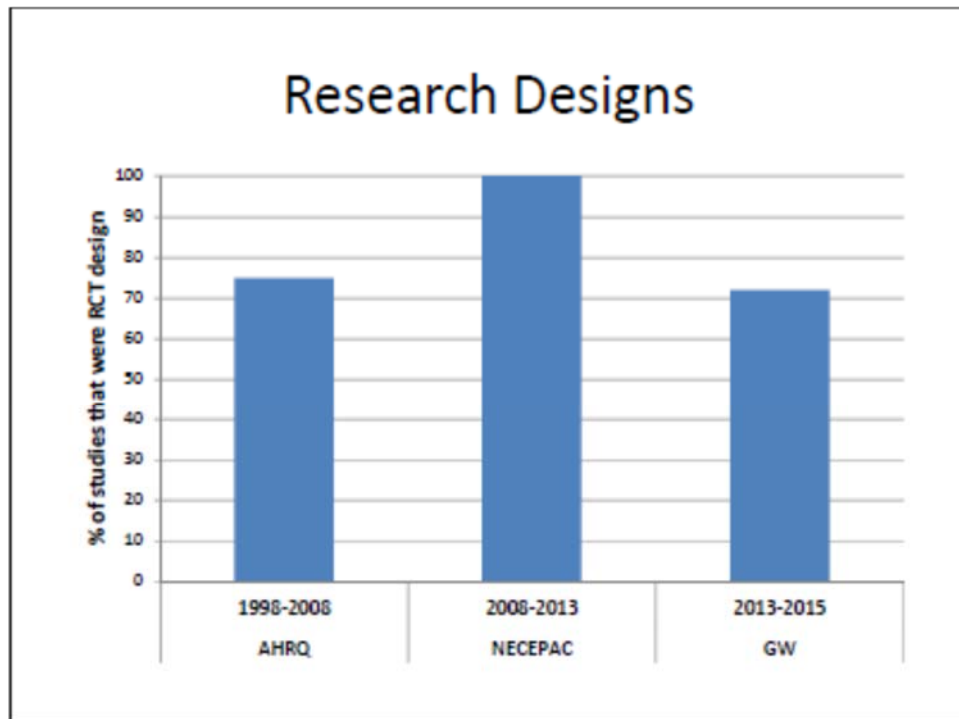
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## Literature Update

- Agency for Health Research & Quality (AHRQ) found 69 CHW studies that met quality standards, 1980 - 2008
- New England Comparative Effectiveness Public Advisory Council (NECEPAC) added 21 more studies, using the same search and quality criteria, 2008-13
- GW has added 19 more studies, 2013-15, and created a summary table of all 109 studies (annotated literature review)
- We can provide a listing on request (email address at the end of this presentation)
- 1<sup>st</sup> observation: the rate of publication is increasing!

### Rates of study publication





### Research Designs

- Dominated by Randomized Controlled Trials (RCTs), whose strength is demonstrating causal relationships
- Yet literature suggests that RCTs are not a good design for evaluating complex social interventions or population-level impact<sup>1</sup>
- Critique is that RCTs take too long, inhibit programs from evolving, are expensive, and are hard to replicate
- Calls for more “practice-based” evidence, but is there any funding for new approaches to evidence?

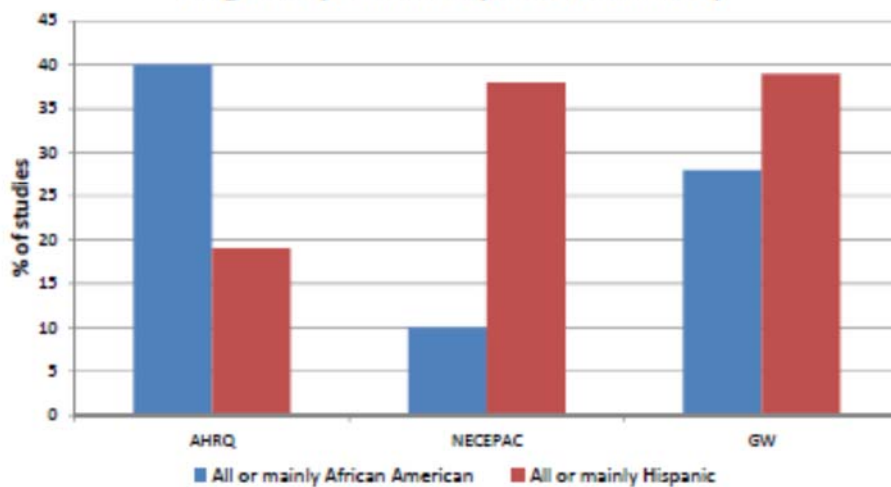
1. Smyth & Schorr (2009), A Call to Rethink what Constitutes “Evidence” in Finding Social Interventions that Work; Sansom-Fisher (2007), Limitations of the Randomized Controlled Trial in Evaluating Population-Based Health Intervention

