

Integrating Community Health Workers in Diabetes Management

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Diabetes Management: From Care to Claims

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of Presentation

- Define who community health workers are and provide overview of the CHW workforce.
- Describe core roles for Community Health Workers as identified by the National Community Health Advisor Study and updated by the Community Health Worker Core Consensus Project (C3).
- Identify roles of CHWs as described by the American Diabetes Association and Association of Diabetes Care & Education Specialists (ADCES)
- Describe demographics and baseline clinical indicators of African American patients at a federally qualified health center in the Mississippi Delta enrolled in a pilot CHW Effectiveness Study.
- Discuss statistical differences in patient satisfaction, patient self-efficacy, and patient self-management among intervention and control groups.

Who are Community Health Workers?

The Community Health Worker is *a front-line public health worker is a trusted member of the community being served*, commonly engaged in direct outreach into low-income, underserved or ‘hard-to-reach’ communities.

The Community Health Worker is uniquely knowledgeable of individual, family and community needs, including cultural characteristics, behaviors and attitudes. The Community Health Worker performs a unique intermediary or ‘bridging’ function by explaining the complexities of the system to help individuals and families understand and access services more readily, and communicating about individual and community cultures and needs to help the service delivery system improve access to higher-quality services. The Community Health Worker builds individual and community capacity by increasing individual, family and community self-sufficiency and health knowledge, improving collaboration between service delivery agencies and the community, and influencing attitudes and practices through a range of activities such as community education, informal counseling, social support and advocacy. ¹



Why the focus on CHWs?

- One of the five overall goals for reducing disparities as identified by the Department of Health and Human Services²
- Recommended as strategies in Patient Protection and Affordable Care Act (Public Law 111-148) and Health Care and Education Reconciliation Act of 2010 (Public Law 111-152)
- Cited by Institutes of Medicine in its report “Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care” as improving access to care, controlling costs, and helping to eliminate persistent health inequities among vulnerable populations³
- Identified CHW as Standard Occupational Classification by Bureau of Labor Statistics⁴
- Center for Medicare and Medicaid Innovation (CMMI) has multiple demonstration projects that include CHWs providing health education and coaching, assisting with case and medication management, and linking patients to social services such as housing, disability and insurance benefits, food, and transportation⁵
- CDC funds multiple CHW projects on stroke, heart disease, diabetes, and COVID

CHWs: Community and Team-Based Care

- Community Care
 - As community members, they are able to integrate health information about prevention of disease and the health system into the community's culture, language, and value systems
 - Reducing cultural, linguistic, social, and financial barriers to health care.
 - Increasing access to care and facilitation of appropriate use of health resources by providing outreach and cultural linkages between communities and health systems.
 - Reducing costs by providing health education, screening, detection, and basic emergency care, and improving quality by contributing to patient-provider communication.⁶
- Team-based Care
 - CHWs become the critical extenders of care beyond clinic walls and between doctor visits that are so needed for patients with medically complex conditions.
 - CHWs also serve as the intermediaries that link clinical services to practical actions in the community to address the social determinants of health.
 - For example, CHWs go with a patients to doctors' appointments, made sure they are taking their medications, advised them on diet and nutrition, give rides to the pharmacy, church, etc.
 - CHWs are well-positioned—often better positioned than others on the care team—to gather data on patients' social needs and to identify the social and cultural dynamics that may impede the adoption of healthy behaviors.
 - CHW positions create a health career pathway entry point for groups typically underrepresented in the industry, contributing to economic and workforce development in local communities where health inequities are often most concentrated.⁷

