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Catalyzing Implementation of Evidence-Based Interventions in Safety Net Settings: A Clinical–Community Partnership in South Los Angeles

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This study is a process evaluation of a clinical–community partnership that implemented evidence-based interventions in clinical safety net settings. Adoption and implementation of evidence-based interventions in these settings can help reduce health disparities by improving the quality of clinical preventive services in health care settings with underserved populations. A clinical–community partnership model is a possible avenue to catalyze adoption and implementation of interventions in safety net settings amid organizational barriers to change. Three Federally Qualified Health Centers in South Los Angeles participated in a partnership led by a local community-based organization (CBO) to implement hypertension interventions. Qualitative research methods were used to evaluate intervention selection and implementation processes between January 2014 and June 2015. Data collection tools included a key participant interview guide, health care provider interview guide, and protocol for taking meeting minutes. This case study demonstrates how a CBO acted as an external facilitator and employed a collaborative partnership model to catalyze implementation of evidence-based interventions in safety net settings. The study phases observed included initiation, planning, and implementation. Three emergent categories of organizational-level facilitators and barriers

were identified (personnel capacity, professional development capacity, and technological capacity). Key participants and health care providers expressed a high level of satisfaction with the collaborative and the interventions, respectively. The CBO’s role as a facilitator and catalyst is a replicable model to promote

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Authors’ Note: *The authors would like to acknowledge and thank the University of Southern California evaluation team (Tahirah Farris, Breanna Morrison, Alison Spindler, Rigoberto Bejarano, Gabrielle Green, Leigh Ann Haley, Judy Huang, and Stephanie Hedt), who helped with data collection, and Community Health Councils staff (Lucy Montoya, Catherine Sepulveda, and Annie Park), who facilitated the clinical preventive services meetings. The authors are also grateful to the participants of the Federally Qualified Health Centers for their time and effort and appreciate the invaluable feedback provided by Isabela Lucas and other ICF International staff on an earlier draft of the manuscript. This study was supported by a Racial and Ethnic Approaches to Community Health Demonstration Grant (002126-00001) from the Centers for Disease Control and Prevention (CDC). The writing of this article was also supported by a grant (T32HS00046) from the Agency for Healthcare Research and Quality (AHRQ). The content is solely the responsibility of the authors and does not represent the official views of the CDC or AHRQ. Address correspondence to Denise Diaz Payán, PhD, MPP, Health Services Research Postdoctoral Fellow, University of California–Los Angeles, 650 Charles E. Young Drive South, Room A2-125 CHS, Los Angeles, CA 90095, USA; e-mail: ddpayan@ucla.edu.*

Health Promotion Practice

Month XXXX Vol. XX , No. (X) 1–12

DOI: 10.1177/1524839917705418

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intervention adoption and implementation in safety net settings. Key lessons learned are provided for researchers and practitioners interested in partnering with Federally Qualified Health Centers to implement health promotion interventions.

Keywords: *process evaluation; partnerships/coalitions; minority health; community-based participatory research; qualitative research; cardiovascular disease*

► INTRODUCTION

Reducing the gap between evidence-based clinical knowledge and practice is of paramount importance to improve health outcomes (Berwick, 2003; Kessler & Glasgow, 2011; Lenfant, 2003). Successfully implementing evidence-based practice in clinical settings is formidable (Charles, Gafni, & Freeman, 2011), resulting in wide variation in implementation (Greenhalgh, Howick, & Maskrey, 2014). Research is needed to understand how to effectively adopt and implement evidence-based interventions in clinical safety net settings (Cristofalo, 2013). Challenges to adoption and implementation of evidence-based interventions in these settings may include limited funding, insufficient resources, provider stress, and provider attrition (Hayashi, Selia, & McDonnell, 2009; Lewin & Baxter, 2007).

Clinical–community collaborations may help catalyze adoption and implementation of evidence-based interventions to improve the quality of clinical preventive services. Few studies have examined clinical–community collaborations (Anderson, Adeney, Shinn, Krause, & Safranek, 2012) related to implementation of evidence-based practice (Rycroft-Malone & Bucknall, 2010). There is also a lack of literature on the collaborative relationships established and the clinical–community linkage itself (Porterfield et al., 2012).

