Integrating Community Health Workers Into a Patient-Centered Medical Home to Support Disease Self-Management Among Vietnamese Americans: Lessons Learned

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There is evidence that patient-centered medical homes (PCMHs) and community health workers (CHWs) improve chronic disease management. There are few models for integrating CHWs into PCMHs in order to enhance disease self-management support among diverse populations. In this article, we describe how a community-based nonprofit agency, a PCMH, and academic partners collaborated to develop and implement the Patient Resource and Education Program (PREP). We employed CHWs as PCMH care team members to provide health education and support to Vietnamese American patients with uncontrolled diabetes and/or hypertension. We began by conducting focus groups to assess patient knowledge, desire for support, and availability of community resources. Based on findings, we developed PREP with CHW guidance on cultural tailoring of educational materials and methods. CHWs received training in core competencies related to self-management support principles and conducted the 4-month intervention for PCMH patients. Throughout the program, we conducted process evaluation through structured team meetings and patient satisfaction surveys. We describe successes and challenges associated with PREP delivery including patient recruitment, structuring/documenting visits, and establishing effective care team integration, work flow, and communication. Strategies for mitigating these issues are presented, and we make recommendations for other PCMHs seeking to integrate CHWs into care teams.

Keywords: *community health worker; patient-centered medical home; Vietnamese American; diabetes; hypertension*

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INTRODUCTION

Reducing the burden of diabetes and risk factors for heart disease such as hypertension is a national public health priority (Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, 2014). Among Vietnamese Americans, 5.3% have been diagnosed with diabetes (Centers for Disease Control and Prevention, 2004), and the prevalence of hypertension has been estimated at 30.8% (Jose, Zhao, Chung, Fortmann, & Palanippan, 2013). The patient-centered medical home (PCMH) framework (National Committee for Quality Assurance [NCQA], 2011) and the chronic care model (Wagner, 1998) that underpins it improve care for chronic diseases (Calman et al., 2013; Coleman, Austin, Brach, & Wagner, 2009; Gabbay, Friedberg, Miller-Day, Cronholm, & Schneider, 2013; Stellefson, Dipnarine, & Stopka, 2013). Community health workers (CHWs)—frontline public health practitioners whose defining attribute is community trust (American Public Health Association A, 2009)—may be uniquely poised to support PCMHs in achieving goals related to improving self-management support (SMS; NCQA, 2011) among diverse populations, which is vital to improving health outcomes among people with chronic conditions (Haas et al., 2012).

BACKGROUND

CHWs have been shown to improve outcomes for diabetes (Shah, Kaselitz, & Heisler, 2013) and hypertension (Brownstein et al., 2007) by conducting a variety of activities (Health Resources and Services Administration [HRSA], 2007) that address disease management and determinants at intrapersonal, interpersonal, community, and policy levels outlined in an ecological framework (McLeroy, Bibeau, Steckler, & Glanz, 1988). For example, they support individuals and families by offering health coaching and social support (HRSA, 2007). They also link patients to community resources (Fulwood, Guyton-Krishnan, Wallace, & Sommer, 2006; HRSA, 2007) to address myriad social issues (e.g., lack of access to reliable transportation and affordable medication) that affect individuals' ability to make lifestyle modifications. Collaborating with community service agencies is consistent with PCMH principles (NCQA, 2011) and may enhance control of chronic conditions (Krakoff, 2006). Community advocacy, another fundamental CHW role, (Eng & Young, 1992) has prompted changes in policies related to social determinants of health (Minkler, Garcia, Williams, LoPresti, & Lilly, 2010) and community infrastructure (e.g., installation of walking trails; Cohen, Meister, & de Zapien, 2004) that may support population-level disease management and prevention.

There is growing recognition of the value CHWs' contributions to team-based care (New England Comparative Effectiveness Public Advisory Council, 2013). Successes of multidisciplinary provider teams in improving disease management (Battersby et al., 2010; Calman et al., 2013) demonstrate that CHWs collaborating with other health professionals can produce positive health outcomes. Evidence that culturally tailored chronic disease management programs featuring CHWs promote retention and acceptability among culturally and linguistically diverse populations (Henderson, Kendall, & See, 2011; Pottie, Hadi, Chen, Welch, & Hawthorne, 2013) suggests that the workforce is exceptionally equipped to support PCMH patient-centeredness goals. CHWs also promote cost savings through disease management support (Brown et al., 2012).

