Case Study

Healthy Hearts for Marylanders

Healthy Hearts for Marylanders was a collaboration between the Maryland Department of Health and Mental Hygiene's (MDDHMH) Center for Chronic Disease Prevention and Control (CCDPC) and the Mid-Atlantic Association of Community Health Centers (MACHC) from 2009 to 2012. It provided technical assistance to federally qualified health centers (FQHCs) across the state to achieve improvements in quality of care and health outcomes—particularly outcomes related to the ABCS[I] of heart health—among patients diagnosed with diabetes.

BACKGROUND

Every 33 minutes, one person in Maryland dies from a heart attack, stroke, or other cardiovascular disease-related event.[1] Heart disease and stroke are the first and third leading causes of death in Maryland respectively, and together account for one out of every three deaths (30.4%).[2] Additionally, the age-adjusted heart disease mortality rate for blacks is 1.3 times higher than for whites.[3] Disparities also exist for major risk factors, including hypertension. Almost 1.4 million adults in Maryland have hypertension, and non-Hispanic blacks report higher rates of hypertension (38%) than non-Hispanic white (31.9%) or Hispanic (19.4%) groups.[4]

Aim of the Initiative:

Improve quality of care and health outcomes—particularly outcomes related to the ABCS of heart health—among patients diagnosed with diabetes at FQHCs across Maryland.

Diabetic patients are particularly at risk for developing cardiovascular disease. According to CDC, heart disease is the leading cause of diabetes-related deaths (65%) with death rates two to four times higher in those with diabetes than adults without diabetes. Individuals with diabetes are also at risk for microvascular and macrovascular complications.[5]

OVERVIEW OF THE INITIATIVE

The overall aim of Healthy Hearts was to improve quality of care and health outcomes related to HbA1c, blood pressure, cholesterol, and smoking cessation among patients with diabetes at FQHCs across Maryland. The target population included Baltimore residents from 18-75 years of age with a type 2 diabetes diagnosis and at least one documented blood pressure reading, HbA1c measurement, and LDL cholesterol measurement at a participating FQHC. Pregnant women were not included in the target population.

CCDPC established four Healthy Hearts Key Performance Indicators (KPIs):

- Increase the percentage of HbA1c Control (<7 percent) to at least 65 percent or 10 percent above baseline.
- Increase the percentage of blood pressure control (< 130/80) to at least 65 percent or 10 percent above baseline.

[I] The ABCS are: Aspirin therapy when appropriate, Blood pressure management, Cholesterol control, and Smoking cessation. (Million Hearts. "The Initiative." Available at http://millionhearts.hhs.gov/aboutmh/achieving-goals.html. Accessed 5-28-2014.)

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- Increase the percentage LDL control (< 100 mg/dl) to at least 65 percent or 10 percent above baseline.
- Increase the percentage of non-smokers to at least 65 percent or 10 percent above baseline.

Key Partners

Key state-level partners include CCDPC and MACHC. Key local/clinic partners included two pilot FQHCS, one of which was Total Health Care.

State Health Agency: CCDPC

Throughout Healthy Hearts, CCDPC provided funding, established KPIs, provided strategic planning support, and connected Healthy Hearts to broader state efforts and resources. According to local and clinic partners, additional possible roles for public health could include creating a system to upload electronic medical records (EMR) data to a clinical dashboard or health information exchange and providing support for case management infrastructure.

Spotlight: State Health Agency Role

CCDPC's key roles included:

- Providing funding.
- Establishing KPIs.
- Providing strategic support.
- Brainstorm solutions to site-specific barriers and challenges.
- Linking sites to MDDHMH services.
- Holding quarterly in-person or conference call meetings with MACHC address issues or challenges.
- Participating in monthly meetings with sites.

State Partner: MACHC

MACHC is a regional primary care association[II] serving 19 FQHCs and other safety net organizations in Maryland and Delaware. MACHC provides its members with a variety of services, including data assessment, surveillance, workforce development, community development, training and technical assistance, leveraging revenue for health centers, clinical quality improvement initiatives, building partnerships and alliances, and capital planning.