Community health centers are clinical care settings that primarily serve poor and vulnerable populations under fluid conditions, whereby changes to the clinical, health care, and public policy ecosystems directly affect their operations. These and other health care delivery organizations have important organizational networks and linkages that influence the behavior of health care providers and patients, and they exist within cultural, legal/policy, and resource environments (Mendel, Meredith, Schoenbaum, Sherbourne, & Wells, 2008). New clinical guidelines or a shift in federal funding priorities are designed to influence

provider- and organizational-level practice. However, an important implementation and dissemination question exists: Who can coordinate implementation amid multiple layers of factors influencing the operations and practices of a health care organization? New research is needed to develop innovative clinical–community collaborative models and evaluate their role and function in implementing evidence-based interventions that could address health disparities in safety net settings (Rust & Cooper, 2007). Safety net settings consist of health care delivery institutions and clinics that have a legal mandate or explicitly adopted mission to care for patients regardless of their ability to pay and that predominantly serve vulnerable patients such as the uninsured or recipients of Medicaid (Institute of Medicine, 2000).

This study responds to the call for research on effective collaborative mechanisms to enact health system changes (Kreuter, Lezin, & Young, 2000) and the need to conduct micro evaluations of coalitions to advance the evidence base of collaborative partnerships (El Ansari, Phillips, & Hammick, 2001). The purpose of this article is to present a case study of a clinical–community collaborative tasked with improving hypertension diagnosis rates and control outcomes in three Federally Qualified Health Centers (FQHCs) in South Los Angeles. Disparities in hypertension prevalence and control by income and race/ethnicity persist among U.S. adults and disproportionately burden vulnerable African American and Hispanic populations, leading to greater cardiovascular disease mortality and morbidity rates among these groups (Egan, Zhao, & Axon, 2010; Wong, Shapiro, Boscardin, & Ettner, 2002). Death from hypertension is estimated to account for 15% of the racial disparity in potential life-years lost between African Americans and Whites (Wong et al., 2002). Improving hypertension screening, treatment, and control among vulnerable minority populations could help address these disparities. In this article, we evaluate the role of a community-based organization whose purpose was to facilitate implementation of multiple evidence-based interventions in safety net settings that serve a high percentage of low-income African American and Hispanic patients.

► METHODOLOGY

Study Context

Community Health Councils (CHC) is a community-based health education and policy organization. Formed in 1992, the organization’s mission is to promote social justice and achieve equity in community

and environmental resources to improve the health of underserved populations. CHC employs a multipronged model for combating health disparities using community assessment and engagement, coalition building, and the implementation of innovative, evidence-based health interventions (Lewis et al., 2011).

In 2012, CHC received a Racial and Ethnic Approaches to Community Health (REACH) Demonstration Project grant from the Centers for Disease Control and Prevention to support implementation of evidence-based interventions for hypertension diagnosis and treatment in safety net settings. As the convening agent, CHC recruited three FQHCs from their existing health care system coalition network to participate. This coalition network was formed in 2008 with the goal of eliminating structural barriers to quality health care in South Los Angeles (CHC, n.d.). The three FQHCs who participated in this study all operate in the same high-disparity community of South Los Angeles.

South Los Angeles has high levels of hypertension and obesity. In 2011, nearly 40% of adults were uninsured and 30.3% were covered by the state's Medicaid program. The documented adult hypertension prevalence rate was among the highest in the region at 30.3%; however, the actual prevalence rate was likely higher since up to about 40% of hypertensive individuals are undiagnosed (Wall, Hannan, & Wright, 2014). Table 1 provides information on the health and coverage status of adults in South Los Angeles from 2011.

At the time of the study, FQHC 2 was the largest of the three centers with 14 operational sites and FQHC 1 was the smallest with only two operational sites. Patient characteristics varied across the three clinics. Diagnosed hypertension rates ranged from 33.9% of patients at FQHC 3 to 20.7% at FQHC 2. Uncontrolled hypertension rates ranged from a high of 40.8% at FQHC 1 to a low of 26.4% at FQHC 3. The racial and ethnic composition of the patient population at each clinic also differed. While FQHCs 1 and 2 mostly served Hispanic patients (with a sizable amount of non-English speakers), 86.7% of the patient population at FQHC 3 were Black/African American. All of the sites had a high percentage of low-income patients.

Community Collaborative Structure and Participation

Drawing on the theoretical foundation of the social ecological model (McLeroy, Bibeau, Steckler, & Glanz, 1988), CHC's approach created an iterative reciprocal relationship between coalition members that allowed each clinic the opportunity to select their interventions while ensuring that their choices moved intervention

implementation toward organizational and systems change (Lewis et al., 2011).

