

Community Health Workers in Action: Community-Clinical Linkages for Diabetes Prevention and Hypertension Management at 3 Community Health Centers

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Abstract

In 2014, the Hawai'i State Department of Health (HDOH) received funding from the Centers for Disease Control and Prevention (CDC), via the 1422 Cooperative Agreement, to conduct diabetes prevention and hypertension management. To implement one grant-required strategy—the engagement of community health workers (CHWs) to promote community-clinical linkages—the HDOH partnered with the Hawai'i Primary Care Association and 9 federally qualified health centers (FQHCs). This qualitative evaluation case study sought to understand how 3 of the funded FQHCs engaged CHWs, the types of community-clinical linkages the CHWs promoted, and the facilitators of and barriers to those linkages. Evaluators conducted 2 semi-structured group interviews with 6 administrators/clinicians and 7 CHWs in April 2018. The transcribed interviews were deductively and inductively analyzed to identify major themes. First, CHWs made multiple internal and external linkages using resources provided by the grant as well as other resources. Second, CHWs faced barriers in making community-clinical linkages due to individual patient, geographic, and economic constraints. Third, CHWs have unmet professional needs related to building community-clinical linkages including professional development, networking, and burnout. Reimbursement and payment mechanisms are an all-encompassing challenge to the sustainability of CHW positions, as disease-specific funding and a complete lack of reimbursement structures make CHW positions unstable. Thus, CHWs fulfill a number of grant-specific roles at FQHCs due to this patchwork of funding sources, and this relates to CHWs' experiences of burnout. Policy implications of this study include funding and reimbursement stabilization so FQHCs may consistently engage and support the CHW workforce to meet their patients' complex, diverse needs. More professional development opportunities for CHWs are necessary to build sustainable networks of resources.

Keywords

Community health workers, CHW, community-clinical linkages, diabetes, hypertension

Highlights

- CHW roles cut across grants, creating multiple types of community-clinical linkages for FQHC clients.
- CHWs develop linkages through networks, but need time to expand networks further.
- Client characteristics, FQHC locations, and economic issues are barriers to linkages.
- To increase CHW capacity for disease prevention/management, more training is needed.
- Stabilizing funding and reimbursement to support the CHW workforce is critical.

Abbreviation List

CHW = community health worker
FQHC = federally qualified health center
HDOH = Hawai'i Department of Health
HPCA = Hawai'i Primary Care Association
UHET = University of Hawai'i Evaluation Team (Office of Public Health Studies)
NDPPLCP = National Diabetes Prevention Program Lifestyle Change Program

Introduction

Community health workers (CHWs) are known by many names: *promotoras/es*, community care coordinators, community health educators, patient navigators, and community outreach workers, among others.¹ They are frontline health workers who are trusted members of the community. They often bridge community and health/social services, work to increase access to those services, and support efforts to improve health care quality and cultural competence.² Common roles of CHWs include serving as cultural mediators between patients and systems and providing culturally-appropriate health education, information, or direct services.³ Additionally, CHWs play key roles in health intervention delivery, both across the country and in Hawai'i, including the prevention of heart disease and stroke,⁴⁻⁷ hypertension management,⁸ diabetes self-management,⁹⁻¹⁰ cancer screenings and services,¹¹⁻¹⁵ cancer navigation,¹⁶⁻¹⁷ and asthma control.¹⁸⁻¹⁹ Furthermore, CHWs are a key part of diabetes and hypertension interventions targeting members of the Asian, Native Hawaiian, and Pacific Islander communities.²⁰

CHWs are important to providing community-clinical linkages to clinic patients. These linkages, or referrals, connect patients with services that can aid in the prevention of disease. These include extending resources beyond the clinical setting,²¹ such as linkages to food retailers²²⁻²³ or physical activity venues.²² Other types of services that are linked to may include cancer screening services,^{1,11,24} lifestyle change programs,^{1,25-26} or services that address patients' needs as related to the social determinants of health.¹ Through understanding community needs and patient-CHW cultural concordance, CHWs can positively affect both patient-level^{9,27} and community-level outcomes.²⁸⁻²⁹

In 2014, the Centers for Disease Control and Prevention (CDC) released the State and Local Public Health Actions to Prevent Obesity, Diabetes, Heart Disease and Stroke cooperative agreement under the CDC 1422 Cooperative Agreement (hereafter, referred to as the 1422 grant). The Hawai'i Department of Health (HDOH), a grant awardee, partnered with the Hawai'i