Local Partner: Total Health Care

Total Health Care, Inc. (THC) is an FQHC that has served downtown Baltimore's west side for more than 40 years. THC has eight sites serving more than 38,000 patients. It offers a variety of primary care services, including pediatrics, internal medicine, family medicine, and OB/GYN, plus ancillary services such as behavioral health, pharmacy, substance abuse and misuse, and HIV.

Activities

In 2009, CCDPC invited MACHC to serve as the administrator for Healthy Hearts. At the time, MACHC was completing a HRSA-funded health disparities collaborative and Healthy Hearts was an opportunity to build on the momentum generated through the collaborative. Healthy Hearts also allowed MACHC to simultaneously address diabetes, hypertension, and smoking cessation. Once CCDPC awarded MACHC the Healthy Hearts funding, MACHC hired Quality First Healthcare Consulting, Inc., a clinical advisory

[II] A Primary Care Association provides training and technical assistance to potential and existing health center program grantees and look-alikes.

consulting firm with nursing and quality improvement (QI) expertise, to manage day-to-day and data-related activities.

Site Recruitment—MACHC recruited FQHCs within the Baltimore city region. Through webinars, conference calls, and one-on-one meetings, MACHC staff made the case to FQHCs for participating in Healthy Hearts by highlighting data on health disparities in cardiovascular disease and diabetes, the benefits of participating in collaborative work around clinical quality improvement, and Healthy Hearts resources and support available to participating FQHCs. Incentives to participate included funding, opportunities to enhance quality of care around heart health by establishing systems for using population-level data, and improving care delivery systems. In addition, the systems and processes established through Healthy Hearts would prepare FQHCs for patient centered medical home (PCMH) certification.

Initially, two FQHCs in Baltimore, including THC, were selected to participate. Each FQHC has multiple sites and Healthy Hearts involved two demonstration sites from each for a total of four sites. THC has a long history of commitment to QI and had already been actively tracking hypertension metrics, THC staff thought that participating in Healthy Hearts was a logical step.

Baseline Assessment— Quality First Healthcare Consulting conducted a baseline assessment with each site that included:

- Claims data analysis for a 12-month period (January-December 2009) to identify patients to include in ongoing data analysis.
- Baseline measurements among these patients for HbA1c levels, blood pressure, LDL cholesterol levels, and smoking status.
- Onsite medical record reviews.
- Supplemental information, including demographics, BMI, medication regimen, and smoking cessation counseling.
- Site completion of a version of the Improving Chronic Illness Care Assessment of Chronic Illness Care (ACIC).

Quality First Healthcare Consulting imported data from the sites' EMR systems into Microsoft Excel to calculate baseline metrics. These results were included in a baseline report and summarized in a comprehensive final report submitted to CCDPC. ACIC's outcomes allowed MACHC and the sites to better understand current chronic disease delivery systems and identify opportunities for improvement.

Data-Driven Quality Improvement Activities—Based on the baseline assessment findings, MACHC and each demonstration site collaboratively identified specific interventions that would advance the sites' chronic care management systems. Sites adopted the American Diabetes Association (ADA) clinical practice guidelines for diabetes management to ensure the same standards of care were being used across all sites. These guidelines include blood pressure management goals of <140/80 and, in some cases, <130/80. Options for interventions were consistent with the 2010 ADA Standards of Medical Care in Diabetes and included:

- Implementing a team-based care model that included referral to a pharmacist or other qualified professional for medication self-management education.
- Inclusion of nutrition education within the care delivery model.
- Blood pressure checks at every visit.

- Monthly data presentations at clinical staff meetings.

Strategy options for the sites to achieve interventions included instituting reminder systems, academic detailing, care coordination systems, and self-management education with patients.

Sites used the Plan, Do, Study, Act (PDSA) model to test interventions. MACHC QI staff held monthly "learning collaborative-style" meetings and calls with the sites to provide technical assistance, training, and guidance. The calls included data-driven discussion about sites' progress toward goals, successes and challenges, and opportunities for collaboration between FQHCs on broader initiatives.