CHC served as the facilitator and technical assistance partner to the FQHCs and bridged learning gaps between the clinics by identifying strengths and needs. CHC has two full-time staff positions—a Health Care Systems Policy Director and a Project Coordinator—whose responsibilities include communicating with local safety net clinics and engaging in local health care policy issues. These staff members have at least 5 years of experience in administration, management, or public health research in underserved health care settings and a graduate degree in public health. They were tasked with coordinating and facilitating a monthly meeting with each FQHC throughout the duration of the study. The meetings' purpose was to discuss adoption and implementation processes. The meetings served as a vehicle for communication and planning activities as well as an important means of managing the relationship between CHC and the clinics on a regular basis (Mendel et al., 2008). A range of 8 to 15 meetings were held at each FQHC during the 36-month cooperative agreement period.

Clinic leadership (e.g., Chief Medical Officers and Medical Directors) and staff (e.g., quality improvement coordinators and information technology personnel) attended the meetings and served as FQHC liaisons and change champions (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004). An average of three clinic representatives attended each meeting. These representatives had an average organizational tenure of 6.94 years ($SD = 5.65$); two clinics had at least one representative with ≥ 10 years organizational tenure.

Interventions

The clinics decided to improve hypertension diagnoses rates and to target poorly controlled hypertensive patients by (1) increasing early follow-up of patients, (2) encouraging intensification of therapies, and/or (3) increasing engagement in lifestyle interventions (see Table 2). These interventions were either evidence-based or practice-based strategies known to effectively improve hypertension control in clinical settings (Centers for Disease Control and Prevention, 2013). Each clinic also selected a systems-level hypertension project. All of the FQHCs received health care provider-level educational training on the Eighth Joint National Committee's (JNC 8) guidelines around the management of high blood pressure in adults and population-level hypertension prevalence data within the public health context.

TABLE 1
Health Profile of Adults in South Los Angeles and FQHC Characteristics

| <i>Health Profile of Adults (18+ Years Old) in South Los Angeles^a</i> | % [95% CI] | | |
|--|-------------------|---------------|---------------|
| Ever diagnosed with hypertension | 30.3 [19.2, 41.4] | | |
| Weight condition | | | |
| Obese | 38.1 [26.2, 50] | | |
| Overweight | 32.2 [21.2, 43.1] | | |
| Insurance status | | | |
| Medi-Cal | 30.3 [17.3, 43.3] | | |
| Uninsured | 38.5 [25.6, 51.5] | | |
| Reported fair/poor health status | 27.8 [17.7, 37.9] | | |
| Reported medical care is somewhat or very difficult to obtain when needed | 49.1 [36.6, 61.6] | | |
| <i>Patient Characteristics^b</i> | <i>FQHC 1</i> | <i>FQHC 2</i> | <i>FQHC 3</i> |
| Patients served (<i>n</i>) | 5,049 | 45,245 | 13,151 |
| % Adults (18-65 years of age) | 78.6 | 67.1 | 76.4 |
| % Black/African American | 31.4 | 30.7 | 86.7 |
| % Hispanic/Latino | 65.0 | 75.7 | 34.1 |
| % Non-English language speakers | 52.1 | 57.6 | 35.1 |
| ≤200% of the federal poverty level | 99.7 | 99.7 | 98.8 |
| % Uninsured | 59.3 | 55.0 | 64.4 |
| % of patients with hypertension | 26 | 20.7 | 33.9 |
| % with uncontrolled hypertension | 40.8 | 38.9 | 26.4 |
| <i>FQHC Characteristics^c</i> | <i>FQHC 1</i> | <i>FQHC 2</i> | <i>FQHC 3</i> |
| Operational sites (<i>n</i>) | 2 | 14 | 5 |
| FTE primary care providers (<i>n</i>) | 6 | 13 | N/A |
| PTE/per diem primary care providers (<i>n</i>) | 1 | 2 | N/A |
| EHR platforms/systems | eCW® | Centricity® | eCW® |

NOTE: FQHC = federally qualified health center; CI = confidence interval; FTE = full-time equivalent; N/A = not available; PTE = part-time equivalent; EHR = electronic health record; eCW® = eClinicalWorks®.
^aLos Angeles County Health Survey (2011), Los Angeles County Department of Public Health. ^bUniform Data System reports (2013). ^cClinical provider survey (January 2015) and meeting minutes.

