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Testing an innovative approach to improve hypertension management at a Federally Qualified Health Center

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Abstract

Despite the availability of effective treatments, hypertension control rates remain inadequate in the United States and locally in Los Angeles County. To address this health condition, Gracelight Community Health developed and launched a team-based hypertension management program which was led by clinical pharmacists and designed to mitigate treatment barriers encountered at the system-, provider-, and patient-level. System- and provider-focused strategies included incorporating self-monitored blood pressure values into the electronic health record and retraining clinicians to regularly review these values; adding a community health worker to the disease management team; and utilizing clinical pharmacists to assess and titrate medications. Patient-focused strategies included: tailoring education materials to reduce literacy and linguistic barriers; providing tailored one-on-one education and support; and providing blood pressure cuffs and

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pedometers. This multi-level intervention serves as a practical example of how team-based care can be optimized at a Federally Qualified Health Center.

Keywords

hypertension; pharmacists; community health workers; team-based care; home blood pressure monitoring

Introduction

Despite the availability of effective therapies and decades of sustained research and public health investment, hypertension prevention and control remain elusive.[1,2] It is estimated that nearly half of all adults in the United States (U.S.) have hypertension, with prevalence remaining generally stable over the past 20 years.[2,3] Presently, only 25% of individuals with hypertension have their condition under control.[3] In 2021 alone, hypertension was a primary or contributing cause of nearly 700,000 deaths in the U.S.[4] Similar to other chronic conditions, hypertension does not affect all racial/ethnic groups equally, with Black, Hispanic, and Asian Americans having different vulnerabilities in prevalence, awareness, treatment, and control.[5] The continuing burden of hypertension and related disparities has been attributed to a combination of interacting patient factors (eg, low health literacy), provider factors (eg, distractions and competing needs from multiple other health issues, financial pressures that limit time spent on patient care), the health care environment (eg, inadequately structured to facilitate efficient care), and broader community and societal factors (eg, limited availability of safe areas for physical activity).[2,6,7] Research has shown that implementation of multilevel, multicomponent strategies that address at least two levels of barriers (i.e., patient-, provider-, health-system-, or community-level) are effective for supporting blood pressure reduction.[8] Team-based care strategies in which responsibility for hypertension management is shared among team members such as nurses, pharmacists, or community health workers, have been shown to be particularly effective.[8] This article provides an overview of a Federally Qualified Health Center (FQHC)-based effort to launch a pharmacist-led hypertension management program designed to address system, provider, and patient level barriers to blood pressure management among a primarily Spanish speaking population.

Context and Rationale

Gracelight Community Health (GCH) is an FQHC system based in Los Angeles County, California, comprising five health centers and two pharmacies. The system provides primary, preventive, and selected specialty services like optometry, dental, podiatry care to approximately 24,000 patients a year, 78% of whom have an income at or below the Federal Poverty Level. The GCH medical team includes clinical pharmacists (CPs) who provide medication therapy management and community health workers (CHWs) who provide disease education for patients with chronic conditions. Because approximately 75% of GCH's patients are Spanish speaking, CPs are competent in medical Spanish and all CHWs are bilingual and of Hispanic background. Recognizing the need to better support its patients with undermanaged hypertension, GCH developed a comprehensive hypertension

management program aimed at promoting self-measured blood pressure monitoring with funding and resource support from the Los Angeles County Department of Public Health and the American Heart Association. This multi-partner collaboration allowed GCH to obtain home blood pressure monitors at no cost and devote staff time to developing and launching the program.

Intervention Approach

In Summer 2022, a team of GCH CPs began developing a hypertension management program that promoted home blood pressure monitoring (i.e., regular measurement of blood pressure by patients outside of the clinical setting) and provided services via a team-based care approach.[9] Informed by their own experience in the field, a survey of 30 GCH providers, and informal discussions with other care team members, the CPs identified six key areas that needed to be addressed as part of this program: (i) clinic workflows/documentation, (ii) staffing, (iii) patient education, (iv) medication use/adherence, (v) patient follow-up, and (vi) behavior change. Table 1 describes challenges encountered across these six key system, provider, and patient level areas and associated solutions implemented as part of the hypertension management program.

Improvements to infrastructure and staff capacity were required to mitigate challenges identified at the system- and provider-level. For example, to address the lack of a clearly defined place to document self-measured blood pressure values within the electronic health record (EHR) system, which limited providers' ability to review values or pull data for reporting, the team worked with their EHR vendor to establish designated data fields for these values. They also developed and implemented corresponding trainings and workflows to support consistent use of these data fields. To address limited medical team capacity to engage in hypertension education and support, the team added CPs and CHWs to the disease management team.

At the patient level, the team focused on improving patient education by creating simple, user-friendly resources and having CPs and/or CHWs provide patients with one-on-one education to explain blood pressure values and targets. These education strategies were tailored to meet the cultural, linguistic, and health literacy needs of the patients. To address challenges related to medication adherence and use, the CPs prioritized the provision of one-on-one medication counseling. The CHWs were also equipped to support medication adherence through assessment of medications taken and to work with patients to identify and address barriers to adherence. To decrease no-show rates and missing lab values, the team implemented a number of strategies including pairing blood pressure follow-up appointments with existing patient appointments and offering $20 gift card incentives. Notably, the gift cards were used sparingly and ultimately discontinued due to a number of concerns including the administrative burden associated with procurement and tracking. Finally, to better support patients in engaging in behavior change, the team provided patients with practical tools (e.g., home blood pressure monitors, pedometers, paper-based blood pressure tracking logs), and complementary education and support.