Primary Care Association (HPCA) and 9 federally qualified health centers (FQHCs) to implement local-level health systems' interventions. These FQHCs are located in communities with health disparities related to diabetes, heart disease, stroke, and hypertension, especially among priority populations including Native Hawaiians, Pacific Islanders, and Filipinos. One grant strategy was to support diabetes prevention and hypertension control efforts through the promotion of community-clinical linkages by CHWs.³⁰ The current study, as part of the grant evaluation, sought to understand how these health centers engaged CHWs to promote community-clinical linkages and enumerate those linkages. Study objectives were to describe how FQHCs engaged with CHWs, types of community and clinical resources that CHWs referred community members to, and facilitators of and barriers to CHWs' engagement at clinics and with patients.

Methods

Evaluation Collaboration

The HDOH contracted the University of Hawai'i at Mānoa Evaluation Team (UHET) in the Office of Public Health Studies to evaluate grant activities related to CHWs and community-clinical linkages. The HDOH, the HPCA, and the UHET identified 3 FQHCs with high levels of CHW engagement throughout the term of the cooperative agreement. These FQHCs were Kokua Kalihi Valley Comprehensive Family Services, located in urban Honolulu, O'ahu; Lāna'i Community Health Center in Lāna'i City, Lāna'i; and West Hawai'i Community Health Center, Kailua-Kona, Hawai'i Island. These centers serve varied geographic areas and patient demographic groups (Table 1).

Study Design

This evaluation study used qualitative methods. Evaluators created 2 semi-structured group interview guides, 1 for CHWs and 1 for administrators and clinicians. Guides asked about the types of community-clinical linkages identified and provided by CHWs, how CHWs were engaged in the grant goals of diabetes prevention and hypertension management, and the barriers to and facilitators of CHW engagement. A group of 7 CHWs and a separate group of 6 clinician/administrators were interviewed in April 2018 at Lāna'i Community Health Center after a quarterly learning session which was part of the FQHCs' 1422-related activities. Each group interview lasted 75 minutes.

Data Analysis

Interviews were transcribed verbatim, then deductively coded in Nvivo 11 (QSR International), based on the interview guide and grant structure. The primary coder (DS) also coded inductively for emergent themes. Themes were then validated by interviewees during 4 webinars conducted in July 2018; 3 webinars included the CHWs from each FQHC, and a fourth webinar included all clinician/administrator participants. Feedback was incorporated into the study results.

Ethics Statement

The University of Hawai'i at Mānoa Institutional Review Board (UH IRB #2018-00226) approved this study. All participants provided informed consent.

Results

Four major thematic areas emerged from the interviews. The themes are presented in Table 2.

Theme 1: CHWs Made Multiple Internal and External Linkages

One CHW said their role was *"to link resources from the community to the clinic, the clinic to the community, so we serve as that bridge. Linking people to services."* To that end, CHWs made linkages to programs in their clinics and community-clinical linkages external to the clinic, which were both 1422 grant-specific or related to other grants and resources (Table 3). Internal programs may already exist at clinics (eg, urban farm, tobacco cessation) or were created out of a need for programs in the community due to isolation (eg, exercise programs). External community-clinical linkages related to lifestyle change included linkages to food retailers, food banks, wellness classes, and other lifestyle change services (eg, Ornish program). In addition, program participants were referred to behavioral health providers or to organizations that address other financial or systemic barriers that affect health. One administrator put it this way: *"Their problem may not be their health, it might just be getting some food on the table or housing. If you're not addressing the social determinants, then you're not addressing that whole person."* To address these determinants, CHWs provided a number of direct services, including program eligibility counseling and outreach and education services in different venues (Table 4). External linkages were built through networking; CHWs met community organizations of all types to learn more about local services to offer their patients: *"We've kind of built...this community resource book. It's a big binder and we just stick like business cards in there and different brochures and pamphlets that when we meet people outside."*