Study Design

We used a qualitative process evaluation approach to capture the complexity of the knowledge translational and collaborative processes and to illuminate the black box of implementation for each clinical environment (Cristofalo, 2013; Hulscher, Laurant, & Grol, 2003; Mendel et al., 2008; Ovretveit, 2011). The study focused on the (1) *structure* or attributes of the care settings, (2) *process* of the services provided for hypertensive patients, and (3) key participants' interactions (Sofaer, 1999). Drawing from the community coalition action

theory (CCAT), investigators' previous experience with the CHC coalition strategies, and existing literature on effective coalition building, we included key process measures (e.g., barriers and facilitators to implementation) and key metrics of the collaborative (i.e., coalition leadership, goals, member characteristics, engagement level, planning activities, decision-making processes, relationship, and availability/use of resources; Butterfoss, 2006; Butterfoss & Kegler, 2002, 2009; Mizrahi & Rosenthal, 2001). For instance, since the CCAT identifies three stages of coalition development—formation, maintenance, and institutionalization—and related

TABLE 2
Description of Selected Hypertension Interventions by FQHC [AQ: 1]

| | <i>Objectives</i> |
|---------------|--|
| All | 1. To implement a provider-level educational training (JNC 8 Guidelines Training and Population-Level Hypertension Prevalence Data Presentation) |
| FQHC 1 | 1. To develop a hypertension quality improvement committee 2. To redesign the health information systems (either EHR or registry) to produce population-based reports 3. To disseminate reports and feedback to clinical providers to improve panel management and ensure that patient-centered medical home practices are followed 4. To provide a consistent peer review process for sharing best practices and quality assurance |
| FQHC 2 | 1. To develop and implement an automated alert system for patients with two consecutive readings of blood pressures ($\geq 140/90$) 2. To develop an automated prompt for the diagnosis of hypertension and prehypertension ($\geq 120/80$) 3. To implement a decision support tool for managing common comorbidities (e.g., diabetes) 4. To improve patient action plans and visit summaries (English/Spanish) |
| FQHC 3 | 1. To standardize educational practice for patients for diagnosis, treatment, and medication adherence (i.e., educational materials and DVDs) 2. To improve action plans and visit summaries for patients 3. To implement a practice of providing regular feedback to clinical providers to support management and patient-centered medical home practices |

NOTE: FQHC = federally qualified health center; JNC 8 = Eighth Joint National Committee; EHR = electronic health record.

constructs for the formation stage include the community context, lead agency/convenor group, and coalition membership (Butterfoss & Kegler, 2009), these constructs and others guided the development of the interview tools and subsequent analyses.

Qualitative Measures and Data Collection

Qualitative data collection tools included a key participant interview guide, health care provider interview guide, and protocol for taking meeting minutes. Key participants consisted of the clinical personnel and management staff involved in the selection and adoption of interventions. Health care provider refers to medical providers tasked with implementation in the clinics. Both of the interview guides included questions about barriers to implementation and engagement (El Ansari et al., 2001). Attendance data were collected for the meetings and trainings.

All of the interviews lasted between 30 and 45 minutes. Interviews were not audio-recorded, and instead, a trained two-person team (i.e., an interviewer and a note taker) was responsible for conducting the interview and collecting detailed field notes with verbatim quotes. Each team reviewed and confirmed the accuracy of the notes in a postinterview debriefing. Each

note taker underwent a rigorous instruction and supervised qualitative research training period (≥ 10 hours) with a quality assessment component prior to conducting fieldwork for this study.

Key Participant Interviews. CHC facilitated a monthly meeting with each clinic. We conducted key participant interviews ($N = 8$) with clinical personnel and management staff who attended these meetings between December 2014 and February 2015 ($n = 3$ respondents from both FQHC 1 and FQHC 2, and $n = 2$ from FQHC 3). Respondents represented a range of health care positions (i.e., Chief Medical Officer, Medical Director, Wellness Center Coordinator, etc.). Key participants were asked about their experience working with the collaborative, recommendations for improvement, and the value of the partnership.

Health Care Provider Interviews. We conducted postimplementation interviews with a range of health care providers tasked with implementing the interventions (i.e., physicians, nurse practitioners, physician assistants, and a dietician). Each clinic had three respondents ($N = 9$). Interviews were conducted between July and August 2015 to assess provider awareness, experience, and satisfaction with the interventions.

Meeting Minutes. Between January 2014 and June 2015, CHC held 34 clinical preventive services meetings. Most meetings were about 2 hours in duration and held at the FQHC. A trained evaluation staff member took detailed meeting minutes, capturing intragroup dialogue. A second researcher who attended the meeting reviewed the minutes for internal consistency.

Qualitative Data Coding and Analysis

The evaluation team developed a universal codebook that served as a formal organizing system for all coding processes. The initial version included codes identified a priori (Miles & Huberman, 1994). The collaboration and coalition literature served as the primary foundation for the codebook (Butterfoss, 2006; Butterfoss & Kegler, 2002; Mattessich, Murray-Close, & Monsey, 2001). Categories of codes included *setting codes* (outreach activities, policy/political climate, intervention awareness and exposure, etc.), *conceptual codes* (barriers to health, barriers to implementation, implementation facilitators, successes, strengths, etc.), *relationship codes* (partnerships), and *participant perspective codes* (level of participation, social support, sense of ownership, turnover, perceived benefits; Bradley & Curry, 2006).