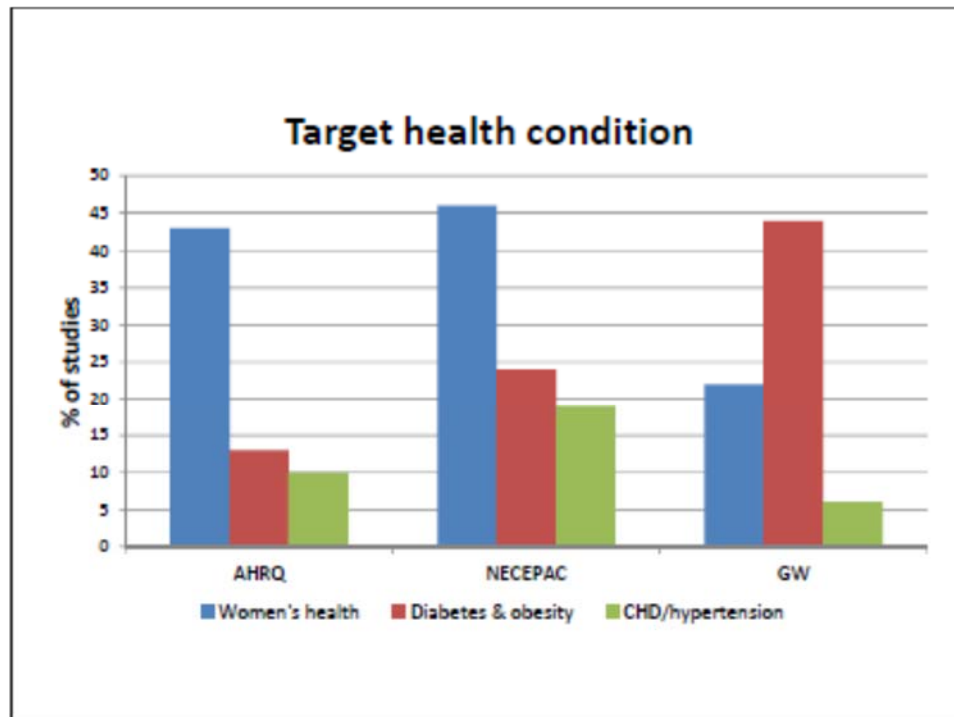


## Target Populations and Conditions

- Racial/ethnic population: large increase in number of studies working with Latino/a populations
- Increased interest in diabetes and obesity
- Possible decrease in focus on women and children's health, but compensated for by increasing study numbers

**Target Population by Race/Ethnicity**





## Reflections

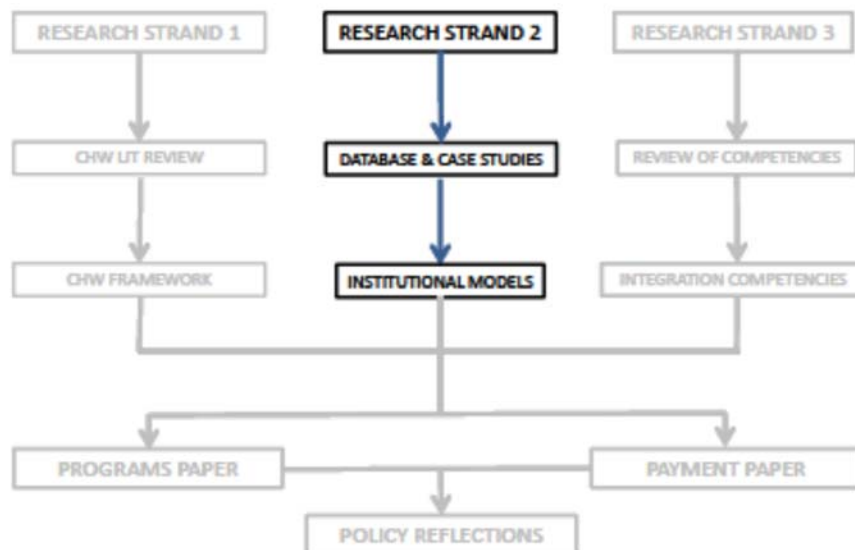
- With the exception of the focus on RCTs, all these trends may reflect a shift in funder's interest towards greater use of CHWs in reducing health costs related to chronic disease
- Cautionary note: the numbers of studies are statistically small, and published studies can't be considered a representative sample of CHW programs

## Research Strand 1 Products

- Annotated bibliography: Tabular summary of all 109 studies, 1980-2015
- Full bibliography of all 109 studies
- Methodology and summary paper showing research trends

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### GW Research Logic Diagram: Project Schematic



## Research Strand 2: Institutional Models

- The GW Database
- Case Studies



## DATABASE OF CHW PROGRAMS

*Programs coded by the following variables:*

- *Location/geography*
- *Target health outcomes*
- *Target population*
- *CHW roles/tasks*
- *CHW hiring qualifications*
- *Type of CHW compensation*
- *Type of organization/institution leading CHW program*
- *Program funding source*
- *Type of reimbursement to program for CHW services*
- *Program evaluation*

## Three Core Questions for Programs Choosing to Integrate CHWs

1. What problem(s) was the health system/organization trying to solve by introducing a CHW workforce?
2. Why did the health system/organization choose CHWs to address those problems?
3. What particular institutional/organizational arrangement did the health delivery system adopt for incorporating the CHWs into their delivery model?

From this information, we wanted to:

- draw out alternative institutional ‘models’ for CHWs integrated into health delivery
- describe case studies that illustrate the different models, and
- use this work to describe the workforce implications of integrating CHWs into the health delivery system.

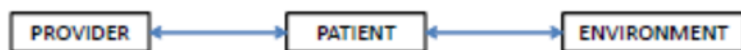
Q1. If the CHW is the solution,  
what was the problem?



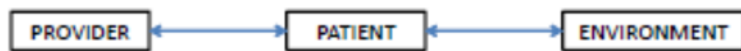
THE 'TRADITIONAL' MODEL OF HEALTH CARE DELIVERY



BUT THEN WE HAVE THE PROBLEM OF THE ENVIRONMENT

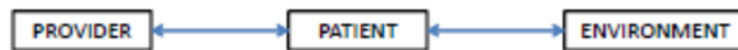


WHICH IS DOING EVERYTHING IT CAN TO MAKE THE PATIENT SICK AGAIN!