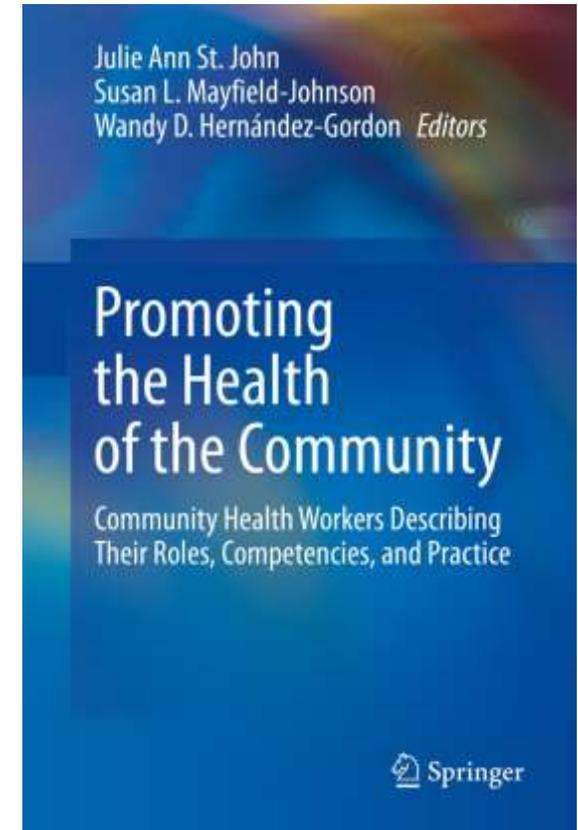
CHW Job Titles



- Case Work Aide
- Community Care Coordinator
- Community Health Advisor
- Community Health Advocate
- Community Health Aide
- Community Health Educator
- Community Health Promoter
- Community Health Representative
- Community Health Worker
- Community Outreach Worker
- Consejera/Animadora (counselor/organizer)
- Environmental Health Aide
- Family Service Worker
- Health Advocate
- HIV Peer Counselor
- Lactation Consultant/Specialist
- Lay Health Advisor
- Lead Abatement Education Specialist
- Maternal/Infant Health Outreach Specialist
- Neighborhood Health Advisor
- Outreach Specialist
- Patient Navigator
- Peer Counselor
- Peer Educator
- Promotor (a) de Salud (health promoter)
- Public Health Aide
- Village Health Worker

Core Roles of CHWs⁸

1. Cultural Mediation among Individuals, Communities, and Health and Social Service Systems
2. Providing Culturally Appropriate Health Education and Information
3. Care Coordination, Case Management, and System Navigation
4. Providing Coaching and Social Support
5. Advocating for Individuals and Communities
6. Building Individual and Community Capacity
7. Providing Direct Service
8. Implementing Individual and Community Assessments
9. Conducting Outreach
10. Participating in Evaluation and Research



HRSA CHW National Workforce Study⁹

- CHW-specific work activities involved:
 - Culturally appropriate health promotion and health education 82%
 - Assistance in accessing medical services & programs 84%
 - Assistance in accessing non-medical services & programs 72%
 - Translation” 36%
 - Interpreting 34%
 - Counseling 31%
 - Mentoring 21%
 - Social support 46%
 - Transportation 36%
- Related to work activities, employers reported CHW duties:
 - Case management 45%
 - Risk identification 41%
 - Patient navigation 18%
 - Direct services 37%

Current interests in CHWs

- Unique roles and characteristics
- Training programs
- Certification and Credentialing
- “Hot-spotters” – high utilizers
- Chronic disease management
 - Stroke, CVD, Diabetes, Hypertension, HIV, asthma, etc.
- Cancer screening and navigation
- Maternal and Child Health
- Patient-centered medical homes
- Costs vs. Savings/Return on Investments (ROIs)
- Disabilities
- Pharmacy (environmental assessments, prescription assistance programs, informal counseling)
- COVID

CHWs and Diabetes Management

- American Diabetes Association
 - CHW Professional Member Category
 - Partnering with NACHW to help share information
 - Standards of Medical Care in Diabetes
 - Webinar
 - Community Health Workers Training: Diabetes 101
 - https://www.youtube.com/watch?v=iPt_fQ7c9bQ
- Standards of Care
 - CHWs, promotores de salud, CHRs, peer health educators and other frontline public health workers, and lay leaders may assist in the delivery of DSMES services, particularly in underserved communities.
 - Part of a cost-effective, evidence-based strategy to improve the management of diabetes and cardiovascular risk factors in underserved communities and health care systems.
 - The CHW scope of practice in areas such as outreach and communication, advocacy, social support, basic health education, referrals to community clinics, etc., has been successful in providing social and primary preventive services to underserved populations in rural and hard-to-reach communities.