THC chose to implement several interventions, including: (1) providing manual blood pressure cuffs in each of THC's 72 exam rooms, and (2) making changes to its EMR system such as adding blood pressure check reminders, allowing multiple readings, and adding fields for details such as blood pressure measurement method that could impact measurement accuracy (machine versus manual readings and where the cuff was placed on the arm). THC also initiated a medication management program in partnership with a pharmacist to address barriers to medication adherence and conduct medication reviews. Individual providers were closely involved throughout the process to ensure intervention and data integrity. For example, providers said they wanted to be able to compare their performance to peers on the Healthy Hearts KPIs in a blinded format, so a stoplight reporting system was adopted.

THC belongs to the Community Health Integrated Partnership (CHIP) in Maryland, a group that provides health IT and business management services to health centers across the state. CHIP provides members access to the GE Centricity EMR system as well as health IT support to help members tailor the system to their needs. THC worked with CHIP to make the improvements to its EMR system described above.

Ongoing data analysis—Sites completed two data collection tools each month and submitted them to Quality First Healthcare Consulting:

- A monthly chart audit data collection tool that collected data on the last recorded blood pressure for individuals in the target population, as well as the KPI metrics.
- A monthly intervention log that indicated how sites were adapting their intervention strategies based on the most recent data reports.

Quality First Healthcare Consulting, in turn, shared with sites the following reports:

- Monthly performance dashboards. The dashboards used a stoplight color-coding system to help providers understand how they were performing on the KPIs. THC providers found this system helpful and THC has adopted that reporting system for all population-level data reports.
- Quarterly performance measures summaries.
- Quarterly trending reports.

These reports were also submitted directly to CCDPC as part of MACHC's required quarterly reporting.

Final Process Analysis—Data collection ended in December 2012. Sites completed a final process evaluation survey that asked about the clarity of the project's objectives, facilitators and barriers to successful implementation, and other issues.

Next Steps

Healthy Hearts ended in 2012 due to loss of funding. However, THC continues to use the Healthy Hearts model and KPIs in its PCMH efforts focused on diabetes and hypertension management. Specifically, THC secured a three-year PCMH grant to extend key elements of its Healthy Hearts work—including the performance dashboards and team-based care model—to its PCMH initiatives.

Tools and Resources

In addition to the tools and resources described above, other key resources included:

- Agency for Healthcare Research and Quality (AHRQ) clinical practice guidelines.
- MDQuit, Maryland's smoking quitline.
- Continuing education and CMEs on diabetes management, including expert presentations through AHRQ's comparative effectiveness initiative.

MEASUREMENT and ACCOUNTABILITY

Measurement and accountability mechanisms, including baseline assessment, ongoing regular data collection/analysis throughout the course of the initiative, and final process analysis, are described above. In addition, as an FQHC, THC is required to report annually to HRSA on the UDS. THC also presents UDS data quarterly to its board of directors to inform internal QI efforts to address conditions common among its patient population, particularly hypertension and diabetes. CHIP helped THC build custom UDS reports that included blood pressure.

Data-related Challenges

When Healthy Hearts implementation began, some of the participating sites were just establishing an EMR system. As a result, sites faced challenges accessing data from these systems, understanding population-level data, and effectively using EMR data for QI. For example, THC's system allowed only one-way communication with its practice management system, which created challenges in extracting ICD-9 codes.

Even when an EMR system was in place, many health records within the system had incomplete data, resulting in validity issues. A major finding in the baseline analysis was that 51 percent of reviewed medical records were missing documented values for several key clinical measures (e.g., blood pressure, HbA1c, and LDL cholesterol). In addition, many site staff lacked training and expertise needed to extract data for quarterly reports to MACHC. To address this, Quality First Healthcare Consulting provided ongoing training and technical assistance to site staff to improve their skills in data extraction and interpretation.

OUTCOMES

Over the course of implementation, Healthy Hearts reached more than 175,000 Marylanders. According to the Healthy Hearts Final Report:

- The program resulted in an increase in blood pressure control (<130/80) from 17 percent at baseline (2009) to 44 percent within the participating sites. Although this is below CCDPC's goal, control rates exceeded Maryland and national HEDIS rates. Blood pressure management was the hardest KPI to achieve.