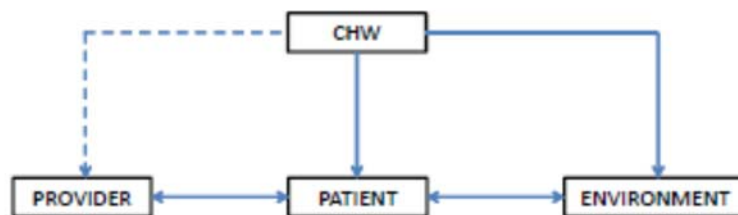


AND TO STOP THE PATIENT DOING WHAT THEY NEED TO DO TO STAY WELL

Q2. What makes the CHW the answer to this problem?



Q2. What makes the CHW the answer to this problem?



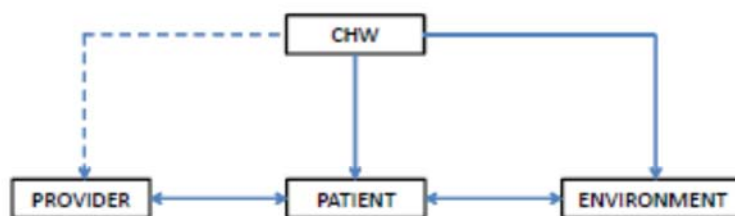
... THE COMMUNITY HEALTH WORKER WORKS WITH  
THE PATIENT IN THEIR ENVIRONMENT!



## Modes of Impact that take environment into account

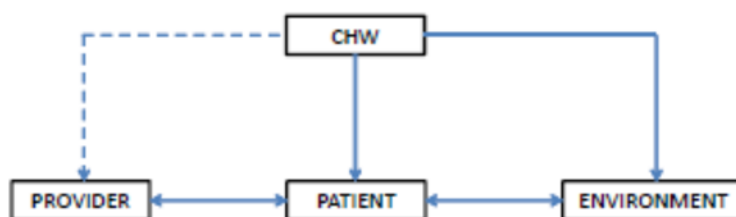
MODES OF PROGRAM IMPACT (WHAT'S THE PROGRAM DOING THAT'S DIFFERENT?)			
Mode of impact	Target of task		
	Patient & family	Patient & provider	Community
Outreach	Identifying excluded individuals	Identifying providers who can address unmet needs	Community engagement including public health outreach
Trust-building	Building patient/client trust in worker	Building trust between patient and provider; building provider trust in CHW	Building community-level credibility and trust towards self and health providers
Empowerment	Capacity building	Strengthening patient role in provider-patient relationship	Community capacity-building
Social determinants	Assessing individual-environment interactions impacting person's health	Engaging provider in upstream thinking	Identifying community-level barriers and potential solutions

## So why aren't CHWs everywhere?



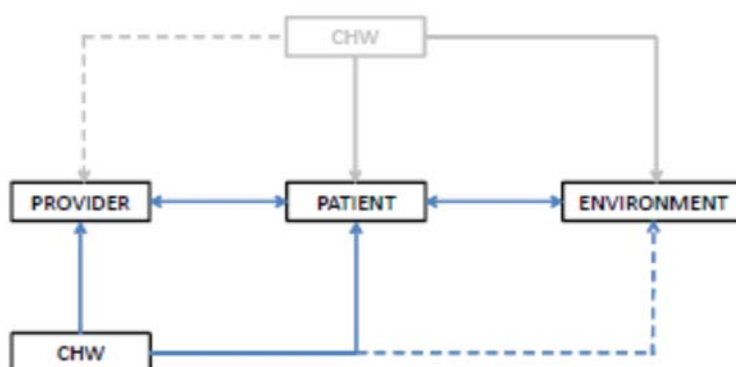
... NOBODY WANTS TO PAY THE CHW TO DO THIS WORK!

One solution to the payment problem is ...



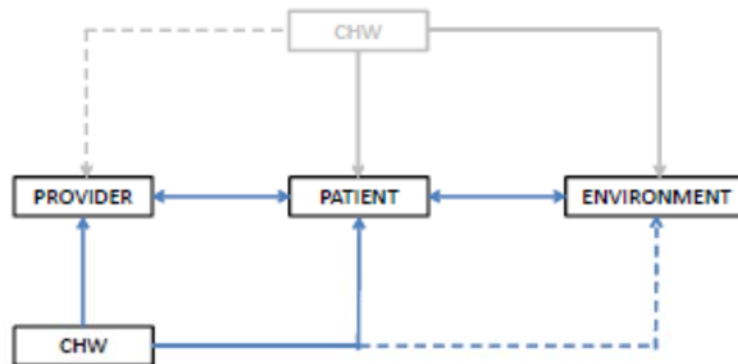
... INTEGRATION WITH THE HEALTH SYSTEM!

One solution to the payment problem is ...



... INTEGRATION WITH THE HEALTH SYSTEM!

## So health system integration implies a different model for organizing CHWs



... BUT WE WANT TO UNDERSTAND THE IMPLICATIONS OF THIS

## Is there only one way of integrating?

- We think there are big differences between programs which a simple division into integrated and non-integrated programs will not capture.
- We are particularly concerned about whether integration will undermine the special strengths of the CHW to do things differently from standard health delivery system practices.
- Can we drill down further and tease out more information about implementation models to better describe the programs in our database?
- We wanted to do this in a way would help us better describe the workforce implications of integrating CHWs into health care.
- We looked at both structural and relational factors in integration.