Nonetheless, little is known about models for incorporating CHWs into PCMHs. We describe the iterative development of a pilot program to add CHWs to a PCMH care team to bridge diabetes and hypertension SMS between a medical home in New Orleans, Louisiana, and the surrounding Vietnamese American community. This pilot program—initiated through collaborative efforts of an academic institution, a nonprofit agency, and a PCMH—used the CLEAN Look framework (Meade, Menard, Martinez, & Calvo, 2007) for incorporating culture and literacy into program development, and it aimed to address social determinants of health. We present lessons learned that may be applicable to other PCMH practices serving diverse populations.

METHOD

Study Setting and Design

In 2008, Tulane University and a nonprofit agency cofounded a community health center that serves primarily Vietnamese American patients. In 2009, the clinic achieved NCQA PCMH recognition. From 2010 to 2012, Tulane, the nonprofit agency, and the PCMH staff implemented a CHW-led disease management support program for patients with diabetes and/or hypertension. We employed qualitative methods to elicit input into program design from Vietnamese Americans with diabetes and/or hypertension, CHWs employed by the partner nonprofit agency, and the PCMH care team. The Tulane Institutional Review Board approved all study procedures.

TABLE 1
Overview of Cultural Tailoring of Program

CLEAN Look Checklist Principles	*Patient Resource and Education Program Strategy*
Culture	• Focus groups conducted to inform intervention design • Materials developed for project translated into Vietnamese and reviewed by bilingual, bicultural CHWs • CHWs adapted existing Vietnamese language health education materials to increase linguistic appropriateness
Literacy	• CHWs used visual aids and demonstration to teach concepts to those with low literacy
Education	• Increased bilingual staff and diversity of team by hiring CHWs • CHWs trained to ask patients to do "teach backs" to ensure understanding
Assessment	• Conducted focus groups to assess community needs around diabetes and hypertension • CHWs collaborated on program development • Ongoing process evaluation allowed CHWs and academic team members to troubleshoot challenges with CHW–patient interactions and CHW–PCMH care team integration
Networking	• Collaboration with nonprofit agency facilitated access to its programs and services • CHWs collaborated with existing community agencies to establish points of referral for resources unavailable at nonprofit or PCMH • Developed for nonprofit agency and PCMH a standard procedure manual for hiring, training, and supervising culturally diverse CHWs

NOTE: CHW = community health worker; PCMH = patient-centered medical home.

Program Development

We developed the CHW program using the CLEAN Look Checklist (Meade et al., 2007), which guides public health programs to address five major issues relevant to diverse populations: *c*ulture, *l*iteracy, *e*ducation, *a*ssessment, and *n*etworking. We employed bilingual, bicultural CHWs to connect patients to community resources, serve as cultural mediators, and increase patient self-management capacity. A summary of strategies used to tailor the program is summarized Table 1 and described below.

Focus Groups to Assess Community Needs

We conducted Vietnamese language focus groups to assess intrapersonal, interpersonal, and community- and policy level issues related to disease management among the population, which is primarily Vietnamese-speaking. Academic team members developed a moderator guide in English. A bilingual research team member revised the guide, which was then professionally translated into Vietnamese. The bilingual researcher verified the translation. We pilot tested questions with an initial focus group and made adaptations. The final guide contained 11 key questions focused on disease knowledge and self-management practices, desire for support, cultural issues, community resources, and barriers to care.

Bilingual CHWs recruited PCMH patients and community members who met the following criteria: self-identifying as Vietnamese American, older than 18 years, having a self-reported or documented diagnosis of diabetes or abnormal serum glucose, and/or having a self-reported or documented diagnosis of hypertension or abnormal blood pressure. Bilingual nonprofit agency staff moderated audio recorded focus groups. Participants signed Vietnamese-translated informed consent documents. Participants received a $40 gift card on focus group completion.

Recordings were transcribed in Vietnamese and professionally translated into English. Employing a constant comparison framework (Corbin & Strauss, 1990), two investigators independently read each transcript and used Atlas.ti to code discrete thoughts or concepts.