Each type of data source corresponded to a different data file, and a total of three data files were managed. Three researchers each coded a minimum of two key participant interviews, two health care provider interviews, and three meeting minutes as part of the pilot coding process to test the coding structure and to identify emergent codes (Corbin & Strauss, 2014). While no new primary codes emerged during the piloting phase, we identified important subcategories. For example, the perceived benefits construct was divided into two subcategories—the perceived benefits of the project for the organization and the perceived benefits for the community.

Once finalized, the codebook served as a training tool for research assistants. Research assistants used NVivo 10 qualitative coding software to code all of the qualitative data (QSR International, 2012[**AQ: 2**]). Two of the authors [**AQ: 3**] reviewed the coded data and generated thematic descriptions related to the study's process evaluation questions. These descriptions were iteratively reviewed and agreed on.

► RESULTS

The process evaluation revealed that CHC successfully served as an external facilitator to catalyze implementation of evidence-based interventions in the three

FQHCs. Specifically, CHC staff members leveraged their existing resource knowledge (i.e., community-level knowledge, networks, and capacity) to address barriers that emerged while maintaining effective collaborative relationships with each participating site for the entirety of the project. Below is a detailed description of the barriers and facilitators to implementation by phase, key participant and health care provider engagement and satisfaction, and patient-level considerations.

Barriers and Facilitators by Implementation Phase

Table 3 provides the key barriers and facilitators related to the clinics' structural capacity to implement hypertension interventions during the study period. We included barriers and facilitators in the table that emerged in at least two of the study's data sources. The findings are organized by each observed phase of implementation: initiation, Planning, and Implementation.

Initiation. The initiation phase consisted of initial discussions around the selection of evidence-based interventions through a capacity and needs assessment process. Capacity and needs assessments are a useful means of understanding specific organizational and stakeholder capacity, practice, and preferences for evidence-based interventions (Mendel et al., 2008).

CHC staff and members of the evaluation team worked with the clinics to develop an assessment questionnaire spanning areas related to hypertension practice (i.e., blood pressure measurement protocols, adherence to JNC 7 guideline, body mass index and other measurements, assessment of comorbidities, laboratory tests, lifestyle modifications, and pharmacological measures). Initial discussions revealed key personnel capacity facilitators among the FQHCs, which consisted of having providers and staff who were committed to serving vulnerable populations, and leadership who prioritized culturally appropriate and competent practices.

CHC met with the clinical representatives in May and June 2013 to discuss clinical operations and to identify service gaps that could be addressed by the project. These meetings produced a menu of potential hypertension interventions for each clinic. Throughout January 2014, the clinical–community partners continued to discuss potential areas of improvement. Key participants shared organizational goals to more effectively use their technological systems to inform practice. One shared their interest in comparing hypertension rates by provider, “[We] have previously looked at the [hypertension] rates by site, but not by provider. We

TABLE 3

Facilitators and Barriers to Implementation by Phase, 2013-2015 (N = 3 FQHCs located in South Los Angeles) [AQ: 4]

| | <i>Initiation</i> | | <i>Planning</i> | | <i>Implementation</i> | |
|--|-------------------|--|-----------------|---|-----------------------|---|
| Personnel capacity | F | Commitment to serve vulnerable populations | F | Intervention champions who communicated interest and ownership of the interventions | B | Management, provider, and staff retention issues |
| | F | Prioritizing culturally appropriate and competent practices | B | Provider inertia | B | Delays in recruitment and hiring practices |
| | F | Quality improvement coordinator or committee | | | B | Competing responsibilities |
| Professional development capacity | F | Training staff to systematically collect patient BP | F | Activated medical directors who promote updated guidelines and practices | — | |
| | F | Prioritizing patient education, goal setting, and lifestyle modification strategies | B | Lack of knowledge about and experience with revised hypertension clinical guidelines | | |
| | B | Capped ancillary staff responsibilities | B | Lack of time to train personnel | | |
| | B | Varied provider practices on patient education and lifestyle modification counseling | B | Lack of consensus around medication practices | | |
| Technological capacity | F | Interest in using technological systems to inform practice | F | Professional development resources for providers and staff to improve technological knowledge | B | Variable costs and delays associated with the EHR Interoperability challenges between systems |
| | F | Recently updated equipment to systematically capture data | B | Lack of (qualified) information technology personnel | | |
| | B | Lack of a registry function in an EHR system | B | Lack of knowledge about EHR capacity and functionality | | |

NOTE: FQHC = federally qualified health center; F = facilitator; B = barrier; BP = blood pressure; EHR = electronic health record.

hope to do that this year as part of our 2014 quality control goals.”