### Q3. What institutional arrangements are being used?

#### Structural and Relational Factors in Describing Institutions

- From our database we have extracted 4 case studies which, based on **structural factors**, seem to describe significantly different institutional models for integrating the CHW with health delivery.
- These case studies/models are:
  - IMPaCT / Penn Center for Community Health Workers
  - Wake Forest Baptist Medical Center - Supporters of Health
  - Boston Children's Hospital: The Community Asthma Initiative
  - The Women-Inspired Neighborhood (WIN) Network
- They range from strongly integrated with the health delivery system to not integrated
- We describe how **relational factors** contribute to preservation of the CHW concept in integrated models

### 1. Structural factors in integration

- Funding source
- Employer/ownership of CHWs
- Primary intervention site
- CHW hiring criteria

## Classification of Structural Factors in Relation to Integration

Factor	Options	
	Health System Focus	Community Focus
Employer/ownership	Health provider	Community-based organization
Funding source	Health provider	Other
Intervention site	Clinical setting	Community or home
Hiring criteria	Educational qualifications or prerequisites	Community membership and experience

## Structural Factors, Four Case Studies

### 1: Penn Center for Community Health Workers (IMPACT )

Factor	Options	
	Health	Community
Employer/ownership	Health system	
Funding source	Health system	
Intervention site	Clinic Hospital	
Hiring criteria	Educational level (High school/GED preferred)	Community membership

## Structural Factors, Four Case Studies

### 2: Wake Forest Baptist Medical Center - Supporters of Health

Factor	Options	
	Health	Community
Employer/ownership	Health system	
Funding source	Health system (partial)	Foundation funding (partial)
Intervention site		Community Setting
Hiring criteria		Community membership

## Structural Factors, Four Case Studies

### 3: Boston Children's Hospital: The Community Asthma Initiative

Factor	Options	
	Health	Community
Employer/ownership		Community Organization
Funding source	Health system	
Intervention site		Patient home
Hiring criteria		Community membership and language skills

## Structural Factors, Case Studies

### 4: The Women-Inspired Neighborhood (WIN) Network

Factor	Options	
	Health	Community
Employer/ownership		Community Organization
Funding source		Foundation
Intervention site		Patient home and other community settings
Hiring criteria	Educational prerequisite (high school/GED)	Community membership

**Model 1: Strong integration, but with CHW community membership important (IMH/CT)**

Factor	Alternative arrangements	
Employer/ownership	Health provider	
Funding source	Health provider	
Intervention site	Clinical setting	
Hiring criteria		Community membership and experience

**Model 2: Moderate integration (Wake Forest)**

Factor	Alternative arrangements	
Employer/ownership	Health provider	
Funding source		Shared funding
Intervention site		Community or home
Hiring criteria		Community membership and experience

**Model 3: Moderate integration (Boston Children's Hospital Asthma Initiative)**

Factor	Alternative arrangements	
Employer/ownership		Community-based organization
Funding source	Health provider	
Intervention site		Community or home
Hiring criteria		Community membership and experience

**Model 4: WIN (not integrated)**

Factor	Alternative arrangements	
Employer/ownership		Community-based organization
Funding source		Other
Intervention site		Community or home
Hiring criteria	Educational prerequisite	Community membership and experience



## STRUCTURAL FACTORS - SUMMARY

Funding source	Employer/ Ownership	Primary Site of Intervention	Hiring Criteria
<ul style="list-style-type: none"> <li>• Health system</li> <li>• Foundation</li> <li>• State/local Health/ social agency</li> <li>• Federal Health/ social agency</li> <li>• Health Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Health System</li> <li>• External Community Organization</li> <li>• Other Nonprofit Entity (University, foundation, coalition etc.)</li> <li>• Health/ social agency</li> </ul>	<ul style="list-style-type: none"> <li>• Clinic</li> <li>• Hospital</li> <li>• Patient Home</li> <li>• Other Community Setting</li> </ul>	<ul style="list-style-type: none"> <li>• Educational level</li> <li>• Community membership</li> <li>• Training</li> <li>• Language skills</li> <li>• Peer status</li> </ul>

## 2. Relational factors in integration

- CHW status with regard to other provider staff
- Directionality of patient information flow
- Directionality of flow of expertise
- Degree of CHW critical thinking and autonomy



Classification of Relational Factors in Relation to Integration			
Factor	Options		
	Co-equal	Mixed	Separate
CHW Status relative to other provider staff	Team member	Formal links with team	Not linked
Directionality of patient information	Bidirectional	Unidirectional	No information flow
Directionality of expertise	Bidirectional	Unidirectional	No flow of expertise
Level of CHW autonomy & critical thinking	Not yet classified – indicators only		

# Relational Factors, Four Case Studies

1: Penn Center for Community Health Workers (IMPACT )

Factor	Options		
	Co-equal	Mixed	Separate
CHW status relative to other provider staff	Team member		
Directionality of patient information	Bidirectional		
Directionality of expertise	Bidirectional		
Level of CHW autonomy & critical thinking	Not yet classified – indicators only		

**Case Study 1: IMPaCT / Penn Center for Community Health Workers**  
(Enabling mechanisms and autonomy indicators)

RELATIONAL FACTORS			
CHW status w/ regard to other providers:	Directionality of Patient Information	Directionality of Expertise	Level of CHW Autonomy
<ul style="list-style-type: none"> <li>Team Member</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Attending clinical rounds</li> <li>Supervision by another team member</li> <li>Participation in appointments and calls between providers and patients</li> <li>Strategize with health team about patient's care</li> </ul>	<ul style="list-style-type: none"> <li>Bidirectional</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Established methods for communicating with providers</li> <li>Daily rounds with providers</li> </ul>	<ul style="list-style-type: none"> <li>Bidirectional</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Strategizing with health team about patient's care</li> </ul>	<p><i>Indicators</i></p> <ul style="list-style-type: none"> <li>Help patient understand provider instructions</li> <li>Appointment scheduling</li> <li>Referrals to other community agencies</li> <li>Strategize with health team about patient's care</li> <li>Address psychosocial needs of patient</li> </ul>