Further coding was used to group comments into categories. Investigators met to adjudicate differences. A third, bilingual, investigator reviewed the Vietnamese transcripts to verify that codes accurately captured focus group discussions and contextual meanings. Investigators used an ecological framework (McLeroy et al., 1988) to organize comments into themes regarding levels of influences on disease self-management including: intrapersonal factors, interpersonal relationships, community resources, and policy factors. The bilingual investigator reviewed final themes to ensure accuracy.

Community Health Worker Training

The nonprofit agency recruited CHWs to work as part-time agency employees in collaboration with the PCMH. Requirements for employment included local community residence, being bilingual and bicultural, and previous community-based public health experience. An agency staff member served as the CHW coordinator.

Given that CHWs were experienced, we offered a brief, 24-hour training to review information and practice skills. Ten hours focused on CHW competencies (HRSA, 2007), including skills for providing SMS (Battersby et al., 2010) such as problem solving and goal setting. Six hours focused on project-specific information, including protocols, conducting focus groups, and using educational handouts. Two hours each were spent on diabetes and hypertension. A 4-hour module on mental health was included based on evidence supporting integration of psychosocial support into medical homes to improve disease management (Jortberg, Miller, Gabbay, Sparling, & Dickinson, 2012) and focus group results, described below. Learning exercises including discussion, role-play, and interactive activities were designed to draw on participant knowledge and life experiences and promote peer learning. Key training elements are summarized in Table 2. A total of seven CHWs, including the CHW coordinator, completed the training, and six participated in the pilot program.

Patient Resource and Education Program

Based on focus group results, project partners created the Patient Resource and Education Program (PREP), a 4-month pilot CHW intervention. CHW activities included building patient self-management capacity through individual and family education, collaborative goal setting, providing links to supportive community resources, basic interpretation, patient and community advocacy, and interacting with health care providers.

CHWs selected and reviewed all patient education materials to ensure cultural relevance. We adapted wording of Vietnamese documents that were congruent with the local dialect. To accommodate limited literacy, we used handouts with colorful diagrams and simple language and visual aids such as replicas of common culturally appropriate foods.

Patient Recruitment. Vietnamese American adult PCMH patients with hypertension or diabetes were identified through the electronic health record (EHR). CHWs contacted eligible patients by phone and identified themselves as employees of the nonprofit agency working with the PCMH. They explained the purpose and structure of PREP and invited patients to participate. Each CHW recruited between four and six patients.

CHW–Patient Interaction. CHWs conducted four monthly 1-hour home visits for each patient. Prior to initial visits, the PCMH sent CHWs a patient health overview that included most recent body mass index, blood pressure, and hemoglobin A1C levels; current medications; and date of last provider visit. CHWs used an open-ended questionnaire to explore patients' disease management practices and barriers and need for support. CHWs then provided patients and family members with tailored health coaching. CHWs called patients weekly to troubleshoot challenges and offer support.

CHW–Clinical Team Integration. Prior to launching PREP, academic team members hosted a meeting with CHWs and PCMH staff. The meeting included a team-building exercise, an overview of PCMH quality improvement goals, a description of CHW roles, and protocols for CHW–PCMH integration.

A structured system was created to facilitate communication between PCMH staff and CHWs. Each CHW was paired with a medical office assistant (MOA) who served as the primary PCMH contact. MOAs assisted with scheduling appointments, answering general questions about PCMH services, and connecting CHWs with patients' primary care provider and care team pharmacist. CHWs used a secure electronic spreadsheet to track patient health concerns, education provided, and referrals made to local programs to address patient-identified community and policy issues affecting disease management. MOAs attached these logs to patient EHRs for use by providers. In-person communication about patients included twice-monthly case conference meetings between providers, MOAs, and CHWs. Team members troubleshot patient challenges,

