Roles and Functions of Community Health Workers in Primary Care

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ABSTRACT

Community health workers have potential to enhance primary care access and quality, but remain underutilized. To provide guidance on their integration, we characterized roles and functions of community health workers in primary care through a literature review and synthesis. Analysis of 30 studies identified 12 functions (ie, care coordination, health coaching, social support, health assessment, resource linking, case management, medication management, remote care, follow-up, administration, health education, and literacy support) and 3 prominent roles representing clusters of functions: clinical services, community resource connections, and health education and coaching. We discuss implications for community health worker training and clinical support in primary care.

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INTRODUCTION

Increased health care costs and demand have accelerated the need for resource-saving approaches that improve access to and delivery of primary care services. We define community health workers in primary care (CHW-PCs) as trained individuals with limited to no formal medical education who provide patient-facing support and services in primary care. CHW-PCs carry out functions that are person-centered, support team-based care, address social determinants of health, and promote health care access, patient engagement, and outcomes.[1-4] Historically, these frontline health workers have been particularly effective when they share ethnicity, language, socioeconomic status, and life experiences with communities they serve,[5] reflecting peer support.[6] A growing body of research illustrates diverse ways that community health workers, best known for their role in community and global settings,[5,7,8] can be utilized in primary care. Despite their potential to contribute as care team members,[9-12] CHW-PCs remain largely underutilized.[7,11] Guidance is needed on ways to best promote and expand CHW-PCs. CHW-PC roles vary across clinics, with numerous job titles and duties, making it difficult to identify best practices.[2,3] Perspectives vary on what CHW-PCs do and their training and clinical support needs.

METHODS

Following PRISMA guidelines,[13] we characterized patient care roles and functions of CHW-PCs in US primary care through a systematic mixed studies review.[14,15] Supplemental Appendix 1, http://www.annfammed.org/content/16/3/240/suppl/DC1/, details the inclusion criteria, search strategy, quality assessment, data extraction, and PRISMA flow diagram of our systematic review. Briefly, we searched and screened articles for eligibility, assessed article quality using the Mixed Methods Appraisal Tool (MMAT),[16] and extracted data on characteristics of CHW-PCs from articles meeting inclusion criteria. We used extracted data to: (1) qualitatively classify functions CHW-PCs perform using a modified Delphi card sort,[17] and (2) quantitatively identify roles through k-means cluster analysis of

functions.[18] The card sort involved writing descriptions of what CHW-PCs do, which coauthors grouped by similarity into functional categories. To identify roles that involved multiple functions, we described each study as a binary vector of functions (ie, each function was marked as present/absent) and clustered vectors, varying the number of clusters (K) until reaching the best fit using silhouette width.[19]

RESULTS

Thirty studies met inclusion criteria (Supplemental Appendix 2, available at http://www.annfammed.org/content/16/3/240/suppl/DC1/).[20-50] We combined articles about the same study[33,34] and added detail from reference lists.[51-56] Study designs included qualitative, quantitative (ie, randomized controlled trials, nonrandomized, or descriptive designs), and mixed methods. Most studies (24/30) scored moderate to high quality (MMAT ≥50%).

Community health workers in primary care characteristics were diverse (Supplemental Appendix 3, available at http://www.annfammed.org/content/16/3/240/suppl/DC1/), with over one-half targeting racial, ethnic, or underserved groups.* Most had administrative structures supporting their work, such as designated staff[32,43] and regular team meetings.[22,36] In addition to patient visits and phone calls, in one-third of studies CHW-PCs extended the reach of care teams through home visits† and documentation in electronic health records[20,25,33,36,43,44] or registries.[21,23,24,33-35,37,38]

Functions

We qualitatively identified 12 distinct CHW-PC functions representing patient-facing services (Table 1).

Roles

Based on the distribution of CHW-PC functions across studies, k-means clustering indicated 3 clusters (average silhouette width = 0.23, SD = 0.7). Removing 6 studies with MMAT quality scores <50%[21,22,28,40,46,50] had little impact on clusters (average silhouette width = 0.22, SD = 0.05). We labeled clusters as CHW-PC roles having similar constellations of functions: clinical services, community resource connections, and health education and coaching (Table 2). Nearly all studies depict multiple functions with some functions more prevalent than others (eg, health coaching, case management).