The assessment process identified several technological capacity barriers (refer to Table 3). Interestingly, all of the FQHCs expressed an interest in improving their electronic health record (EHR) system and were interested in developing a hypertension patient registry, installing hypertension diagnosis prompts, or adding new patient education and counseling fields to address existing technological capacity barriers.

Personnel and professional development facilitators to enact change were also identified. Facilitators included having a designated quality improvement coordinator or committee structure to facilitate project activities or updated equipment to systematically

capture patient information during a patient visit (e.g., specific patient lifestyle goals were added to FQHC 3’s system). These facilitators proved beneficial to subsequent implementation phases.

Planning. When the clinical–community partners turned to planning in mid-February 2014, the phase was stalled by the release of the JNC 8 guidelines on February 5, 2014. The JNC 8 provided nine evidence-based recommendations for hypertension treatment among adults and primarily focused on specifying pharmacological treatment for specific groups (James et al., 2014). Intervention selection discussions were renewed after the guidelines were released. A key participant stated their concern about the new guidelines

during a meeting, “It’s outdated now because we have new guidelines. I needed to look at this to confirm. When we started last year, it was JNC 7 and recently, there were some changes.” Another respondent articulated the need for provider awareness and education, “There is room for improvement in the clinics and certainly for increased provider education or documentation.” In the third clinic, although the medical director had recently e-mailed the new JNC 8 guidelines to providers, a key participant felt that a live training was needed to promote adherence to the new guidelines.

During the planning phase, a lack of time to train personnel around the new guidelines was an implementation barrier for all of the clinics. To address this barrier, CHC staff offered to facilitate and coordinate an internist-led provider education training to review the new JNC 8 guidelines and to present general information on preventive hypertension practices. All three clinics agreed and the training became a shared intervention (see Table 2). An in-person session was selected since it is more effective than a passive approach, particularly for prescription practice (Grimshaw et al., 2001).

The clinics hoped that a provider training would address some of their personnel and professional development capacity barriers. One clinic noted a lack of consensus among providers around medication practices—“There isn’t a consensus around medication. If there’s guidance on that, that would be helpful.” Another clinic mentioned provider inertia in treatment practices—“I think sometimes older providers have the way they treat it, and sometimes they are stuck. They do it their way versus new ways or learning how others do it.”

The remaining interventions selected were related to technology, behavior modification, and improved practice protocols. A key participant from FQHC 2 perceived the project as an opportunity to prioritize prevention and acted as a champion for preventive hypertension control. The individual said the following during a meeting, “Adult hypertension is a silent killer. . . . We currently identify acute and symptomatic, but we would like the clinical intervention to draw out the non-symptomatic and non-acute preventive cases and expand our existing Electronic Medical Record capacity.” As a result, the clinic included a prehypertension alert in their work plan.

Several technological capacity barriers emerged during the planning phase, including a lack of qualified information technology personnel and knowledge about EHR capacity and functionality. Some discussion items were postponed so that key participants could inquire with the EHR vendor about the specific capacities of their system and the range of possibilities.

Implementation. Through CHC’s facilitation, all of the interventions were implemented during the implementation phase, but not without challenges. Key barriers included provider and administrator turnover and lack of technological capacity (i.e., lack of knowledge about the EHR). Turnover occurred across sites, yet it was particularly noxious at FQHC 1. A key participant there noted, “We personally have had issues because of transition with leadership so it’s been hard to implement programs when there’s constant flux in leadership so that has been one of our personal barriers.” Turnover at this clinic led to the recruitment of new participants who expressed frustration about their limited previous involvement and time with the project:

These projects are great, my own personal thing is I am frustrated because I wish I had more time . . . I wish I [had been] involved in the initial planning so we could have implemented sooner. I just don’t think I’m doing the project service with my time restriction.

Turnover coupled with interoperability challenges between the EHR system and a population health management program led to delays in developing and disseminating reports and feedback to clinical providers at FQHC 1.

At FQHC 2, the EHR update process delayed implementation of the decision supports, which is depicted in the following illustrative quote by a key participant:

I think that because of tremendous unforeseen problems with our EMR system, there have been long delays in the implementation of the hypertension specific decision support measures and that both of those factors have made it hard to expand the project to the volume of patients that would have made it more meaningful during the months of the study period.

