



NATIONAL ASSOCIATION OF COMMUNITY HEALTH CENTERS PARTNERSHIP SHOWS QUICK HYPERTENSION CONTROL RETURNS

Two-Year Program Pilots Million Hearts® Quality Improvement Tools

BACKGROUND

Of the 75 million Americans who have hypertension, almost half do not have the condition under control, putting them at increased risk for having a heart attack or stroke. About 12 million of these Americans don't know their blood pressure is too high and are not receiving treatment to control it, even though most of them have health insurance and visit a health care provider each year.

Million Hearts®, a national initiative with the ambitious goal to prevent 1 million heart attacks and strokes by 2017, champions strategies to systematically improve detection, diagnosis, and treatment of patients with elevated blood pressure served in ambulatory clinical settings.

PROJECT DESCRIPTION

Million Hearts® established a two-year cooperative agreement with the National Association of Community Health Centers (NACHC) to pilot the Million Hearts® quality improvement strategies and tools to improve detection and control of high blood pressure in community health centers that serve populations disproportionately burdened with hypertension.

NACHC recruited the following 11 federally qualified health centers (FQHCs) to participate in this project:

- [ARcare, Augusta, AR](#)
- [La Maestra Community Health Centers, City Heights, CA](#)
- [Neighborhood Healthcare, Escondido, CA](#)
- [Golden Valley Health Centers, Merced, CA](#)
- [Altura Centers for Health, Tulare, CA](#)
- [Grace Community Health Center, Gray, KY](#)
- [Sterling Health Solutions, Inc., Mt. Sterling, KY*](#)
- [Mountain Comprehensive Health Corporation, Inc., Whitesburg, KY](#)
- [Affinia Healthcare, St. Louis, MO](#)
- [Myrtle Hilliard Davis Comprehensive Health Centers, Inc., St. Louis, MO](#)
- [Jordan Valley Community Health Center, Springfield, MO](#)

* Sterling Health Solutions, Inc., joined in the second year of the project.

METHODS

In the first year of the pilot (July 2014–June 2015), the health centers developed strategies to improve hypertension detection and diagnosis. The activities for the second year (July 2015–June 2016) focused on implementing interventions from the [Million Hearts® Hypertension Control Change Package](#) to bring patients with uncontrolled hypertension to control.

In the first year, NACHC brought on 10 FQHCs to work with their Health Center Controlled Networks (HCCNs) to identify patients who were already in care and at risk for undiagnosed hypertension by using data from their electronic health record (EHR) systems. The HCCNs collaborated with population health management vendors to help the FQHCs query their EHR data repository, using pre-specified clinical criteria and an electronic screening algorithm (see Fig. 1). By January 2015, the care teams had these actionable data available to inform their care processes. The primary care teams in the FQHCs developed new care processes, such as designing and implementing a diagnostic protocol to eliminate the open loop of “two or more elevated

Fig. 1: NACHC Clinical Criteria for Potentially Undiagnosed Hypertension

Inclusion

- ≥ 2 elevated BP readings (≥ 140 SBP or ≥ 90 DBP) at two separate medical visits, past 12 months
- A Stage 2 reading (≥ 160 SBP or ≥ 100 DBP) at any medical visit in the past 12 months

Exclusion

- Other diagnoses: pregnancy, end-stage renal disease (ESRD)
- Death

readings” in the current diagnostic guidelines, flagging the patients with potentially undiagnosed hypertension in their EHR systems to improve pre-visit planning and outreach, and scheduling follow-up blood pressure screenings. A compilation of best practices in fixing the systematic problems that lead to hypertension being undiagnosed that emerged from this work is available in the [NACHC Undiagnosed Hypertension Change Package](#).

From July 2015 through June 2016, the participating health centers, with the addition of Sterling Health Solutions, Inc., transitioned their focus to implementing interventions from the [Million Hearts® Hypertension Control Change Package](#). The primary care teams at the 11 health centers came together to discuss the aspects of hypertension control that were most in need of improvement and to select corresponding interventions from the Change Package to best address those identified issues. Teams then prioritized where to target efforts, based on feasibility, cost, and estimated impact,

and began deploying the Plan-Do-Study-Act (PDSA) cycles to test their chosen interventions in their clinical settings.