As part of the 1422 grant, CHWs also implemented intervention activities related to both the National Diabetes Prevention Program Lifestyle Change Program (NDPPLCP), such as lifestyle change classes, and self-measured blood pressure monitoring programs, including training patients on blood pressure monitor use, measurement recording, medication reconciliation, dietary and physical activity modification, stress management strategies, and home visits. CHW implementation of these activities assisted referrals to varied resources for both intervention participants and patients in general. Additionally, CHWs planned and coordinated supplementary activities for the NDPPLCP, as described by one CHW: *"You have to be able to demonstrate the things that [participants] can do and I think that was keeping them really engaged. You have to do things like cooking demos ... we've done everything from doing bicycles ... to doing yoga to Zumba Pound [Zumba with sticks]... You really have to embellish that curriculum to make it alive."*

Interviewees also reported providing interpretation and translation services for patients in a number of languages in support of grant goals.

Theme 2: CHWs Face Multilevel Barriers in Making Community-clinical Linkages

CHWs and administrators reported barriers to community-clinical linkages for lifestyle change across individual patient, geographic, and economic levels. Individual patient barriers included time or willingness to participate in programmatic resources, which required CHWs to be persistent in motivating patients to engage in resource referrals. One administrator

related a story about one patient-CHW interaction: “[A CHW] would follow that one patient that’s like ‘nope, I don’t wanna exercise today, I don’t wanna exercise.’” Geographic barriers stemmed from clinic isolation or the size of the area served. One health center services an 80-mile corridor, while another is “so isolated that we’re almost a one-stop shop.” Geographic isolation intersected with economic issues related to island shipping patterns, which also made linkages for lifestyle change difficult: “[W]e have to rely on the barge to bring us our food and then it’s at a higher cost... they see something cheaper that’s unhealthy they’re gonna go for that... No one wants to spend \$50 on a couple vegetables.”

	Kokua Kalihi Valley ^a	Lāna'i Community Health Center ^b	West Hawai'i Community Health Center ^c
Total Patients	10 842	2010	15 446
Total Adults >18 Years (%)	6256 (58%)	1324 (66%)	8826 (57%)
Race & Ethnicity (% known)			
Hispanic/Latino	2.11%	8.81%	13.35%
Asian	18.46%	45.97%	8.84%
Native Hawaiian or Other Pacific Islander	77.90%	16.74%	21.80%
More than One Race	0.45%	19.91%	31.73%
Best Served in a Language Other than English (%)	46.00%	N/A	5.88%
Poverty Status			
At or Below 200% of Poverty	97.66%	53.83%	81.69%
At or Below 100% of Poverty	77.02%	24.56%	55.74%
Insurance			
Uninsured	15.95%	12.74%	5.92%
Medicaid/CHIP	56.45%	19.80%	60.02%
Medicare	5.25%	10.40%	11.17%
Dually Eligible	N/A	0.30%	4.13%
Other Third Party	22.36%	57.06%	22.89%
Special Populations			
Homeless	0.48%	0.35%	3.96%
Agricultural Worker	0.05%	0	2.68%
Public Housing Resident	100.00%	0	0
Veterans	0.06%	3.13%	2.29%
Clinical Data			
Hypertension (% of estimated adult patients ages 18-85)	37.15%	19.56%	25.62%
Diabetes (% of estimated adult patients ages 18-75)	34.19%	13.00%	13.34%
Disease Management			
Controlled Hypertension (<140/90) among Those with Hypertension ^d	72.17%	43.96%	57.08%
Poor Diabetes Control or No Test During Year among Those with Diabetes ^e	38.91%	35.96%	26.38%

*All data from the Health Resources & Service Administration "2017 Health Center Profile, Health Center Program Grantee Profiles" website: <https://bphc.hrsa.gov/uds/datacenter.aspx?q=d&year=2017&state=HI#glist>, combining the three health center profiles for comparison.

^aKokua Kalihi Valley profile: <https://bphc.hrsa.gov/uds/datacenter.aspx?q=d&bid=093410&state=HI&year=2017>.

^bLāna'i Community Health Center profile: <https://bphc.hrsa.gov/uds/datacenter.aspx?q=d&bid=0931570&state=HI&year=2017>.

^cWest Hawai'i Community Health Center profile: <https://bphc.hrsa.gov/uds/datacenter.aspx?q=d&bid=0924640&state=HI&year=2017>.

^dBased on Centers for Medicare & Medicaid Services (CMS) Measure ID CMS165v5 (NQF Number 0018): <https://ecqi.healthit.gov/ecqm/measures/cms165v5>.