Ultimately, the clinic’s vendor delayed implementation of the clinical decision supports by 6 months and the alerts were not fully operational until June 2015.

Key Participant and Health Care Provider Engagement and Satisfaction

Key participants and health care providers generally expressed satisfaction with the interventions and mentioned specific benefits from participating in the REACH Demonstration Project. A key participant from

FQHC 2 described the value of adding an automated provider alert system for hypertensive and prehypertensive patients to their EHR, “It’s improved the quality of patient care and preventive medicine. And it’s assisted us, the enhancement of our electronic medical record . . . in a way that will be enduring. It’s not temporary.” At FQHC 1, a key participant identified implementation of their interventions as a “success” and said it led to more accurate blood pressure measurement and record keeping. Moreover, various FQHC 3 health care providers reported being satisfied with the revised visit summaries and action plans.

Seven of eight key participants believed that working with the collaborative was very helpful or useful. Many reported asking for help—six asked CHC for help, three asked other collaborative partners, and two asked other clinic/program providers. Key participants said the collaborative improved the quality of patient care and preventive medicine, increased resource awareness, and provided a structured plan for sustainable improvements.

Last, the hypertension and JNC 8 guidelines training offered by CHC was well attended ($N = 33$) and well received by many of the health care providers. The training was 90% lecture and 10% discussion. A concern noted by interviewed respondents was that those absent would not be well equipped to achieve hypertension control among their patients. Thus, a disadvantage of the training was that it was not recorded and disseminated among providers who did not attend the training.

Patient-Level Considerations

We would like to mention that several FQHC health care providers acknowledged the importance of the social determinants of health and cited health care access barriers that may limit the impact of evidence-based interventions in safety net settings. Multiple clinicians acknowledged barriers that impede improvement of cardiovascular outcomes among their patients, which can limit the effectiveness of the type of interventions selected in this study. A physician mentioned lack of transportation as an issue: “Lots of people, for example, if they are referred to a cardiologist, then they can’t go because they don’t have transportation.” Another provider mentioned the challenges of medication adherence:

If you have hypertension, diabetes, gout . . . [listed three other chronic illnesses]. That’s six different issues and if you are on six medications, you can’t

get your seventh medication until next month so, if you have the flu or bronchitis or something you can’t get the additional medication.

Furthermore, two providers believed patient-level knowledge and behaviors were more significant barriers to achieving hypertension control than some of the barriers mentioned in this study. A provider acknowledged the importance and additional need for health promotion and education interventions in safety net settings and said, “The biggest barriers are not in clinic. They’re from the patients in that there is a behavior and lifestyle modification barrier.” These barriers are similar to those identified in prior studies as challenges faced by safety net setting patients (Cristofalo, 2013).

► DISCUSSION

Our study demonstrates how a community-based organization can act as a convening agent to catalyze implementation of evidence-based interventions in clinical safety net settings using a collaborative partnership model. Previous studies have not provided detailed information on coalition structure and related processes (Anderson et al., 2012). The findings provide valuable lessons for emerging and existing clinical–community collaboratives interested in addressing health disparities through adoption and implementation of evidence-based interventions.

First, the capacity and needs assessment conducted during the initiation phase was an important foundational component for the partnership. The assessment helped identify specific organizational and stakeholder capacity, practice, and intervention preferences (Mendel et al., 2008). The key participant interviews showed that clinic participants recognized that the assessment provided a framework for them to assess their own strengths and weaknesses related to hypertension practice and contributed to an intervention selection process that was tailored according to the competencies and preferences of each FQHC. The discussions also revealed a mutual interest among the clinics to improve their EHR systems to advance clinical processes, which may be a reflection of federal regulations and policies to actively promote meaningful use of EHR technology (Blumenthal & Tavenner, 2010). Similar assessments have been conducted by community coalitions elsewhere and have been recognized as valuable assets (Anderson et al., 2012; Kreuter et al., 2000).

Second, an advantage of this type of clinical–community partnership is that it can generate shared resources among participants. The key participant

interviews and meeting minutes confirmed that the resources needed for dissemination and implementation go beyond funding and expertise and include relationship building and community organization skills (Mendel et al., 2008; Mizrahi & Rosenthal, 2001). Both CHC and clinic participants stated that much of the relationship building between them occurred during the monthly partner meetings. These structured meetings were an important means of communicating, building trust, and maintaining engagement among participants throughout the project. Thus, lead conveners/facilitators should designate time and effort in their project timeline to regularly meet with key participants and to use tools (i.e., agendas, needs assessments, etc.) to promote discussion and to advance decision making. The coalition's structure and these components can increase the likelihood of achieving the type of collaborative synergy described in the CCAT (Butterfoss & Kegler, 2002).