## Relational Factors, Four Case Studies

### 2: Wake Forest Baptist Medical Center - Supporters of Health

Factor	Options		
	Co-equal	Mixed	Separate
CHW status relative to other provider staff	Team member		
Directionality of patient information	Bidirectional		
Directionality of expertise	Bidirectional		
Level of CHW autonomy & critical thinking	Not yet classified – indicators only		

**Case Study 2: Wake Forest Baptist Medical Center - Supporters of Health  
(Enabling mechanisms and autonomy indicators)**

RELATIONAL FACTORS			
CHW status w/ regard to other providers:	Directionality of Patient Information	Directionality of Expertise	Level of CHW Autonomy
<ul style="list-style-type: none"> <li>Team Member</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Attending team meetings/rounds</li> <li>Common administration</li> <li>Supervision by another team member</li> <li>Serve as educational resource to providers</li> </ul>	<ul style="list-style-type: none"> <li>Bidirectional</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Established methods for communicating with providers</li> <li>Daily rounds with providers</li> </ul>	<ul style="list-style-type: none"> <li>Bidirectional</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Educate clinical providers on general patient needs</li> <li>Relationship building between provider and patient</li> </ul>	<p><i>Indicators</i></p> <ul style="list-style-type: none"> <li>Seeking out new resources</li> <li>CHW conducts patient needs assessment</li> <li>Referrals to specialists</li> <li>Referrals to other community agencies</li> <li>Insurance enrollment</li> </ul>

## Relational Factors, Four Case Studies

### 3: Boston Children's Hospital: The Community Asthma Initiative

Factor	Options		
	Co-equal	Mixed	Separate
CHW status relative to other provider staff		Community partner	
Directionality of patient information		Provider to CHW	
Directionality of expertise		Provider to CHW	
Level of CHW autonomy & critical thinking	Not yet classified – indicators only		

**Case Study 3: Boston Children’s Hospital: The Community Asthma Initiative**  
(Enabling mechanisms and autonomy indicators)

RELATIONAL FACTORS			
CHW status w/ regard to other providers:	Directionality of Patient Information	Directionality of Expertise	Level of CHW Autonomy
<ul style="list-style-type: none"> <li>Community Partner</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Interventions coordinated with health system provider</li> </ul>	<ul style="list-style-type: none"> <li>Provider to CHW</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Established methods for communicating with providers</li> </ul>	<ul style="list-style-type: none"> <li>Provider to CHW</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Work supervised by licensed practitioner</li> </ul>	<p><i>Indicators</i></p> <ul style="list-style-type: none"> <li>Work supervised</li> <li>Other health practitioners determine patient needs</li> </ul>

## Relational Factors, Case Studies

### 4: The Women-Inspired Neighborhood (WIN) Network

Factor	Options		
	Co-equal	Mixed	Separate
CHW status relative to other provider staff		Informational resource	
Directionality of patient information			No patient information flow
Directionality of expertise		CHW to provider	
Level of CHW autonomy & critical thinking	Not yet classified – indicators only		

**Case Study 4: The Women-Inspired Neighborhood (WIN) Network**  
(Enabling mechanisms and autonomy indicators)

RELATIONAL FACTORS			
CHW status w/ regard to other providers:	Directionality of Patient Information	Directionality of Expertise	Level of CHW Autonomy
<ul style="list-style-type: none"> <li>Informational Resource</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>CHWs serve as educational resource to healthcare providers</li> </ul>	<ul style="list-style-type: none"> <li>No information flow between CHW and providers</li> </ul>	<ul style="list-style-type: none"> <li>CHW to Provider</li> </ul> <p><i>Enabling Mechanisms</i></p> <ul style="list-style-type: none"> <li>Training healthcare professionals</li> <li>Relationship building between provider and patient</li> </ul>	<p><i>Indicators</i></p> <ul style="list-style-type: none"> <li>Referrals to specialists</li> <li>Referrals to other community agencies</li> <li>Responding to sudden/shifting patient needs</li> </ul>

## Summary of Relational Factors

CHW status w/ regard to other providers:	Directionality of Patient Information	Directionality of Expertise	Level of CHW Autonomy
<ul style="list-style-type: none"> <li>Team Member</li> <li>Community Partner</li> <li>Informational Resource</li> <li>Independent</li> </ul>	<ul style="list-style-type: none"> <li>Provider to CHW</li> <li>CHW to Provider</li> <li>Bidirectional</li> <li>No information flow between CHW and providers</li> </ul>	<ul style="list-style-type: none"> <li>Provider to CHW</li> <li>CHW to Provider</li> <li>Bidirectional</li> <li>No flow of expertise between CHW and providers</li> </ul>	<p>Indicators of Autonomy</p>