TABLE 2
Community Health Worker Training Overview

Community Health Worker Competency	*Topics Covered Through Interactive Learning*[a]	*Training Time, Hours*	*Facilitator*
Communication, interpersonal skills, and organization	Verbal and nonverbal communication Active listening Limitations and boundaries Building trust with clients Time management and setting priorities Record keeping and documentation Safety Managing stress and self-care	4	Academic partner
Capacity building, teaching, and service coordination	Client interviews Stages of behavior change Setting goals and developing behavior change plans Helping clients solve problems Basic teaching skills Identifying community resources and making referrals Overcoming barriers in accessing resources	4	Academic partner
Advocacy	Health disparities Social determinants of health Advocating for patients and communities	2	Academic partner
Project-specific information	Conducting focus groups Use of educational handouts Project protocols	2 2 2	Academic partner
Health knowledge base: mental health	Depression overview Providing education about mental health Handling mental health emergencies	4	Academic partner
Health knowledge base: diabetes	Diabetes overview, symptoms, diagnosis, complications HbA1C goals Common medications for diabetes Lifestyle coaching for diabetes Maximizing the clinic visit	2	PCMH medical director
Health knowledge base: hypertension	Hypertension overview, symptoms, diagnosis, complications Blood pressure goals and self-monitoring Common medications for hypertension Lifestyle coaching for hypertension Medication reconciliation	2	PCMH clinical pharmacist

NOTE: HbA1C = hemoglobin A1C; PCMH = patient-centered medical home.
a. Interactive learning techniques included discussion, role-playing, problem solving, kinesthetic activities, and group exercises.

identified solutions, and discussed possible modifications to clinical care.

Program Evaluation

Case Conference Meetings. During case conference meetings, CHWs and the clinical team discussed challenges and possible solutions to issues with team work flow and communication. The CHW coordinator recorded notes, which were shared with academic team members for review during project team meetings.

Project Team Meetings. Academic team members and the CHW coordinator met monthly to conduct process evaluations and make program adaptations. CHWs and clinical staff joined meetings whenever possible. Meeting minutes were taken to document input. The CHW coordinator spoke weekly with each CHW about experiences carrying out PREP and presented this information during meetings. Team members then brainstormed solutions to problems and identified additional resources to support CHWs and patients. Project team meetings also explored challenges and successes with CHW–PCMH care team integration. Academic team members collaborated with CHWs and the PCMH staff to clarify and adapt project protocols around team member roles, support for CHWs, and communication.

PREP Participant Satisfaction Survey. A brief survey was administered to PREP participants on program completion. Participants rated on a 5-point Likert-type scale (1 = *very dissatisfied*, 5 = *very satisfied*) satisfaction with patient education materials and various aspects of CHW support. A similar scale (1 = *strongly disagree*, 5 = *strongly agree*) was used to assess perceived value of interaction with CHWs and value of the overall program. Participants provided qualitative responses about program influences on disease management.

RESULTS

Focus Group Discussions

Forty-seven people joined one of five diabetes focus groups and 30 people attended one of four discussions on hypertension. Participants' mean age was 60.9 (*SD* = 7.9), and 57.1% were female. Findings are summarized in Table 3.

Participants demonstrated knowledge and misunderstandings about diabetes and hypertension. They identified etiologies of disease as dietary habits, heredity, fate, advancing age, and stress. They described some disease consequences and reported that lifestyle modification, medications, and emotional well-being were important for controlling medical conditions. However, they had varying perceptions about whether individuals are capable of controlling disease. Participants generally expressed favorable attitudes toward Western medicine, but perceptions were mixed regarding the necessity of consistent medication use. Participants desired nutrition education. Some respondents doubted that education alone would change behavior.

Interpersonal relationships were thought to affect disease management. Participants said trusting relationships with health care providers promoted self-care. Social interactions with peers motivated physical activity but deterred healthy eating. Respondents expressed that their disease posed a threat to family roles and responsibilities.

Participants described local environmental and health policy issues as barriers to disease self-management. These included insufficient prescription coverage and difficulty accessing local human services due to lack of trained medical interpreters and scarcity of clinics and hospitals. Barriers to lifestyle modifications were thought to be inadequate outdoor recreation spaces and lack of convenient grocery stores.

Patient Resource and Education Program

PREP Participant Satisfaction Survey. Thirty-four people enrolled and 31 completed the pilot program. CHWs supported 17 patients with hypertension. The mean age was 57.6 (*SD* = 6.7) and 70.6% were female. CHWs also provided services to14 patients with diabetes. The mean age for this group was 63.0 (*SD* = 8.5). Nearly two thirds were male. Three patients did not complete PREP. One died and 2 withdrew because they did not believe the intervention was useful. The 26 participants who completed an exit survey reported positive impressions of PREP. Over 90% of participants reported being satisfied with health education materials and CHW reliability, helpfulness, knowledge of chronic disease, health coaching, and interpreting. Similarly, over 90% of respondents agreed that PREP met expectations and taught them better chronic disease management and that CHW in-person meetings and phone calls were helpful. Qualitative themes included that the program influenced dietary modifications, home self-monitoring of blood pressure and blood glucose, and medication adherence. Some participants noted that PREP prompted behavior changes among family members who participated in home visits.