- The sites exceeded Maryland and National 2011 HEDIS benchmarks for the KPIs; exceeded 2011 Maryland Uniform Data System (UDS) core clinical measures benchmarks for HbA1c, BMI, blood pressure management, and smoking status; and made progress in assisting patients to stop smoking.[6]

The sites also identified additional opportunities to change their care delivery systems to better support blood pressure management. The greatest opportunities included focused QI and rapid cycle monitoring for intervention effectiveness and identifying and developing workflow processes to effectively monitor and manage individuals whose BP is greater than 130/80.[7]

Key successes for THC included achieving the systems changes described above. In addition, THC increased focus on the Healthy Hearts KPIs and established a foundation for ongoing efforts to improve quality of care for hypertension and diabetes. According to THC staff, THC experienced modest improvements in blood pressure measures across its patient population.

Although Healthy Hearts helped sites achieve numerous successes, the Healthy Hearts Final Report indicates three key challenges faced by sites: (1) obtaining population health data from their EMR systems; (2) lack of sufficient case management infrastructure; and (3) using data to drive clinical decisionmaking. In addition, the sites identified additional barriers including conflicting priorities and lack of project management capacity.

KEY RECOMMENDATIONS and LESSONS LEARNED

Clearly communicate goals. Clearly define performance indicators and specific deliverables in all contracts and other communications to prevent "scope creep" and ensure all partners are on the same page. Buy-in and commitment to project goals will be increased if the expectations and goals are reasonable and achievable.

Focus efforts. Focus QI efforts on just one or two specific interventions and clearly communicate those goals to all the necessary team members and stakeholders. Maintain a clear, consistent focus on these goals to help direct resources and energy in the most efficient way. Models such as PDSA cycles and learning collaboratives can help support this focus. THC found the monthly learning collaborative calls with MACHC and other participating sites particularly helpful to its own efforts.

Support high-quality case management infrastructure. Improved case management support can ensure adequate staffing for care coordination and avoid adding responsibilities to existing staff. State health agencies can support effective case management infrastructure either at the state level or by providing funding or other resources to local-level partners.

Recognize FQHCs' dual role. FQHCs are unique because they have roles both as public health entities and clinical providers. Partners can help them better address community-level health issues by providing frameworks to help providers understand their roles as part of the public health system.

Prioritize getting good data. Reliable data at the state, regional, and local level and regular, ongoing monitoring are major keys to success. Good, real-time data allows sites to monitor outcomes, compare themselves to comparable sites, and adapt interventions if trends are moving in the wrong direction. Getting good quality data requires providing adequate health IT and health informatics resources to

establish and manage data systems, as well as educating providers, other clinic staff, and partners on how to correctly enter, extract, analyze, and use data to inform QI efforts. This may involve practice-level EMR system support (such as what CHIP provides to its members) or working one-on-one with an individual provider to train them on the correct place in the EMR to enter blood pressure measurements. Creating easy-to-use data systems may involve using outside technical support from external partners to fill gaps in internal capacity.

CONDITIONS AND INFRASTRUCTURE THAT SUPPORT SUCCESS AND SUSTAINABILITY

State Level:

- Prioritization of heart disease and diabetes at the state level. This was facilitated in large part by ongoing advocacy of MDDHMH as a whole and CCDPC in particular.
- Constant communication between MACHC and CCDPC about how to meet Healthy Hearts goals together.

Local/Clinic Level:

- Buy-in from the entire site executive leadership team. This helps avoid sudden conflicts in priorities and ensures resources will be funneled to support implementation.
- Reliable, real-time EMR data.
- Strong, committed project management at each site.
- A learning collaborative component. This model is helpful because it facilitates information sharing and lessons learned between sites.
- Funding and resources to support skilled data management staff (either a consultant or in-house staff). According to the THC medical director, "You can have great ideas for quality improvement, but if you don't have the resources you need to implement them, they are not going to go anywhere."
- Direct technical assistance, support, and coordination by MACHC to the sites.