^eBased on Centers for Medicare & Medicaid Services (CMS) Measure ID CMS122v5 (NQF Number 0059): <https://ecqi.healthit.gov/ecqm/measures/cms122v5>.

Table 2. Interview Themes, Subthemes, and Representative Quotes	
Theme 1: CHWs made multiple internal and external linkages	
Subthemes: Building internal and external linkages <ul style="list-style-type: none"> • Bridging community and clinic • Resource referrals related to social determinants of health • Internal and external resources • Resource networking <p>-----</p> 1422: National Diabetes Prevention Lifestyle Change Program <ul style="list-style-type: none"> • Program delivery • Community-clinical linkages <p>-----</p> 1422: Self-measured blood pressure monitoring programs <ul style="list-style-type: none"> • Program delivery • Home visits and monitoring • Community-clinical linkages 	Representative Quotes: <i>"I do medical insurance through QUEST^a and the Affordable Care Act. I do smoking cessation. I do both the diabetes prevention program and the high blood pressure. What else? I do translation for them. I do... financial aid and the SNAP^b program with them. And housing application as well." – A CHW</i> <p>-----</p> <i>"...for a CHW, for myself a big part of it is I also have pre-diabetes, so encouraging like the people in our group to work together. So planning extra activities like a walk or a bike ride and let's do this together." – A CHW</i> <p>-----</p> <i>"We have Zumba, yoga, Tai-Chi. We have senior Tai-Chi, senior chair Yoga so a variety of classes for a variety of age groups. So whatever they think will work best for them or how they can best get out of it for either their blood pressure or their diabetes or pre-diabetes. Whichever class they think will fit best for them we offer." – A CHW</i>
Theme 2: CHWs face multilevel barriers in making community-clinical linkages	
Subthemes: Patient barriers <ul style="list-style-type: none"> • Cultural barriers • Individual barriers <p>-----</p> Contextual barriers <ul style="list-style-type: none"> • Geographic and clinic isolation • Economic barriers 	Representative Quotes: <i>"I didn't realize that a big part of the influence here really is the way we grew up. Because we come from plantation style living and it's different. It's a lot of cultural things." – An administrator</i> <i>"Like for example for coming from the men for my place the Chuukese men, when they heard of Hula and their mind thinking it's for women only because they shake their booty, they don't want to do that. And then when Kumur^c introduce the kind of dancing with the similar to our cultures like canoeing." – A CHW</i> <p>-----</p> <i>"[B]ecause we're so isolated, that we're almost like a one-stop ... place here yeah. Like a one-stop-shop. So we do everything from pre-K to Kupuna,^d so that's health education in the schools." – A CHW</i> <i>"[W]e have an 80 mile corridor for heaven's sake." – An administrator</i> <i>"One of our barriers within the context of managing those diseases is the limited access to food and the cost of food. And I know occasions where we've had people come over for food demonstrations, they're going to go to the market and buy the appropriate food, they don't bring enough budget and they come back and they go, how does anybody eat on this island?" – A CHW</i>
Theme 3: CHWs have unmet professional needs related to community-clinical linkages	
Subthemes: Education and knowledge <ul style="list-style-type: none"> • Education on specific diseases • Resource networking <p>-----</p> CHW burnout <ul style="list-style-type: none"> • Number of roles CHW asked to play due to funding structure 	Representative Quotes: <i>"...What we do is the basic and share T2^e even for our patients with the diagnosis of diabetes or chronic disease because that's what we have. That's our education and our background right now. So to go into more detail for ... I'll just use an example for like a Filipino man that his BMI^f is 18 but his A1C^g is high. We can't tell him to lose weight so we need to tell him to eat more healthy but we can't make those recommendations. So I would like to know how or learn more about diets... The carbs to so-and-so ratio that stuff." – A CHW</i> <p>-----</p> <i>"They each are trained in all of the different things because it doesn't make sense for us to assign one to one group and another to another group. We're small, but they reach different people, so if you're trying to cover the whole population, then you've gotta train them all in everything." – An administrator</i>
Theme 4: Reimbursement and payment mechanisms are an all-encompassing challenge to CHW sustainability	
Subthemes: Challenges <ul style="list-style-type: none"> • Position funding structure and grantmaking • Current reimbursement structure <p>-----</p> Opportunities <ul style="list-style-type: none"> • Statewide policies on reimbursement • Certification to reimbursement pathway • Other payment mechanisms (eg, global payment) 	Representative Quotes: <i>"If some of this reform would actually pay for care coordination, well, it is, but it's limited only to Medicare and it's only 40 bucks a pop, so it barely pays for anything." – An administrator</i> <p>-----</p> <i>"We really are going to run into a crisis in doing some of the things that CDC^h has asked because I don't see a financing system through the delivery system. I do see greater value in having us work much more closely with the Department of Health, the public health sector and employers to make this work but having it all on our shoulders and suddenly deciding that we're going to be the ones to make this work, when it's actually lifestyle changes." – An administrator</i>