TABLE 3
Summary of Focus Group Findings

Focus Group Themes	*Illustrative Quote*
Intrapersonal factors: knowledge, attitudes, and behaviors	
Knowledge about etiology of disease	
Stress	"Thinking too much."
Heredity	"Part of it is hereditary, but also because we put salt in everything we eat."
Diet	
Age	"You have it when you are over 50. The ones who do not have it are in the minorities."
Knowledge about consequences of disease	
Stroke	"My biggest fear is to have a stroke."
No problems	"It did not affect my life at all . . . no problem."
Eye damage Swelling Amputations	"Damages the eyes, it causes swelling on the legs, and sometimes you can have your legs or hands amputated."
Knowledge, behaviors, and attitudes related to self-management	
Exercise	"If I slack off on my exercises, it (blood pressure) goes up."
Diet modification	"Truly, if we are sick, we have to watch what we eat."
Use of medication	"I take my medications according to the doctor's prescriptions."
Mental/emotional wellness	"We have to have a happy medium . . . if we get too upset, the sugar goes up."
Need to practice self-care	"We should not wait until we are near dead then run to the doctor. We should be our own doctor."
Nothing one can do	"We are not doctors, and there is nothing we can do."
Knowledge, behaviors, and attitudes related to medication use	
Short-term use	"I took the medicine for just a few months. Then I went to the doctor. They measured me again and said I don't have high blood pressure. So I stopped taking the medicine."
Long-term use	"Just because the sugar goes down that does not mean you can stop the medicine."
Have to take Western medicine	"For high blood pressure and high cholesterol, you have to take the Western medicine."
Traditional medicine does not work for chronic conditions	"Chinese medicine is useless."
Attitudes about self-management education	
Already know what to do	"As far as telling people what to do, what not to do, they already know that. Some people can follow that, some people cannot."
Need to learn diet control	"We need someone to show us a diet to follow."
Interpersonal factors: relationships and disease self-management	
Respect for health care providers	"I only listened to my doctor. I did not use any other treatments."
Social interactions increase knowledge and exercise	"Everybody have some ideas. When they go home, they have learned something, understand something more."
	"I keep going to exercise to be happy and to see my friends."
Social/family interactions deter healthful diet	"I crave when I see others eating."
Disease affects family roles and responsibilities	"We have to think about its consequences . . . how it affects the family life, relationship between husband and wife, your behavior."
Community and policy factors: barriers to care	
Doctors	"There is only one doctor"
Interpreters	"We need interpreters at the hospitals, interpreters for food stamps matters, interpreters for Medicare papers."
Safe outdoor recreation space	"Right now it is unsettled to go outside."
Supermarket	"We need a big market."
Medicare and other assistance programs do not meet needs (e.g., cost of prescriptions)	"I have to take 2 pills a day and at $4 a pill that's $240 a month. Things are very hard for us. Even for the people with Medicare, Medicaid, they see their benefits reduced also."

Care Team and Project Team Process Evaluation of PREP. Care team and project team meetings revealed program successes and challenges, which are summarized in Table 4. CHWs described difficulty with recruitment through "cold-calling" people identified through the EHR. Patients were hesitant to commit to

TABLE 4
PREP Program Process Evaluation

Program Activity	*Successes*	*Challenges*	*Proposed Solutions*
Patient recruitment		Using patient registry for "cold calls" 4-month time commitment Lack of social/financial incentives	Providers generate referrals for patients who they deem need more self-management support in the home environment "Warm handoffs" to introduce CHWs as care team members offering PCMH services
CHW–patient Interactions	Positive feedback on cultural appropriateness of patient education	Structuring communications around nutrition, physical activity, and medications	CHW encounter template to document 1. Social assets, barriers, and support needs 2. Medication adherence 3. Dietary and physical activity patterns 4. Self-monitoring and goal setting 5. Education administered
		Cultural stigma of depression	Primary care and mental health integration within the PCMH
		Lack of group education	PCMH group visits and community-based group education for disease management
CHW care team integration	CHWs educated about PCMH services (e.g., pharmacy assistance); specialty care & health care facilities	Establishing routine case conferences	CHWs should be full-time PCMH employees fully integrated into to care team structures with
	PCMH providers informed about issues needed to tailor individual care	Coordinating part-time CHWs	1. Detailed job descriptions defining their roles within the PCMH as well as health advocates/resource navigators in the surrounding community
	CHWs educated on how to report information useful for care team clinical decision making	Work flow inefficiency related to processing referrals to CHWs working at an external agency and duplication of MOA and CHW efforts to document care	2. Access to the medical records to document information that contributes to overall care plan