Provider Level:

- Buy-in from providers and all levels of staff. The THC administration achieved buy-in from providers by: (1) reviewing the QI requirements with the entire staff; (2) communicating the benefits of using population-level data; and (3) highlighting how THC sites measured up to other comparable FQHCs based on UDS metrics. It then involved providers in regular, ongoing discussions of how to improve outcomes.

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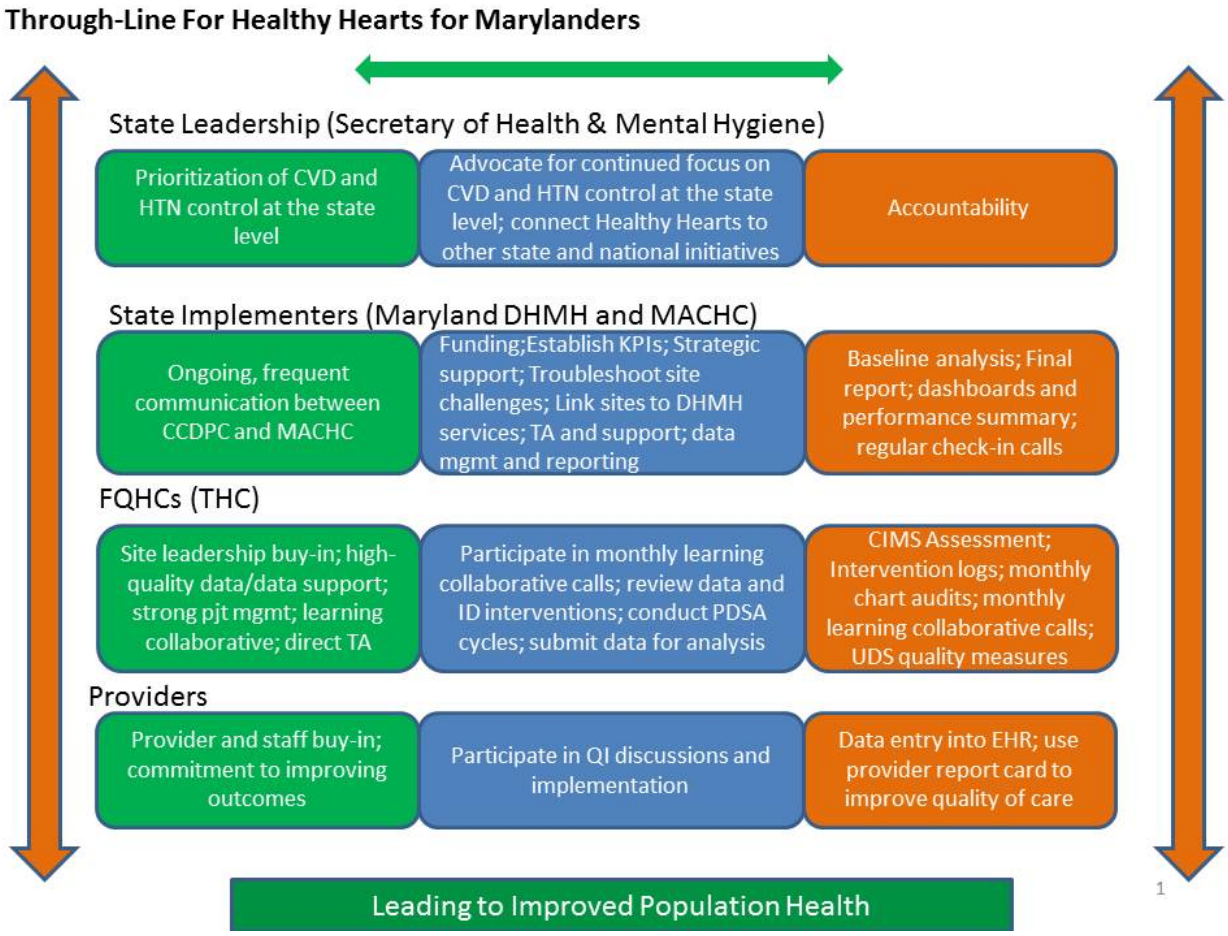

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[6] Ibid.
[7] Ibid.