Tailoring Treatment for Social Context

- 1.5 Assess food insecurity, housing insecurity/homelessness, financial barriers, and social capital/social community support to inform treatment decisions, with referral to appropriate local community resources. **A**
- 1.6 Provide patients with self-management support from lay health coaches, navigators, or community health workers when available. **A**

Association of Diabetes Care and Education Specialist (ADCES) for CHWs in DSMES

- CHWs advance health equity in diabetes.
 - CHWs speak a common dialect/language
 - Empathize with community challenges
 - Share cultural or religious beliefs
 - Relate to the lived experiences of people with diabetes or prediabetes.¹⁰
- For DSMES and prevention of diabetes, social support matters.
 - Drawing on their personal knowledge of the community, CHWs can provide practical education, guidance, and support to help individual build self-management skills.

Association of Diabetes Care and Education Specialist (ADCES) for CHWs in DSMES

- CHWs work across community and clinical settings.
 - Conduct home visits
 - Lead faith-based support groups
 - Assist with community-based screenings
 - Promote healthy eating through WIC clinics or congregate meal sites
 - Offer peer support in migrant health centers
 - Act as navigators inside large hospital systems.
- CHWs work across settings where community members live, eat, work, worship, and access health services.
- CHWs understand:
 - the very real challenges to eating healthy foods
 - Being physically active
 - Taking medication
 - Coping with stress
 - Accessing care that their own neighbors with diabetes and prediabetes experience.¹¹

Recommendations of ADCES for DSMES

- CHWs can deliver DSMES and diabetes prevention programming to improve outcomes for people with prediabetes and diabetes.
- The 2017 National Standards for DSMES, jointly developed by ADCES and the American Diabetes Association, affirm the value of these diabetes paraprofessionals to the DSMES team.
 - The Standards note that diabetes paraprofessionals can instruct, reinforce self-management skills, support behavior change, facilitate group discussion, and provide psychosocial support and ongoing self-management support. A
- CDC identifies CHWs as effective lifestyle coaches for National Diabetes Prevention Program (National DPP).
 - CDC requires all CHWs to receive Lifestyle Coach Training to enhance their skills in interpersonal communications, group facilitation, cultural competency, and behavior change and learn basic health, nutrition, physical activity, and healthy lifestyle knowledge before providing a CDC-recognized lifestyle change program.

Scope, role and competencies



- CHWs working with or within health care systems act as liaisons between health care providers and people with diabetes and prediabetes while connecting those individuals to needed medical and social resources.
- Diabetes care teams working with CHWs are often better able to understand needs of those they serve while people with diabetes, working with CHWs, are better able to understand their health condition and provider's recommendations.
- Supporting the role of the CHW as a member of the care team promotes trust between the provider and the CHW.
- The most frequently reported CHW roles on care teams¹² are:
 - Helping people gain access to medical services (86%)
 - Advocating for individual needs (86%)
 - Teaching people how to use health care and social services (78%)
 - Helping people manage chronic conditions(77%)

Scope, role and competencies

- Diabetes-specific CHW functions include:
 - Working with diabetes/health care teams to identify and overcome cultural barriers to self-care or behavior change
 - Encouraging referrals to accredited or certified DSMES and CDC-recognized lifestyle change programs
 - Gaining insight into cultural understandings of prediabetes and diabetes and educating community members about these conditions
 - Utilizing culturally connected strategies to confirm that individuals understand the information provided by diabetes educators (CHWs who are CDE) and other healthcare professionals
 - Participating in data collection, program evaluation, and continuous quality improvement initiatives
 - Providing ongoing support to connect people with prediabetes or diabetes to community resources that address social determinants of health
 - Collaborating with the diabetes/health care team to assist people with prediabetes or diabetes build effective self-management skills and sustain behavior change
 - Supporting culturally informed changes to daily routines around healthy eating, being physically active, managing stress, and other self-care behaviors
 - Serving as a bridge between people with diabetes, the diabetes health care team, and the health care system
 - Building strong community connections through advisors, community health advisory boards, and multi-sector coalitions to inform healthcare providers about community needs, barriers to care, and facilitators for healthy behaviors

Lessons learned from implementation of a CVD CHW effectiveness study during COVID-19

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Specific Aims

- Aim 1: Compare patient clinical outcomes of participants who receive CVD risk management education and monitoring from CHWs (n=100) to participants who receive normal standard of care and do not receive a CHW for risk management and education (n=100).
- Aim 2: Assess differences in patient satisfaction, patient self-efficacy, and patient self-management between patients who receive CVD risk management education and monitoring from CHWs (G_I) and those who receive normal standard of care and do not receive a CHW for risk management and education (G_C).
- Aim 3: Assess feasibility of CHW model delivery and effectiveness evaluation.