RELATIONAL ENABLING MECHANISMS - SUMMARY			
CHW status w/ regard to other providers:	Directionality of Patient Information	Directionality of Expertise	Level of CHW Autonomy
<b>Enabling Mechanisms</b> <ul style="list-style-type: none"> <li>• Attending team meetings</li> <li>• Attend clinical rounds</li> <li>• Common administration</li> <li>• Supervision by another team member</li> <li>• CHWs serve as educational resource to healthcare providers</li> <li>• Participation in appointments and calls between providers and patients</li> <li>• Strategize with health team about patient's care</li> <li>• Project goal to increase access to CHWs through team-based care</li> <li>• Discuss patient care and needs with other providers</li> <li>• Shared patient database</li> </ul>	<b>Enabling Mechanisms</b> <ul style="list-style-type: none"> <li>• Established criteria for communicating with providers</li> <li>• Entering data in EMR</li> <li>• Communication between CHWs and providers about patients</li> <li>• Daily rounds with providers</li> <li>• Shared patient database</li> </ul>	<b>Enabling Mechanisms</b> <ul style="list-style-type: none"> <li>• Training healthcare professionals</li> <li>• Relationship building between provider and patient</li> <li>• Educate clinical providers on general patient needs</li> <li>• Communication between CHWs and providers about patients</li> <li>• Strategizing with health team about patient's care</li> <li>• Work supervised by licensed practitioner</li> </ul>	<b>Indicators of Autonomy</b> <ul style="list-style-type: none"> <li>• Seeking out new resources</li> <li>• Referrals to specialists</li> <li>• Referrals to other Community agencies</li> <li>• Responding to sudden/shifting patient needs</li> <li>• Subordinate to licensed practitioner</li> <li>• Structured curriculum delivered to community</li> <li>• Work supervised</li> <li>• Other health practitioners determine patient needs</li> <li>• Help patient understand provider instructions</li> <li>• Appointment scheduling</li> <li>• Address psychosocial needs of patient</li> <li>• Strategize with health team about patient's care</li> <li>• Tailored education to patients</li> <li>• Advocating for patient needs</li> <li>• Insurance enrollment</li> <li>• One-on-one counseling</li> </ul>

## Concluding Thoughts from Our Institutional Models

CHWs, as an emerging occupation, must establish two things:  
internal consensus and external legitimacy.

Consensus-building is for CHWs themselves to figure out.

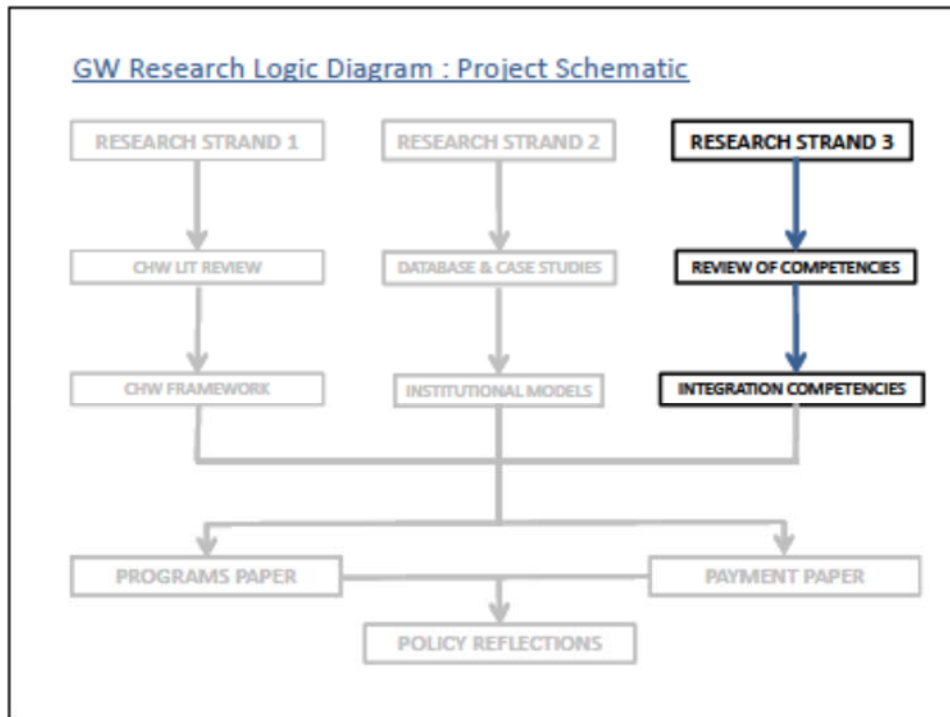
Legitimacy is not, yet it's especially critical in integrated models, where CHWs work alongside established professionals with fixed ideas.

One way to look at legitimacy in integrated models is that:

- Structural factors constrain the full adoption of the CHW concept
- Relational factors facilitate the full adoption of the CHW concept

So there is a tug of war going on ....

Parting thought: in a well-planned program the facilitating factors need to outweigh the constraining factors – otherwise what is the benefit of using community health workers?



## Research Strand 3 Competencies Review

Competencies arising from health  
system integration  
Description, not consensus-building

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## What are the implications of the case studies for CHW competencies?

- In an integrated model there is a need to establish a strong CHW 'identity' to maintain credibility in a role which is different to any of the traditional health professions
- CHW competencies largely evolved to address the requirements of CHWs in community-based organizations
- In integrated delivery – with patient information flowing, and expertise being shared between CHWs and providers – CHW competencies should also address what is needed to be effective in integrated settings

## Rethinking Competencies?

Examples of what may be new, or where a subtle change of emphasis in competencies may be needed, include:

- Ability to speak the provider's language, operate in the provider's environment, and meet the provider's standards, e.g. handling confidential health data
- Ethical conduct
- Ability to combine advocacy for the patient with empathy for the provider (high level negotiating, diplomacy and conflict resolution skills?)
- Leadership skills – in the health setting as a representative of the community, and in the community as a representative of the provider
- Singlemindedness - based on an understanding of the rationale behind the CHW contribution

There may also be a need for a support structure for the CHW identity – for example having a CHW as supervisor, or having a supervisor who is sensitized to the tendency of a health delivery organization to shape everything to the needs of the health system instead of the other way round