NOTE: PREP = Patient Resource and Education Program; CHW = community health worker; PCMH = patient-centered medical home.

PREP due to the 4-month time requirement, lack of financial incentives for participation, and confusion about how CHWs interacted with the PCMH staff.

CHWs reported developing good rapport with patients. Initial interview questionnaires were perceived to be useful for assessing needs, but CHWs were

unsure how to structure conversations during subsequent meetings. CHWs received positive patient feedback about the quality and cultural appropriateness of education materials. However, CHWs reported feeling unprepared to answer specific questions, and they requested additional strategies for teaching patients about nutrition and pharmacotherapy. According to CHWs, depression symptoms were common among patients and hindered self-management. Although CHWs had received training on providing education about depression and referrals to resources, cultural stigma associated with mental health precluded them from discussing the topic directly.

There were several challenges to CHW–PCMH team integration, including CHW attrition. Medical staff reported difficulty coordinating meetings with multiple part-time CHWs and insufficient time for twice-monthly case conference meetings. However, meetings were productive when they occurred. Providers offered CHWs resources for physical activity, pharmacy assistance, and specialty referrals. Information CHWs conveyed about patients resulted in adaptations to clinical care.

In terms of work flow, team members noted that efficiency would have improved if CHWs, rather than MOAs, added patient encounter logs to the EHR. CHWs struggled to complete documentation promptly, and the additional time required for MOAs to upload patient information delayed provider access to patient logs. Some information CHWs reported was not relevant to clinical decision making. The care team requested that CHWs collect data on medication use, disease self-monitoring, and physical activity levels. Providers perceived that identifying participants through the EHR did not target patients most in need of support so the care team developed a process to refer patients with poorly controlled disease to CHWs. However, creating an efficient referral system was challenging because CHWs were located off-site, without access to the PCMH EHR.

Clinical staff did not understand the full range of roles that CHW can fill. Specifically, they were unaware that CHWs' duties could include community resource navigation and advocacy. Instead, they perceived CHWs' major function to be providing basic health education. Providers expressed concern that education might duplicate coaching conducted by the PCMH's clinical pharmacist through medical interpreters. CHWs believed this misunderstanding hindered their ability to contribute to team-based care, support patients in seamlessly accessing community resources, and advocate to address social determinants of health.

DISCUSSION

This study documents an iterative process of developing a pilot intervention employing CHWs as an extension of a PCMH to support diabetes and hypertension self-management among Vietnamese Americans. The CLEAN Look Checklist (Meade et al., 2007) was used to guide tailoring of the program. Evidence-based principles of SMS (Battersby et al., 2010) were employed in program design. Input from patients, CHWs, and members of the clinical staff resulted in a culturally tailored intervention.

Although results from focus groups were consistent with previous studies of Vietnamese Americans with regard to disease knowledge (Mull & Mull, 2001; U.S. Department of Health and Human Services. National Heart, Lung, and Blood Institute, 2003), desire for self-management education (Truong et al., 2011), and medication use (Lam, 2008), they provided unique insight into program development. Positive impressions of health care providers and Western medicine suggested that a PCMH-based intervention would be acceptable, and patient input informed the need for behavior change planning and problem solving. These were incorporated into the intervention to address barriers to healthy lifestyles and mental health.