Table 1: Participant Demographics (n=116)

Category	n (%)
Biological Sex (n=116)	
Male	40 (34.5)
Educational Level (n=116)	
Less than high school	32 (27.6)
Completed high school or equivalent	37 (31.9)
Some college or trade school	22 (19.0)
Associates degree	10 (8.6)
Bachelors degree or higher	12 (10.3)
Prefer not to answer	3 (2.6)
Employment Status (n=115)	
Full Time	34 (29.6)
Part Time	5 (4.3)
Seasonally Employed	3 (2.6)
Unemployed	16 (13.9)
Retired	7 (6.1)
Disabled	35 (30.4)
Prefer not to answer	15 (13.0)

Table 1: Participant Demographics (n=116)

Category	n (%)
Income Level (n=115)	
Less than \$10,000	5 (4.3)
\$10,000 - \$14,999	19 (16.5)
\$15,000 - \$24,999	35 (30.4)
\$25,000 - \$34,999	24 (20.9)
\$35,000 - \$49,999	17 (14.8)
\$50,000 - \$74,999	2 (1.7)
\$75,000 and above	1 (0.9)
Prefer not to answer	12 (10.4)
Insurance Status (n=115)	
Private Insurance	26 (22.6)
Employer-Provided Insurance	10 (8.7)
Medicaid or Medicare	52 (45.2)
Military Insurance (Tri-Care)	1 (0.9)
Insurance through the Affordable Care Act	7 (6.1)
No Insurance	14 (12.2)
Prefer not to answer	5 (4.3)

Aim 1: Compare patient clinical outcomes of those who receive CVD risk management education and monitoring from CHWs (n=100) to participants who receive normal standard of care

Characteristic	Control Group n (%)	Intervention Group n (%)	P value
Categorical			
Diabetes (Yes / No)	28 (51.9)	29 (46.0)	0.53
HTN (Yes / No)	49 (90.7)	57 (91.9)	0.82
Continuous			
	Mean (sd)	Mean (sd)	P value
Age	56.7 (13.2)	57.8 (12.6)	0.89
A1C	6.6 (1.8)	6.6 (2.1)	0.31
BMI	35.7 (10.6)	34.0 (9.5)	0.62
Glucose	125.5 (67.5)	139.7 (74.9)	0.39
HDL	51.3 (23.4)	52.5 (17.1)	0.82
LDL	106.1 (33.7)	98.7 (34.8)	0.85
Total Cholesterol	179.9 (39.0)	174.8 (41.8)	0.43
Triglycerides	123.0 (56.3)	121.4 (50.6)	0.68

Aim 2: Assess differences in patient satisfaction, patient self-efficacy, and patient self-management

- Knowledge of constructs related to CVD

Question	Baseline n=68 n (%)	Post-Intervention n=63 n (%)	p value
What is diabetes?	48 (70.6)	61 (96.8)	0.001
What is a healthy target for glucose?	25 (36.8)	58 (92.1)	0.001
What is hypertension?	49 (72.1)	61 (96.8)	0.001
What is a healthy target for blood pressure?	37 (54.4)	44 (69.8)	0.033
What is a heart attack?	45 (66.2)	60 (95.2)	0.001
What is a stroke?	35 (51.5)	60 (95.2)	0.001
What does BMI measure?	33 (48.5)	48 (76.2)	0.001
What should your total cholesterol be?	30 (44.1)	53 (87.3)	0.001
How many servings of fruits and vegetables should you eat every day?	22 (32.4)	30 (47.6)	0.036

Aim 2: Assess differences in patient satisfaction, patient self-efficacy, and patient self-management

- Telehealth Needs Satisfaction Survey¹³
- HEIQ v.3
 - 40 item instrument that measures 8 constructs of HDB, PAEL, SMI, CAA, STA, SIS, HSN, and ED.
- MOS SF-36
 - 36 items that assess eight health concepts including limitations in physical activities because of health problems, limitations in social activities because of physical or emotional problems, limitations in usual role activities because of physical health problems, bodily pain, general mental health, limitations in usual role activities because of emotional problems, vitality, and general health perceptions.