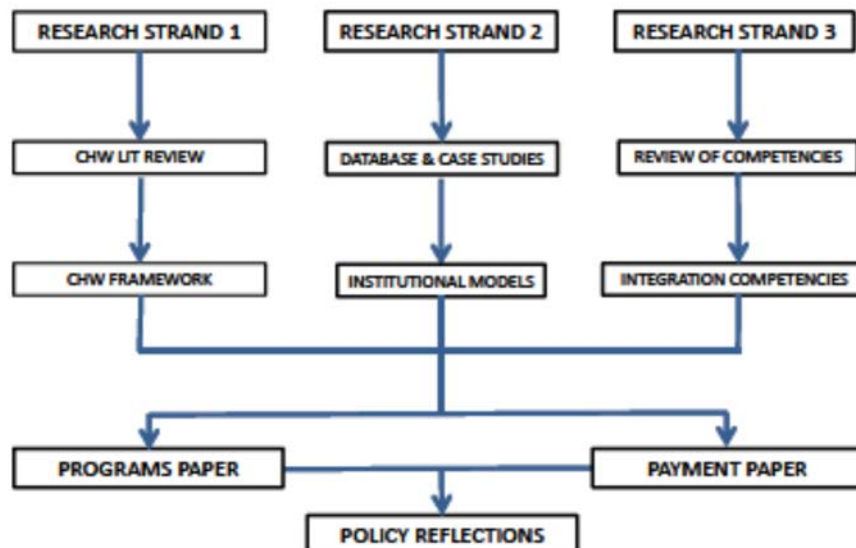


## Further work

- Nature of CHW interventions
- More work on how the structural and relational factors in integration models drive competency requirements
- Programs paper
- Payment paper
- Policy reflections

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### GW Research Logic Diagram: Project Schematic



## Questions and Thoughts?

1. What does it take to be a CHW in an integrated program?
2. How can we get research funders and academia more interested in practice-based evidence?

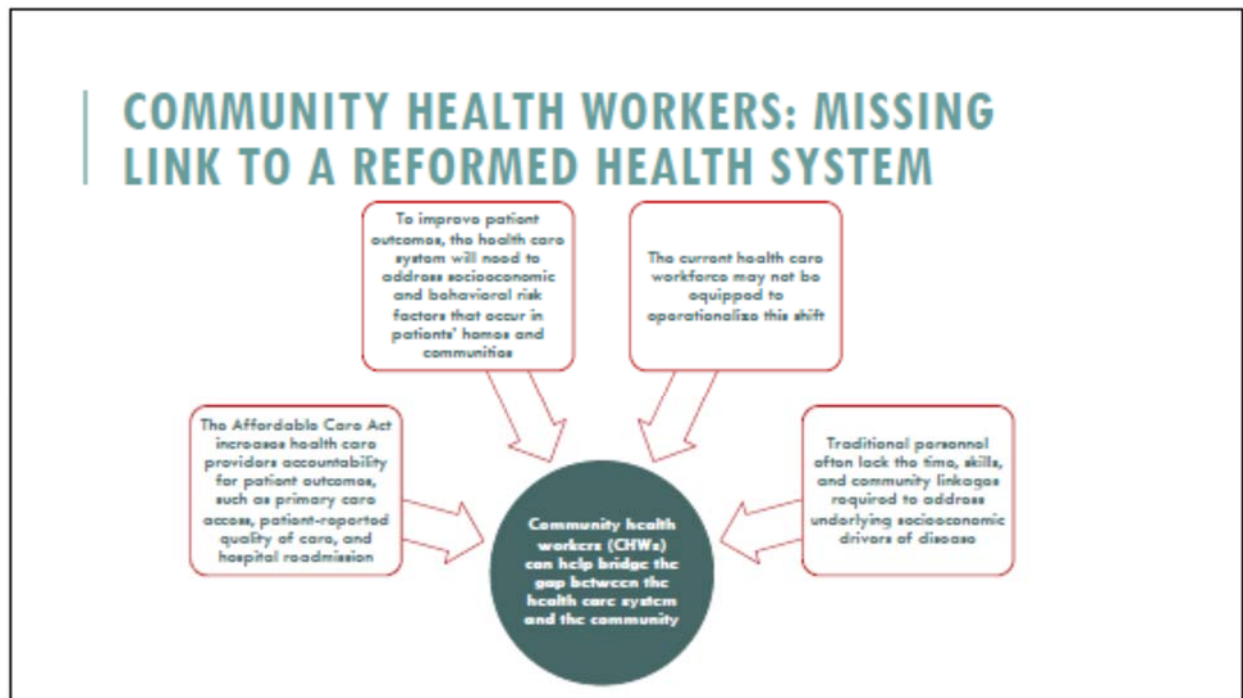
[lquigley@gwmail.gwu.edu](mailto:lquigley@gwmail.gwu.edu)

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## APPENDIX I – Presentation: National Health Policy Forum

### IMPROVING HEALTH CARE DELIVERY THROUGH THE EFFECTIVE USE OF COMMUNITY HEALTH WORKERS

Mary-Beth Malcarney, JD, MPH  
Assistant Research Professor  
Milken Institute School  
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## WHO ARE COMMUNITY HEALTH WORKERS?