RESULTS

Of the approximately 200,000 patients for whom data was collected from the 11 health centers, approximately 74,000 had hypertension (a 36% prevalence), and roughly 10,000 additional patients had high blood pressure readings but remained undiagnosed with hypertension. Findings from a cohort of these patients suggested that 32% of the patients who were brought back for a follow-up blood pressure screening were ultimately diagnosed with hypertension. The health centers felt that the exercise of finding the potentially undiagnosed was extremely helpful and motivating regarding the use of health IT in supporting improvements in patient care. In addition to identifying thousands of additional patients in need of intervention, the health centers established processes to reduce the likelihood of missing future diagnostic opportunities.

Although blood pressure control was not the primary focus of year 1, preliminary data suggested the participating health centers increased their average blood pressure control rate by 3%, a statistically significant improvement (z -score = -6.1266 , $p < 0.05$), within the first six months of finding patients with undiagnosed hypertension.

At the end of the second year of activities, the 11 health centers collectively improved their blood pressure control rates by 8.7% to a final center average blood pressure of 60.5% (January 2015–June 2016), with two health centers improving their blood pressure control by more than 10%, three additional health centers meeting this target in July 2016, and one health center getting to a blood pressure control rate of over 76%. The patients whose blood pressure was not brought to control benefited from a reduced overall risk of heart attack and stroke, as evidenced by an average reduction in systolic and diastolic blood pressure of 8.4 mmHg and 4.1 mmHg, respectively, across the participating health centers.



Grace Community Health Centers achieved rapid and sustained improvement, going from 52.9% in January 2015 to 69.9% in June 2016. Key interventions that were deployed were giving provider-specific feedback, including peer reviews by clinical pharmacists; focusing on improving the accuracy of blood pressure measurements by taking repeat measurements, including documenting them in appropriate EHR fields; and using automated office blood pressure machines for borderline hypertension or suspected white coat syndrome cases (see Fig. 2).

Sterling Health Solutions, Inc. focused on adhering to a blood pressure control protocol and providing blood pressure self-monitoring services for their patients. Sterling also purchased a population health management system and used run charts to understand and act on drivers of change. Sterling’s blood pressure control improved from a baseline of 58.6% in October 2015 to 68.0% in June 2016.

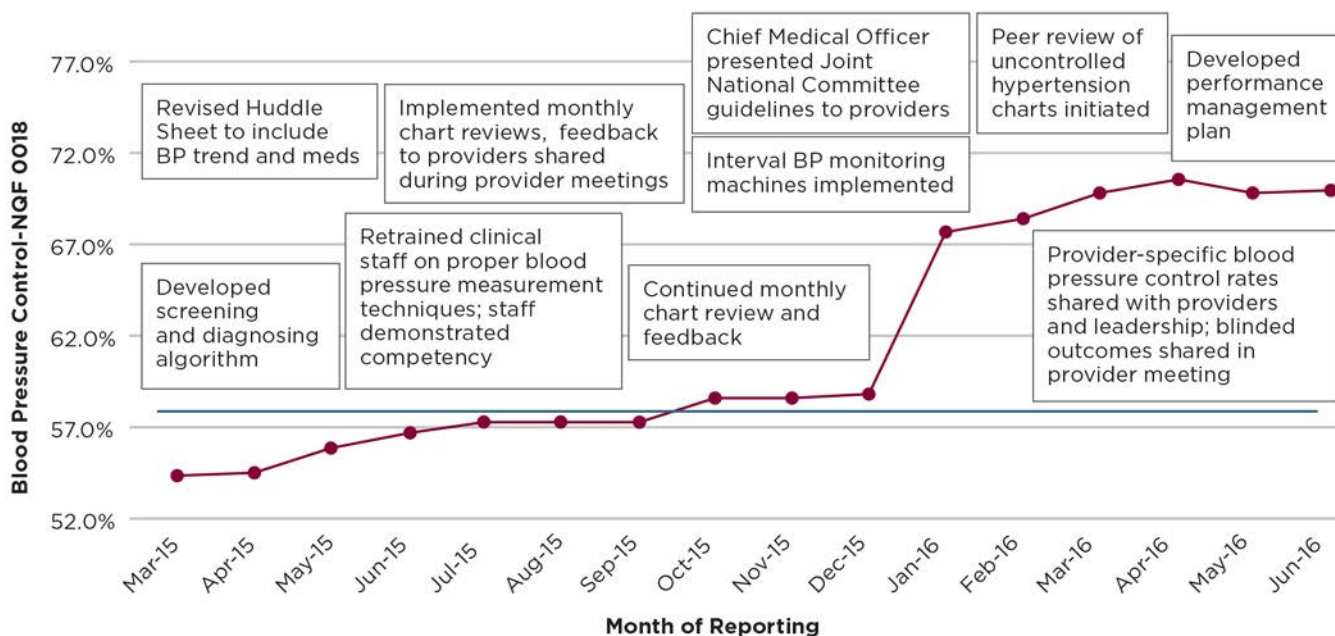
Neighborhood Healthcare demonstrated excellence in identifying patients with undiagnosed hypertension and bringing their blood pressure under control. While starting with a relatively high blood pressure control rate of 72.4%,