Aim 3: Assess feasibility of CHW model delivery and effectiveness evaluation

Statement	SA n (%)	Agree n (%)	Uncertain n (%)	Disagree n (%)	SD n (%)
I was able to communicate adequately with the CHW.	28 (44.4)	34 (54.0)	1 (1.6)	0 (0.0)	0 (0.0)
I was comfortable that the CHW was able to understand my problem.	29 (46.0)	32 (50.8)	1 (1.6)	1 (1.6)	0 (0.0)
The telehealth visit was embarrassing to me.	6 (9.5)	0 (0.0)	5 (7.9)	28 (44.4)	24 (38.1)
I had difficulty hearing or understanding the CHW over the telehealth system.	2 (3.2)	6 (9.5)	8 (12.7)	26 (41.3)	21 (33.3)
I had difficulty seeing the CHW over the telehealth system.	0 (0.0)	2 (3.2)	6 (9.5)	32 (50.8)	23 (36.5)
Telehealth made it easier for me to visit with the CHW.	7 (11.1)	22 (34.9)	20 (31.7)	0 (0.0)	0 (0.0)
I would have received better care if I had seen the CHW in person.	2 (3.2)	15 (23.8)	19 (30.2)	22 (34.9)	5 (7.9)
Overall, I was very satisfied with the telehealth sessions with the CHW.	18 (28.6)	39 (61.9)	6 (9.5)	0 (0.0)	0 (0.0)
If I see the CHW again, I would prefer to see the CHW in person despite the possible inconvenience.	2 (3.2)	12 (19.0)	20 (31.7)	27 (42.9)	2 (3.2)

Aim 3: Assess feasibility of CHW model delivery and effectiveness evaluation

- Focus Groups with patients on CHWs and telehealth experiences
 - High levels of patient satisfaction
 - “When I have a problem, I can call Ms. Mattie. She is always there to answer my questions.”
 - “Ms. Mattie will get on my case and set me straight.”

Where do we go from here?

- Help people with diabetes understand and prepare for medical procedures in plain language
- Facilitate referrals to specialty care
- Arrange follow-up and providing reminders to engage with care
- Help individuals apply for support for prescription drugs, transportation, and other resources
- Participate in design, implementation and interpretation of individual-level assessments to identify opportunities to improve the quality of care for people with diabetes
- Participate in evaluation and research by identifying priority issues, research design and methods, collecting data and interpreting the data, sharing results and engaging stakeholders to act on findings.

Incentives for participation

- Patients were randomized into the intervention and control group.
- All patients received \$25 gift card to complete surveys at baseline.
- Intervention patients received \$25 gift card to complete surveys at post intervention.
- Control patients received \$25 gift card to complete surveys after 12 weeks.
- All patients received lab panel at baseline and post-intervention (or after 12 weeks) that assessed A1C, glucose, HDL, LDL, and triglycerides that were paid by the study.
- Patients received a home blood pressure monitor to assess blood pressure.

CHWs roles

- Helping people gain access to medical services
- Advocating for individual needs
- Teaching people how to use health care and social services
- Helping people manage chronic conditions
- Providing some direct services (labs of a1c, lipid profile) under supervision of FNPs
- Working with health care teams to identify and overcome cultural barriers to self-care or behavior change
- Gaining insight into cultural understandings of prediabetes/diabetes, hypertension, heart disease, obesity, and the need for increased physical activity and educating community members about these conditions
- Participating in data collection, program evaluation, and continuous quality improvement initiatives
- Providing ongoing support to connect people with chronic conditions to community resources that address social determinants of health
- Supporting culturally informed changes to daily routines around healthy eating, being physically active, managing stress, and other self-care behaviors
- Building strong community connections through advisors, community health advisory boards, and multi-sector coalitions to inform healthcare providers about community needs, barriers to care, and facilitators for healthy behaviors

Lessons learned

- Study originally had a 6-months intervention and was face-to-face.
 - Shift to telehealth and 3 months to complete during research funded time period.
- COVID required transition to telehealth.
 - Tools had to be changed in the middle of the research and protocols reset.
 - Additional tools added; some surveys removed
- COVID effects on data collection
 - Priorities of patients changed to focus on COVID
 - Duties of CHWs changed; focus on COVID testing
 - Isolation due to positive results of clinic staff

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