After developing the aforementioned changes over the course of approximately three months, the team launched the program in November 2022 at one clinic site which was

selected due to staff interest in the program and availability to participate. Once the program was field tested and determined to be viable, it was expanded to other clinic sites, adjusting to each site's size, staffing availability, and physical layout. Patients were enrolled into the program primarily based on provider referral. Those patients with a diagnosis of hypertension and interest in measuring their own blood pressure at home were enrolled in the program. Patients who did not meet this criteria, but were identified by their provider as potentially benefiting from the program (e.g., patients without a hypertension diagnosis but presenting with variable blood pressure measurements) were also enrolled. Once enrolled, each patient received a home blood pressure monitor and had regular check-in appointments with either a CP or CHW who provided education, medication adjustments, and support as needed. Check-in appointments were held either virtually or in-person, and provided an opportunity for staff to review and track blood pressure measurements that patients had manually recorded at home. Appointments were initially held weekly, then tapered to every two to four weeks based on mutually agreed upon need between staff and patients. While there was no established program length, it was anticipated that patients would participate in the program for approximately 3–6 months.

Results and Lessons Learned

With the support of four CPs and four CHWs, the program has now been fully implemented at three clinic sites and is in the process of being expanded to GCH's two remaining clinic sites. In the first 12 months of implementation, a total of 136 patients aged 32 to 89 years old (mean = 61 years) were enrolled in the program and received home blood pressure monitors and related education and support. Staff successfully followed-up with 83% of these patients (n=113) through a total of 243 encounters (134 with CHWs and 109 with CPs). Enrolled patients met with the team 1–9 times (median 1.5); these encounters were in addition to their standard primary care visits. Approximately 60% (n=81) of enrolled patients have achieved optimal blood pressure control (defined as having three consecutive blood pressure readings of less than 140/90 mm Hg documented by clinical staff) and were returned to usual care (i.e., no longer actively engaged by CPs or CHWs to monitor blood pressure values), with many still in the process of improving their blood pressure control.

GCH's experience highlights the critical importance of developing a program that addresses multiple layers of infrastructure to equip the system, staff, and patients with sufficient support; it yielded a number of lessons learned including program solutions that addressed many of the challenges encountered (see Table 1). At the system- and provider-level, the strategic addition of CPs and CHWs to the disease management team was essential to providing patients with more supportive, accessible care and resources. For example, CPs and CHWs were able to dedicate more time to patient education and identification of barriers than the standard care team. The resultant increase in patient touch points also helped to build rapport with patients and work through disease management challenges such as the stigma of taking medications or addressing worries of potential side effects. Greater reliance on CHWs to provide patient training on reaching blood pressure goals, self-monitoring techniques, and behavior change also ensured that CPs were not primarily responsible for basic disease education and were able to focus on patients' more complex needs. Finally, investment in complementary refinements to the EHR and development and

implementation of staff trainings ensured that the system and providers were equipped to effectively carry out new strategies.

At the patient-level, it was essential to accommodate patients' needs and comfort level in addition to providing them with sufficient education and support to help them understand the importance of managing their condition and how best to do so. This helped to build rapport with patients and proved especially important given the largely asymptomatic nature of hypertension. Using simple resources and tools was key. Language barriers, cultural barriers, literacy barriers, health literacy barriers, and general overwhelm of information reduced patient's ability to adhere to recommended treatments. Use of simple strategies such as use of larger font sizes, color, and imagery when developing materials or sharing of preexisting, publicly available educational videos from trusted entities such as the American Heart Association that the team vetted and curated made a big difference and had meaningful impact. In contrast, use of more sophisticated technology such as blood pressure monitors with large storing capacity or a companion app required a lot of patient education and support; ultimately, these monitors were not as effective as simpler monitors in facilitating consistent, accurate use. Tailoring program strategies to meet individuals' needs also proved invaluable for effective communication. For instance, based on informal patient feedback, the team found that Spanish-speaking patients more frequently preferred in-person and video education over paper-based educational resources as compared to their English-speaking counterparts.

Conclusion

The GCH experience shows that establishing a team-based, patient-centered hypertension management program within an FQHC system is feasible, but requires a flexible, multi-layered approach that is supported by adequate investments in tailored resources. For example, GCH found that simpler resources and tools (e.g., patient education materials that were visually interesting and used larger font sizes, basic blood pressure monitors that were simple to operate) were better for communicating with patients and helping them to adhere to treatment recommendations; these observations are similar to some of the patient education approaches documented in the literature.[10–12] While the investments needed for impactful programming were relatively small given GCH's existing staffing structure, it was still challenging for this FQHC system to provide the dedicated resources needed to develop and launch the program in the face of competing priorities without additional support. Leveraging funding and resource support from external partners including a non-profit organization and a local-health department proved to be an effective way to elevate this program as a clinical priority and invest in developing the foundational infrastructure needed to test and launch it. Moving forward, this program is expected to continue as ongoing implementation will require minimal funding support. However, it should be acknowledged that sustainability is currently contingent on leadership buy-in and commitment to allocating staff time to the program, which is subject to change according to competing demands. To ensure long-term sustainability and adoption of similar programming in other health systems, shifts in health system policy will be needed to better and adequately reimburse for disease management services using this team-based care approach.