*Community Health Workers (CHWs) are frontline public health workers who are trusted members of and/or have an unusually close understanding of the community served. This trusting relationship enables CHWs to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. CHWs also build individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy.* —American Public Health Association, 2008

- The term “CHW” refers to many different job titles and roles: lay health worker, patient navigator, peer advisor, community health advocate, promotores de salud, and many others
- According to the Bureau of Labor Statistics, nearly 48,000 CHWs were working in 2014, with a mean annual wage of just over \$38,000 (Note that many CHWs serve in a volunteer capacity and are not counted by the BLS figures)

## WHAT DO CHWs DO? RESULTS FROM GWU RESEARCH



## THE VALUE OF COMMUNITY HEALTH WORKERS

Connections to community allow CHWs to support medically underserved individuals in ways that traditional medical providers generally do not

Shared experience facilitates the CHW's ability to provide support consistent with a patient's values and needs

Improved Health Outcomes  
Interventions that integrate CHW services into health care delivery systems are associated with:

- reductions in chronic illnesses,
- better medication adherence,
- patient integration into primary care
- increased patient satisfaction,
- improvements in overall community health

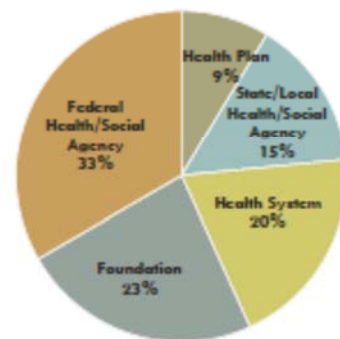
CHW: Return on Investment  
Studies show between \$1.21 - \$6.10 for every dollar invested

One study showed a **23.8% average reduction in annual Medicaid spending** per participant in a program that used CHWs to identify people living in the community who have unmet long-term care needs and connect them to clinical and community-based services

**Source:** Holly C. Felix, Glen P. Mays, M. Kathryn Stewart, Nanci Cottone and Mary Olson. Medicaid Savings Realized When Community Health Workers Matched Those With Needs To Home And Community Care. *Health Affairs*, 30, no.7 (2011):1266-1274; Whitley EN, Everhart RN & Wright RA. Measuring Return on Investment of Outreach by Community Health Workers. *Journal of Health Care for the Poor and Underserved* 17 (2006): 6-15; Beckman S, Kishimoto D, Valach KK, et al. A community-based asthma management program effects on resource utilization and quality of life. *Hawaii Med J*. 2004 Apr; 63(4):121-4; Fedder DO, Chang R, Curry S, et al. for the patient. The effectiveness of a community health worker outreach program on health care utilization of med Baltimore City Medicaid patients with diabetes, with or without hypertension. *Ethn Dis*. 2003 Winter;12(1):1-66; Martinez J, Kralman JE. Community Health Workers: A Critical Link for Improving Health Outcomes and Promoting Cost Effective Care in the Era of Health Reform. New York: New York State Health Foundation 2010.

## HOW ARE PROGRAMS THAT USE CHWs FUNDED?

- The most common funding model is reliance on short-term, categorical grants and contracts from charitable foundations and government agencies
- Increasingly, more health systems and health plans utilize CHWs – these entities either directly employ CHWs on staff, or contract with external organizations who employ CHWs
- Uncommon for insurance reimbursement structures to be in place to support CHWs
- In most states, CHWs are not eligible for reimbursement by Medicaid and/or other public or private insurance programs

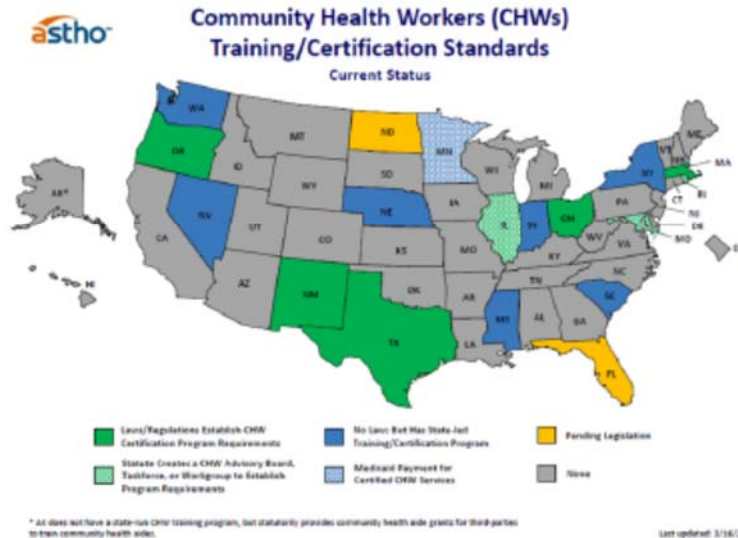


Preliminary results from GWU survey of CHW programs

## RECENT MEDICAID RULE CHANGES: OPPORTUNITY FOR CHW REIMBURSEMENT WITHIN STATE MEDICAID PROGRAMS

PREVIOUS MEDICAID REGULATION:	REGULATION EFFECTIVE JANUARY 1, 2014:
Preventive services are reimbursable by Medicaid when <u>"provided by a physician or other licensed practitioner..."</u>	Preventive services are reimbursable by Medicaid when <u>"recommended by a physician or other licensed practitioner..."</u>

- Impacts "traditional" Medicaid, not Expansion
- Beginning January 1, 2014, Medicaid (either directly or through its managed care contractors) can cover and pay for preventive services when carried out by community health workers
- Previous regulations limited scope of practitioners that can provide preventive services -- as a result, most state Medicaid programs limit coverage of preventive services to those furnished by licensed providers in a clinical setting.





## OTHER ACA DELIVERY SYSTEM REFORMS: OPPORTUNITIES FOR INCLUSION OF CHWs

- (1) **MEDICAID HEALTH HOMES** — New state Medicaid option to allow individuals with two or more chronic conditions to seek care through a health home. States have significant flexibility in determining range of eligible health home providers and treatment settings
- (2) **STATE INNOVATION MODELS (SIM)** — ACA creates funding for State Innovation Models, which are intended to help states improve health outcomes and quality of care while slowing growth in health costs. Several states currently implementing their Model designs have included CHWs in their plans.
- (3) **ACCOUNTABLE CARE ORGANIZATIONS (ACOs)** — CHW services may become more in-demand under accountable and global-budget contracts that financially reward hospitals and medical groups for controlling medical spending

QUESTIONS

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