aQUEST: The State of Hawai'i "Med-QUEST" low-income adults and children health insurance plans. ^bSNAP: US Department of Agriculture Supplemental Nutrition Assistance Program. ^cKumu: In this case, refers to a kumu hula, or a hula teacher. ^dKupuna: A grandparent or elder. ^eT2: Refers to the US Centers for Disease Control and Prevention Prevent T2! National Diabetes Prevention Program lifestyle change program curriculum. ^fBMI: Body mass index. ^gA1C: Refers to hemoglobin A1c, a measure of blood sugar. ^hCDC: US Centers for Disease Control and Prevention

Table 3. Community-clinical Linkages Provided by CHWs	
Linkage Location	Linkages
Community linkages related to 1422	<ul style="list-style-type: none"> • 211 referrals • Blue Zones^a qualified retailers • Food banks • Ornish^b diet providers • Physical activity providers/opportunities (eg, fun runs, fitness classes) • Veggie Rx^c program/SNAPd recipients • Wellness classes
Internal linkages or programming related to 1422	<ul style="list-style-type: none"> • Behavioral health specialists (individual and group) • Bicycling program • Dance/exercise classes (eg, hula, yoga, or Zumba) • Farmer's market and "Double Bucks"^e • Food/cooking demonstrations and education • Telemedicine • Tobacco cessation • Urban farm
Other resource linkages	<ul style="list-style-type: none"> • Farm sites • Legal aid/immigration assistance • Housing and Section 8 counseling • Child care assistance • Pharmacist • Other diabetes prevention program • Sewing program • Utility payment assistance

^aRetailers participating in the Blue Zones Project. ^bOrnish Lifestyle Medicine providers. ^cFruit and vegetable "prescriptions". ^dUS Department of Agriculture Supplemental Nutrition Assistance Program. ^eDoubles food stamp amounts (up to a certain amount) for shopping at farmers' markets

Table 4. Additional CHW Roles Unrelated to CDC 1422 Grant	
Direct Services	
<ul style="list-style-type: none"> • Behavioral health counseling (individual and group) • Family planning • Flu vaccination drives • Glucose monitoring • Screening at community and employer venues • Perinatal support services • Tobacco cessation • Translation and interpretation (informal and medical) • Youth group/counseling 	
Program Eligibility/Application	
<ul style="list-style-type: none"> • Dental insurance • Food Stamps/EBT • Housing and Section 8 eligibility • Immigration assistance (COFA^a/DACA^b) • Insurance eligibility and enrollment (ACA^c and Med-QUEST^d/Medicaid) • Medication assistance (ProCare Rx/340B)^e • Welfare/TANF^f applications 	
Outreach & Education	
<ul style="list-style-type: none"> • Education and outreach at homeless shelters • Fall prevention/education • Health/STI^g education in schools • Outreach at community and employer venues • Patient outreach in-person or over the phone 	
Other Duties	
<ul style="list-style-type: none"> • Documentation of patient interaction 	

^aCompact of Freely Associated States (includes people from the Federated States of Micronesia, the Republic of the Marshall Islands, and Palau). ^bDeferred Action for Childhood Arrivals, or undocumented children brought to the US by parents. ^cAffordable Care Act. ^dState of Hawaii. ^e"Med-QUEST" low-income adults and children health insurance plans. ^fPrescription fulfillment and processing for Health Resources and Services Administration FQHCs. ^gTemporary Assistance for Needy Families. ^hSexually transmitted infections.