Clinical Services

Clinical services focus on health assessment and remote care more than other clusters.[21-31] This role also performed other functions, but none provided literacy or social support. Examples include assessment of vital signs, lifestyle, health knowledge,[23] psychosocial factors,[22,26] and care through routine exams aided by remote communication with physicians.[28] These services provide for patient dialog, helping care teams understand patients' health, background, and preferences.[22] An example is the "community health aid" who provided clinical services in remote Alaskan villages using scripted questions and directed exams for common health problems.[24]

Community Resource Connections

Community resource connections link patients with community-based services,[32-40] such as referrals for transportation or food assistance.[35] Ongoing social support and follow-up phone calls were common, yet remote care, education, and literacy support were uncommon. An example is "promotoras" who screen patients for depression by interviewing them about contextual factors (eg, unemployment) and help resolve those barriers with community referrals (eg, vocational training).[37]

Health Education and Coaching

Health education and coaching are key functions of the third role.[20,41-50] Health coaching generally involved motivational interviewing[46] and action planning to help patients achieve health goals.[45] Health education typically targeted specific issues, such as cancer screening[42,44] or self-management of a chronic illness.[43] Nearly one-half of studies in this cluster provided follow-up and administrative support, yet none included health assessment or remote care. Examples include "peer health coaches" who counsel, teach, and support self-management in low-income diabetics[47] or "care guides" who facilitate goal setting and care coordination.[20]

DISCUSSION

Community health workers in primary care focus on core functions that cluster into 3 roles. This categorization expands prior work in community and global settings[5,7,8] and informs future design of primary care. Practices that embed CHW-PCs could enhance care while enriching the understanding of patients' situations and needs.[29,38] Our search strategy and heterogeneity in study designs, quality, or reporting practices, however, may have limited findings. We may have overlooked variations apparent only through unpublished sources. Nonetheless, a cost-effective workforce that includes CHW-PCs might help overburdened care teams meet the Quadruple Aim[57] through community-

*References 25-28,33,35,38,41,42,44,45,47-49

† References 22,24,29,31,32,35,38,40-42,46

Table 1. CHW-PC Functions

Function	Definition	Examples From Included Studies
Care coordination	Provides information and assistance to patients about receiving care from institutions and providers outside of primary care	Navigates individuals at risk for coronary heart disease by making medical referrals to local clinics and health care providers[23] Meets with patients following each clinic appointment to help direct them to the laboratory or to other appointments[20]
Health coaching	Provides self-management support to patients through counseling involving collaborative goal setting, problem solving, and action planning	Helps patients design action plans to achieve goals chosen by the patient[47] Contacts patients, educating them about smoking cessation resources, motivating them using motivational interviewing techniques, and helping them decide which treatment to pursue[46]
Providing social support	Provides a supportive, but non-therapeutic relationship, such as peer-based informational, emotional, or instrumental support	Advocates on behalf of patients by serving as "culture brokers"[50] Provides emotional support, validates patients' feelings, asks open-ended questions, and listens reflectively[39] Leads walking club and assists with group peer support meetings focused on coping with life with chronic disease, stress management, group empowerment, and other group-selected activities[38]
Health assessment	Performs clinical assessments within or outside of clinic appointments	Performs quarterly clinical assessments of A_{1c}, blood pressure, weight, and foot condition (eg, visual and monofilament assessment)[33] Interviews individuals about their health concerns, including survival and social concerns such as parental stress, nutrition, access to medical care, crime, domestic violence, mental health, and substance abuse[29]
Resource linking	Helps patients access local services using standardized resources	Requests community-based services for transition from hospital discharge, such as transportation, Meals on Wheels, and in-home supports (eg, home health aid)[21] Provides links to supportive community resources and tracks referrals made to local programs to address patient-identified community and policy issues affecting disease management[32]
Case management	Assesses patients' needs and provides personalized assistance	Explores each patient's specific barriers to receiving care and develops and implements an individualized plan to address these barriers, such as scheduling appointments, resolving insurance, accompanying patients to follow-up appointments, and making home visits[42] Identifies, trouble shoots, and responds to patients' post-discharge concerns, such as reminders and transportation assistance for upcoming appointments, barriers to obtaining medications, concerns that might require nurse intervention, and poor understanding of self-management instructions[21]
Medication management	Provides limited medication reconciliation without making recommendations	Counsels patients on medication adherence, uses physician-approved protocols to assist patients in home titration of antihypertensive medication, and notifies physician to fax prescription to the pharmacy[25] Assists with pharmacy activities, including helping patients obtain medication refills for chronic health problems[24]
Remote primary care	Provides limited primary care services in remote areas (eg, first aid, simple chronic disease care, follow-up care)	Provides emergency care, routine clinical services, laboratory screenings, physical examinations, preventive health assessments and follow-up on call 24 hours a day[28] Provides all primary care in their community in consultation with a remote physician who calls regularly to elicit descriptions of patient signs and symptoms and to provide specific instructions for care[31]
Follow-up	Monitors patients outside of office visits	Makes weekly telephone calls to patients to discuss overall well-being, adherence to action plans, and blood pressure values[25] Tracks patients overdue for colorectal cancer screening by calling or meeting patients in the health center[44]
Administration	Provides front desk reception (eg, data entry)	Updates patients' medical records with colorectal cancer screening results[44] Assists in appointment scheduling, responding to patients concerns and updates contact info[21]
Targeted health education	Provides information and didactic skills training to patients with specific health needs	Makes home visits to deliver curriculum with hands-on activities focused on type 2 diabetes, its complications, nutrition, physical activity, blood glucose self-monitoring, adherence to medications and medical appointments, and mental health[41] Educates patients about diabetes and the importance of blood glucose control, medication adherence, diet, and exercise[33]
Health literacy support	Helps patients understand medical advice and recommendations, including translation services	Clarifies questions stemming from patients' encounters with health care providers, acts as an interpreter to enhance communication between patients and providers, reinforces teaching provided by health care providers[49] Assists patients in reading medical forms to address limited functional literacy[50]