Third, external facilitators of such collaborative partnerships should be aware of the potential disruptions and barriers that can delay or derail implementation and be willing to adapt. For example, CHC responded to clinical representatives' concerns about the release of the new hypertension treatment guidelines by offering to host a provider-level educational training. The data revealed the CHC's willingness to adapt and integrate new objectives, which helped transition the collaborative from the planning phase to implementation and contributed to key participants' high satisfaction levels. External partners and researchers interested in partnering with community health clinics should also be aware of potential personnel and professional development capacity issues. Administrative and provider turnover are important barriers associated with safety net settings, and partners should devise strategies in anticipation of these challenges. Recruiting clinical representatives with greater organizational tenure to participate in a clinical-community partnership proved beneficial to the partnership in this study and may have prevented additional turnover. Engaging multiple clinical representatives per site during the initiation phase of a collaborative project can also reduce the impact of turnover on implementation if it were to occur.

Limitations

There are several limitations to this study. First, the findings are limited to the experience of three FQHCs operating in South Los Angeles; therefore, the findings may not be generalizable to other clinical settings or regions. Second, initial discussions between CHC and

the clinics occurred without evaluation personnel, thus limiting our evaluation of the initiation phase. Last, clinic personnel who left were not available for interviews. Future studies could measure fidelity of implementation in the clinical setting and changes in knowledge due to exposure to a provider-level educational intervention.

Implications for Future Research and Practice

A future direction is to evaluate whether or not implementation of the evidence-based interventions selected by the clinics improved patient hypertension diagnoses, treatment, and control outcomes. Measuring the impact of evidence-based interventions on underserved patients in safety net settings is needed to better understand whether this type of partnership approach can lead to reductions in health disparities. Previous studies on coalitions to enact health- and social care system-level changes have mostly resulted in small positive benefits to intervention communities for other health areas (Anderson et al., 2012). Future research should also examine the long-term structure and effects of clinical-community collaborations on underserved communities (Butterfoss & Francisco, 2004; El Ansari et al., 2001).

The findings reveal current challenges for safety net settings and suggest that these types of health care delivery organizations need additional health information technology capacity support, guidance, and training. A decade ago, the lack of technological capacity and information technology development in clinical settings was considered an important impediment to the clinical research continuum (Sung et al., 2003). Although the clinical information technology environment has rapidly evolved, lack of knowledge and capacity barriers persist, particularly in safety net settings, which may face more complexities compared to private health care organizations due to their patient population and focus on quality improvement (Miller & West, 2007). In this study, CHC did not provide technical assistance to address technological capacity barriers at the clinics although these issues emerged throughout implementation at all three clinics.

Future clinical-community partnerships should include a technical assistance component for health information technology, and funders of such partnerships should be aware of the need to pay for improvements in these systems or training to effectively use these systems. These challenges must be addressed since health promotion interventions are increasingly incorporating health information technology. Cooperative learning groups for the dissemination of best practices

can be a valuable strategy to increase EHR-related quality improvement (Miller & West, 2007) and are an important research area for researchers and practitioners interested in promoting adoption and implementation of technology-based interventions.

► CONCLUSION

Emerging collaborative and coalition models are promising initiatives to bridge translational research gaps and to reduce health disparities. Understanding individual- and organizational-level participation and engagement throughout adoption and implementation is important to identify what occurred and to distinguish phases of the diffusion process in real-world settings. Evaluating cross-sectoral community coalitions and partnerships, processes, infrastructure, and outcomes is important to document how they function, exist, and affect the public's health in a community (Butterfoss & Francisco, 2004), particularly in health care delivery settings that serve ethnic and racial minority populations.

Improving hypertension control among priority populations who suffer from disparate rates of hypertension requires innovative approaches and strategies to reduce the translational research gap. Creating and supporting innovative clinical–community collaborations may catalyze adoption and implementation of improved organizational and provider practices in underserved communities. This qualitative process evaluation reveals the resilience of the partnership in achieving their aims in three FQHCs, amid various organizational barriers. Key components of the collaborative structure include the capacity and needs assessment, an experienced community external facilitator with capable staff, use of resources, and willingness to adapt. Key lessons learned are provided for researchers and practitioners interested in partnering with community facilitators and FQHCs to implement evidence-based interventions. Further research is needed to examine how clinical–community partnerships can contribute to the implementation of evidence-based interventions in areas facing disparate cardiovascular and chronic disease morbidity and mortality rates, as well as the impact of these collaborations.

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