Theme 3: CHWs Have Unmet Professional Needs Related to Community-clinical Linkages

CHW professional needs and concerns directly related to the first theme, of CHW roles and linkage-making, as well as the fourth theme, of funding, discussed further below. An administrator reflected on the knowledge required to fulfill the many roles CHWs play:

"[I]t is a huge learning curve because you are working so broadly with patients and community members that it's almost like you have to know a little bit of everything but not be an expert in it. And that's a lot to hold. So there's always this kind of learning curve, they're always like, 'oh I need to learn this, I need to learn this' and it's a lot. So, I think that's the challenge of the community health worker."

Administrators and CHWs discussed wanting more opportunities for education and networking in order to facilitate more linkages, and ways of bridging this knowledge gap. One such opportunity was "lunch and learn" trainings at the clinic. Another was the CHW certification program offered at community colleges across the state. Although some CHWs had completed the certification program, administrators mentioned that accessing distance learning programs was a problem. Another administrator said CHW certificate students experienced conflicts in scheduling practicum hours because their current workplaces had shifting schedules, which affected program participation and completion. These issues led one FQHC to develop its own CHW on-the-job training program to address specific health needs of the community. Tangentially, this led CHWs and administrators to mention issues related to burnout. A CHW put this succinctly: *"I want to say it's a 24/7-hour job because we live in the communities that we serve... that's one thing that I would like people to know is that it's a non-stop position. We get stopped like on our Costco errand and asked for a resource..."* The health centers have addressed the issue of burnout by holding boundary-setting trainings for CHWs, and creating formal opportunities for connection through sharing meals with clients and making the work more enjoyable for CHWs. Lastly, weekly debriefings between CHWs and clinic staff was another way to manage burnout and to troubleshoot issues with patients.

Theme 4: Reimbursement and Payment Mechanisms are an All-encompassing Challenge to CHW Sustainability

Challenges with, and opportunities for, reimbursement and payment, was the final theme, which touched on the multiple issues mentioned above. Obtaining enough funding for a full-time position required CHWs to not only increase community-clinical linkages, but also to fulfill a number of roles, including delivery of 1422 grant-related and non-related interventions:³⁰ *"[I]f we follow the [1422 grant CHW] job description... we'd have a dysfunctional community health worker 'cause it would be too narrow. We have three or four funding sources that have allowed us to get community health workers."* CHW positions were funded by multiple grants, including tobacco funds, pre-natal support services, Special Supplemental Nutrition Program

for Women, Infants and Children funds, and a Department of Health & Human Services grant. One administrator noted: “[E]ventually [the] tobacco grant is going to run its course. This grant is going to run its course. So it’s kind of like, if we don’t get some kind of payment reform, what are we gonna do? Because we need these workers” and continued, “It’s a struggle every time a grant ends.” The plethora of funding streams and requirements made CHWs feel “pulled every which way” and as though they “have to do a little bit of everything,” which was related to CHW’s experiences of burnout. The need to cross-train CHWs to stand in for each other in case of illness or absence amplifies this effect. As grants begin or end, the role of the CHW also changes. Lastly, another administrator mentioned CHWs sometimes provide critical, unreimbursed services, such as medical interpretation, when insurance-contracted translators are unavailable during patient appointments:

“I think that the funders need to know that the insurance companies, they’re supposed to pay for interpretation and things like that, but when the patients go to the appointments, the specialist appointments, [the interpreters] are not there. We are actually sending our CHW with the patient and they explain all these things that needs to be done, but we don’t get paid for it.”

In fulfilling diverse functions like translation, outreach, and service provision, CHWs helped FQHCs pivot to being more community-centered. One administrator stated: “[W]e needed to [move] from patient-centered to more community centric... it was really key...for most of the community health centers to really speak the language, to be cultural liaisons, be patient advocates, be facilitators of resources within the community.” To sustain CHW positions, administrators offered a number of potential solutions: “I think that’s where we need to move is towards statewide policies that really support the CHW... We need something at the legislative level that would support that as a legitimate position and role, that would actually get paid.” One administrator expressed concern that if CHW certification was the main route to reimbursement, challenges in CHWs accessing certification programs could result in unreimbursed CHWs, especially in rural areas. Global payment mechanisms or having both public and private insurers pay for chronic care management may be paths to sustainability. However, all administrators agreed change is required to adequately reimburse the workers who fill this vital role.