Challenges identified during this pilot program prompted development of adaptations and recommendations that may apply to other PCMH practices. A major recommendation is to co-locate CHWs in PCMH practices as full-time employees, as this arrangement may minimize attrition and facilitate relationship development between CHWs and other staff. Providers' limited time to attend additional meetings indicated that CHWs should be integrated into existing communication structures. Allowing CHWs limited EHR access may improve communication and efficiency. Co-location may encourage patient uptake of SMS services and convey that CHWs are key team members. However, PCMH-based CHWs must not be relegated working exclusively within the health care setting. Instead, a significant portion of their time should be invested in community-based activities, which are essential for maintaining trust and addressing determinants of health at all levels of the ecological model.

We agree with recommendations to train supervisors on the CHW model, (New England Comparative Effectiveness Public Advisory Council, 2013) and further suggest that all team members be trained on each position's activities, which is an important component of PCMH practice transformation (NCQA, 2011). In this

case, a more extensive orientation may have enabled CHWs to practice a broader scope of activities in order to address community- and policy-level issues of concern to the population.

CHWs' challenges with conducting patient education indicated that our training was insufficient, even among CHWs with significant community-based public health experience. Some difficulties were overcome through ongoing mentorship and support of the PCMH clinical staff. However, a more thorough training would have been preferable. We subsequently collaborated with community stakeholders to develop an expanded, 80-hour CHW capacity building program described elsewhere (Wennerstrom, Johnson, Gibson, Batta, & Springgate, 2014) that serves as a local resource for supporting CHWs. PCMHs hiring CHWs should ensure that these employees receive extensive, competency-based training, from established capacity development programs (CHW National Education Collaborative, http://www.chw-nec.org/index.cfm).

An additional lesson is the importance of adapting programming based on team input. Feedback from CHWs and providers was critical to understanding the need for a simple tool to lend structure to CHW–patient encounters. A brief guide was created to ensure that all visits included discussions about (a) social assets, barriers, and support needs; (b) medication use; (c) dietary and physical activity patterns; (d) self-monitoring and goal setting; and (e) education topics covered during health coaching. Information gathered was sent to MOAs for upload to patient EHRs. The guide was sufficiently simple that CHWs still had time and flexibility to address individual needs. Future programs may consider making similar adaptations based on team suggestions. It is imperative that any documentation tools created are very simple to use so that providing personalized support, rather than completing documentation, is CHWs' primary focus.

Positive patient feedback suggests that the program was generally culturally appropriate. However, CHWs reported that group education sessions may have been more appealing than home visits. Group medical appointments or community-based learning may be appropriate for PCMHs serving populations that prefer community-, rather than individual-oriented information. Stigma associated with mental health was initially underestimated. Academic team members attempted to address this issue by providing CHWs with additional information on problem solving and activity planning to help motivate depressed patients, without actually discussing mental health. The importance of preparing CHWs focused on SMS to address comorbid mental health conditions in a culturally appropriate fashion cannot be overstated.

This study has several limitations. Focus groups may not have elicited the full range of the target population's ideas and experiences. Participants may have differed from the general population of diabetic and hypertensive Vietnamese Americans in New Orleans, and findings may not be generalizable to other Vietnamese American communities. PCMH patients may have described unusually positive impressions of health care providers and Western medicine. Some concepts could have been misinterpreted during translation of the focus group moderator guide and transcripts, and there is no guarantee that translations were completely accurate. To mitigate these limitations, we employed several recommended practices for conducting cross-language qualitative research (Squires, 2009), including using a professional translator, having a bilingual team member review translations for conceptual equivalence, and pilot testing the interview guide.

This case study describes only one experience. Participant satisfaction may be overestimated if people who did not complete the program or final survey were dissatisfied. For this pilot study, we did not track pre- and postintervention clinical indicators. Nonetheless, we developed a culturally tailored program that was acceptable to patients and providers and developed a framework for CHW–PCMH care team integration.

CONCLUSIONS

The ongoing collaboration between program partners, use of an existing framework for developing tailored interventions (Meade et al., 2007) and incorporation of evidence-based principles for SMS (Battersby et al., 2010) facilitated the design and execution of a program that was culturally and linguistically appropriate. Our program development processes are replicable, are scalable, and may be relevant to other medical homes seeking to integrate CHWs. We recommend eliciting input from stakeholders through iterative processes, in-depth training for PCMH staff on the roles of each position, comprehensive CHW training including strategies to address comorbid conditions, limited EHR use for CHWs, and co-location of CHWs. In addition to supporting individual patients, CHWs must also be given protected time to conduct community-based activities that address community and policy determinants of health.

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