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Implications for Policy & Practice

- Effective hypertension management, and chronic disease management more generally, requires the development of patient resources that go beyond prescriptions and prescribing treatments. Disease education, self-monitoring, and identification of patient population-specific barriers are needed.
- Expansion of the care team, including allowing non-physician providers to support medication adjustments, can improve patient outcomes while supporting medical team satisfaction.
- Sustainable implementation of team-based care for chronic disease management at Federally Qualified Health Centers requires that the U.S. health system reimburses for the care services provided by all care team members, including clinical pharmacists and community health workers.
- Using a bottom-up approach to solve barriers to chronic disease management can help ensure that all stakeholder needs are met.
- Developing patient resources that are tailored to their language, literacy, and health literacy needs can help improve communication, build rapport, and support patient engagement.
- Regardless of which intervention is implemented, adoption and acceptance of its components require strategic tailoring to meet the needs of the target audience. Each site, provider type, and patient population varies in its capacity to implement the proposed changes.

Table 1.

Challenges Encountered and Solutions Implemented

Key Area	Challenge Encountered	Solution(s) Implemented
System- and Provider- Level		
Workflows/ Documentation	Documentation of self-measured BP values within the EHR was not clearly defined	• Worked with IT and EHR vendor to establish clear data field for entry of SMBP values • Implemented staff training and reminders on consistent use of new data fields • Developed patient follow-up workflows for CHWs to collect SMBP values on a weekly basis and calculate 7-day averages which allowed for providers or CPs to adjust medication as needed
Staffing	Medical team did not have sufficient time to provide adequate patient education and support	• Added CPs and CHWs to the disease management team to create opportunity for staff to devote more time to patient education • CPs provided medication therapy management and adjusted medications, helping to reduce providers' disease management burden
	CHWs were not adequately trained to support hypertension management	• Trained CHWs to provide basic disease and lifestyle education and work collaboratively with CPs to support medication adherence
	Communication and coordination among medical staff were not optimal	• Had CPs lead the program, which created an effective link between provider and support staff that improved team coordination and capacity to reach out to patients
Patient-Level		
Patient Education	Existing education materials were intimidating and hard for patients to understand	• Created new materials with simplified text, increased use of pictures, and larger fonts • Vetted and curated existing, publicly available online educational videos to support patients who were low-literacy and/or preferred more interactive/fun content
	Patients did not understand significance of BP values or know their BP goals	• CPs and CHWs provided one-on-one education explaining BP values • Adapted color coded education materials to highlight which BP values were ideal
	Patients would easily lose handouts	• Educational messaging was printed on stickers and durable postcards to stand out from medical paperwork • Folders were provided to organize educational materials
Medication Use/ Adherence	Patients did not know which medications they were prescribed or understand their importance/function	• CPs met with patients to help with understanding of medications and organizing them based on patients' chronic conditions • Discussed with patients the importance of their medications in managing their chronic conditions, including how and when to take them
	Patients did not take medication consistently	• CPs and CHWs regularly assessed medication use and identified barriers to adherence • CPs helped patients organize medication and create medication schedules • Provided tips and tools for consistent use of medication (e.g., encouraged strategies such as use of alarms, provided pillboxes)
	Patients had concerns about medications or experienced suboptimal outcomes	• CPs provided individualized support and education to address patient concerns • CPs adjusted medication doses or prescriptions to account for any intolerances or barriers to access (i.e., prescription not covered by insurance, patient side effects)
Patient Follow-Up	High no-show rate for follow-up visits and lab-work	• Offered telemedicine visits for follow-up on SMBP values • Offered gift card incentives to bring patients back into the clinic • Paired BP follow-up visits with other appointments patients were already scheduled for • Expanded the type of staff who would engage in patient-follow up to increase appointment availability and flexibility to accommodate patients' schedules

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Key Area	Challenge Encountered	Solution(s) Implemented
Behavior Change	Patients needed additional educational support to make behavior changes	• CHWs met regularly with patients to provide encouragement and support • Developed a standardized list of 8 interventions (including lifestyle changes) that patients could engage in to support blood pressure control. The standardized list also facilitated clear and consistent communication with medical staff.
	Patients required tools to implement behavior change	• Provided samples of sodium-free seasonings to encourage decreased sodium intake • Provided pedometers to promote walking, increasing steps per day, and weight loss • Provided patients with home BP monitors and education on how to use them properly and track their measurements

Key: BP=Blood Pressure; CHW=Community Health Worker; CP=Clinical Pharmacist; EHR=Electronic Health Record; IT=Information Technology; SMBP=Self-Measured Blood Pressure

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