Discussion

The evaluation findings reveal how CHWs successfully supported community-clinical linkages for a number of health-related determinants and conditions, including diabetes prevention and hypertension management. CHWs were instrumental in the cultivation and/or development of internal or external resources, including exercise or education programs for patients, including those with prediabetes and hypertension. For patients in general, CHWs assisted with linkages to needed resources to overcome some of the social determinants of poor health. The specific community-clinical linkages offered in Hawai‘i reflect many of the diverse interventions and program linkages CHWs

implement nationally related to maternal and child health, cancer prevention and screening, fall prevention, diabetes prevention and management, and hypertension management.³² It is unclear from the literature, however, how CHWs form these linkages or maintain them.¹ In this study, CHWs reported they refer to internally available resources, known external resources, and also work through their own external networking efforts. CHWs noted a need for additional resources to refer clients to, and said they would like to receive further networking support with community organizations to help extend the net of referral services.

The geographic locations of clinics affected CHW work. Rural and urban settings had different needs and available resources. The staff at one isolated clinic created their own internal resources in order to facilitate lifestyle change for clients, a step beyond the community-clinical linkages model, because nothing was available in the community. Although all FQHCs employ a community-centered model,³³ more funds are needed to ensure that health centers in low-resource areas are able to create, grow, and sustain programs internally to fill existing resource gaps. This may include funding to hire physical activity specialists to supplement the work of CHWs. As one of the deliverables over the course of the grant, FQHC staff (including CHWs) networked with one another, strengthening networks and linkages. Although not discussed in the interviews, funders of CHW interventions may want to consider providing additional networking opportunities across clinics to address locating and accessing resources.

Systemic and funding issues have policy implications. Administrators and clinicians in this study mentioned the need for stable funding and reimbursement environments for FQHCs to engage CHWs and to support the CHW workforce to meet FQHC patients’ complex, diverse needs on a consistent basis. The literature reflects these concerns.^{14,34-36} Educational opportunities beyond certification were mentioned as an outstanding need. Some Hawai‘i-tailored training courses for CHWs related to diabetes management³⁷ and hypertension³⁸ already exist. Funders should consider assisting the expansion of these training courses and providing travel assistance to support CHWs’ attendance. Additionally, certification program staff with distance learning experience could assist in providing online training options. Lastly, certification programs that included a distance-learning component and practicum matching prior to program start were needs mentioned by CHWs, administrators, and clinicians. A number of states have certification mechanisms and standards, but only Minnesota has established a means for Medicaid reimbursement for certified CHW services.³⁹ Concerns persist that rural CHWs may not be able to access certification programs, leaving CHWs non-reimbursable and rural FQHCs without CHWs. Medicaid 1115 waivers may provide funds for “experimental, pilot, or demonstration projects” related to CHW services, but these projects would still need to find sustainable funding sources.⁴⁰ Reimbursement from other federal funders (eg, the Health Resources & Services Administration) should be explored. Nevertheless, stakeholders, FQHCs, and CHWs will need to work together to develop payment models that

recognize the important, diverse contributions of CHWs and support FQHCs in covering the cost of compensating a vital member of the care team.

In conclusion, this study found evidence that CHWs are engaged in providing community-clinical linkages in multiple grant-specific contexts. CHWs and FQHCs both create their own resources or connect with other community resources to build networks, but require more assistance and time to develop these networks more fully. To expand CHW knowledge, improved distance-learning opportunities and more topic-specific trainings are required (eg, diabetes management). Reimbursement of CHW activities should be a top priority for key stakeholders, including the HDOH, Medicaid and Medicare, private insurance, educators, and CHWs themselves in order to sustain and grow the field.

Practical Implications

This study points to a number of implications for grant-making entities and payers related to community health workers: (1) CHWs are a valuable community-facing resource for clinics as they reflect the community; (2) The current disease-specific grant structure makes it difficult to sustain jobs for community health workers over time; (3) Opportunities to sustain jobs for community health workers in clinics exist, but will require input from a variety of parties, including CHWs; (4) Funders should consider repurposing existing trainings for distance-learning or provide travel assistance for in-person trainings to help address CHWs' desire to learn more about specific diseases, prevention, and treatment.

Conflict of Interest

The authors report no conflicts to disclose.

Disclosure Statement

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