A_{1c} = glycosylated hemoglobin; CHW-PC = community health workers in primary care.

based clinical services, resource connections, and health education and coaching.

Findings carry practical insights that extend current guidance[10,58-61] for system and clinic administrators in planning diverse ways to incorporate CHW-PCs, such as devoted workspace.[62,63] Home visits may extend the clinic's reach, but require new strategies for remote supervision and technology access.[64,65] Decisions about how to best utilize CHW-PCs depend on needs of patients and care teams, clinical workflows, financial viability, and addressing practice burdens while facilitating performance[66,67] and cost-savings.[68] Increasing

Table 2. CHW-PC Roles

Study	Care coordination	Health coaching	Social support	Health assessment	Resource link	Case management	Medication management	Remote primary care	Follow-up	Administration	Targeted health education	Health literacy support	Total number of functions
Cluster 1: Clinical services (n = 11)													
Burns et al,[21] 2014	✓				✓	✓	✓			✓			5
Findley et al,[22] 2014		✓		✓		✓							3
Krantz et al,[23,53] 2013	✓	✓		✓					✓				4
Golnick et al,[24] 2012				✓			✓	✓		✓	✓		5
Margolius et al,[25,55] 2012							✓		✓				2
Battaglia et al,[26] 2012		✓		✓		✓				✓			4
Naar-King et al,[27] 2009		✓											1
Sherer et al,[28,56] 1994								✓					1
Swider et al,[29] 1990				✓	✓								2
Deuschle et al,[30] 1983	✓												1
Hudson et al,[31] 1973								✓		✓			2
Cluster 2: Community resource connections (n = 8)													
Wennerstrom et al,[32] 2015		✓			✓				✓				3
Collinsworth et al,[33,34] 2013;2014	✓	✓	✓	✓	✓	✓			✓		✓		8
Volkmann et al,[35] 2011		✓		✓	✓	✓	✓		✓	✓			7
Waitzkin et al,[36] 2011				✓	✓	✓			✓	✓			5
Holtrop et al,[37] 2008	✓	✓	✓		✓	✓			✓				6
Thompson et al,[38] 2007		✓	✓		✓				✓	✓	✓		6
Adelman et al,[39] 2005		✓	✓		✓				✓				4
Torrey et al,[40,54] 1973			✓		✓	✓		✓	✓		✓		6
Cluster 3: Health education and coaching (n = 11)													
Perez-Escamilla et al,[41] 2015		✓									✓		2
Percac-Lima et al,[42] 2015					✓	✓				✓	✓	✓	5
Matiz et al,[43] 2014						✓			✓		✓		3
Percac-Lima et al,[44,51] 2014						✓			✓	✓	✓	✓	5
Kangovi et al,[45] 2014		✓				✓			✓			✓	4
Lasser et al,[46] 2013		✓				✓				✓	✓		4
Thom et al,[47,52] 2013		✓							✓	✓	✓		4
Adair et al,[20] 2012	✓	✓				✓					✓	✓	5
Otero-Sabogal et al,[48] 2010		✓				✓	✓		✓		✓		5
McElmurry et al,[49] 2009	✓	✓								✓	✓	✓	5
Poland et al,[50] 1991		✓	✓			✓					✓	✓	5
Total number of studies	7	18	6	8	11	16	5	4	15	12	14	6	122

CHW-PC = community health workers in primary care.

the presence of CHW-PCs also requires training and clinical integration necessary to build this new workforce,[59,69] including certification,[58] health information technology, and clinical oversight for the breadth of contributions CHW-PCs offer.

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Key words: community health workers; primary health care; patient care team

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