Neighborhood was still able to improve to a blood pressure control rate of 76.2%. Neighborhood Healthcare’s work to find undiagnosed hypertensive patients was featured at the February 23, 2016, [National Association of Chronic Disease Directors \(NACDD\) Fireside Chat on Identifying Undiagnosed Hypertension](#).

Golden Valley Health Centers, ARcare, and Mountain Comprehensive Health Corporation were successful in improving their blood pressure control rates by 9.3%, 9.1%, and 8.4%, respectively, by June 2016, reaching or surpassing the 10% target in July 2016. These practices elected to focus on key fundamentals, such as staff training on proper blood pressure measurement techniques, implementation of and adherence to protocols, and use of health information, to inform their focused quality improvement approaches.

La Maestra, Affinia, and Jordan Valley saw notable improvements in their blood pressure control rates, especially during the final months of the project, when they concentrated efforts on adhering to their practices’ hypertension treatment protocols and (for Affinia and Jordan Valley) engaging pharmacists in their expanded care teams.

Fig. 2. Grace Community Health Center NQF 0018—Blood Pressure Control Run Chart



La Maestra also engaged health educators as part of a hypertension education curriculum that included guidance on self-measured blood pressure monitoring with clinical support.

LESSONS LEARNED

Focusing on improving diagnosis and control of hypertension can yield impressive results relatively quickly. The tools outlined in the Hypertension Control Change Package were useful in achieving improvements in control. This project also offered the following lessons:

- Thousands of people with uncontrolled hypertension are routinely seen by providers. HCCNs and IT networks can play an important supporting role in helping busy clinicians use health IT-based algorithms and population health management software to properly diagnose and treat these patients.
- Focusing efforts on improving the detection and diagnosis of hypertension can help care teams improve their overall blood pressure control, despite the increase in hypertension prevalence.
- Adding a parameter to establish the maximum number of follow-up visits that may occur before a diagnosis definitive of hypertension, white coat hypertension, or other condition is made prevents patients with consistently elevated blood pressure measurements from being caught in a loop of follow-up visits and remaining undiagnosed, untreated, and uncontrolled.
- Taking accurate blood pressure readings plays a critical role in prompting health care teams to take appropriate actions to lower their patients' blood pressure.
- Strategies including using patient registries to follow up with hypertensive patients who remain uncontrolled, providing patient education and self-management support, and seeing patients for blood pressure checks on a walk-in basis all rely on an expanded care team.
- Practices' use of real-time, actionable data drives improvement. (Guidance on the selection and use of population health management products and the data they can provide is available in the [Population Health Management Software: An Opportunity to Advance Primary Care and Public Health Integration](#) report.)
- Participating in these structured quality improvement efforts helped ensure expanded care teams were working at the top of their license and playing key roles that allowed the provider to focus on higher-level clinical decision-making and care.