

**NACDD**

# Issue Brief



## Data-Driven Systems Change and Improvement in Hypertension Management

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Blood pressure control is a significant, modifiable risk factor in preventing heart disease and stroke, and yet many patients' hypertension remains uncontrolled, and many others with high blood pressure have not yet been diagnosed and treated. Comprehensively addressing hypertension management should extend beyond care for individual patients and into changing organizational policies and processes to improve overall outcomes. NACDD's Cardiovascular Health Initiative shares resources and program information to help states improve identification and control of hypertension. In coordination with CDC's Division for Heart Disease and Stroke Prevention, this NACDD Initiative hosts fireside chats and other learning opportunities with a focus on hypertension, including this fourth fireside chat and the follow up virtual roundtables that focused on health systems change through a partnership with the Massachusetts Department of Public Health and its Health Center Controlled Network, the Massachusetts League of Community Health Centers.

This fireside chat was moderated by Sallyann Coleman King, MD, MSC, CDC medical epidemiologist, and featured Anita Christie, RN MHA CPHQ, director of the Office of Clinical Preventative Services with the Massachusetts Department of Public Health (MDPH), and Diana Erani, MBA, Health Center Controlled Network director for the Massachusetts League of Community Health Centers (Mass League), which represents 50 health centers.

During the fireside chat, discussion focused on MDPH's approach to 1422 planning through a detailed capacity assessment process as well as its ongoing quality improvement work with selected sites. Ms. Erani provided an overview of the Data Reporting and Visualization System (DRVS) used to deliver feedback to 1422 clinical sites in collaboration with MDPH, and she also shared her perspective on institutionalizing data-driven technical assistance.



Five primary themes emerged: strategically aligning with current hypertension work; working within sites' existing cultural and tactical framework to most effectively implement a quality improvement approach; utilizing and developing tools that can provide timely and accurate data to support improvement; fostering clinical to community linkages; and successfully putting the data to work to identify people with potentially undiagnosed hypertension.

### **Strategic alignment with current hypertension work**

In order to identify areas of need, ensure resources are not duplicated, and to strategically enhance ongoing work, MDPH conducted a survey to capture information on existing hypertension control efforts throughout the state. With this information in hand, it mapped partners' hypertension-related activities, both internal and external to the department, including Million Hearts®, Quality Innovation Network/Quality Improvement Organization (QIN/QIO), Prevention and Wellness Trust, I305, and the Chronic Disease Partnership in Massachusetts. This map enabled the team to examine comprehensively the work being done around the state. It used this information to inform decisions on appropriate 1422 target communities. MDPH also examined socioeconomic status, race, and ethnicity, and other demographics, as well as the availability of resources to hone in on the appropriate counties to include as a means of addressing health equity — an important component of 1422. This deliberate assessment led to the selection of four counties in underserved, urban and rural areas with high-risk hypertensive populations: Fall River/SSTAR Family HealthCare Center, Franklin County/Community Health Center of Franklin County, Hampshire County/Hilltown Community Health Center, and Springfield/Caring Health Center.

This alignment with existing hypertension efforts throughout Massachusetts also established the

foundation for linkages between community health centers (CHCs) and community-based organizations. Previous work had established connections between clinical organizations and YMCAs offering the National Diabetes Prevention Program. MDPH sought to build on these relationships and to adopt this successful program model to hypertension, capitalizing on established workflows and enhancing the use of the e-Referral process.

### **Working within sites' existing cultural and tactical framework to most effectively implement a quality improvement approach**

MDPH employed the services of an experienced consulting group to do an in-depth assessment of selected sites. This assessment examined workflows, staffing patterns, electronic medical record (EMR) capabilities, and available resources within CHCs over the course of four months. Armed with this detailed understanding of current approaches to and the culture around hypertension control at each CHC, MDPH identified points in need of improvement in hypertension management, such as in obtaining measurements and accurate data entry. Though lengthy, this assessment and planning process laid the foundation for a targeted, effective, and efficient quality improvement methodology.

Developing this thorough understanding of current practices and patterns at each site enabled MDPH to “meet sites where they are.” This approach, though most often utilized when discussing patient care and their readiness to initiate behavior change, can be applied to organizational improvement. In this case, and due to its in-depth site-specific knowledge, MDPH could work within each site's existing framework and structure to enact appropriate change. This approach also helped MDPH gain buy-in and support from CHC leadership, a critical component to successful QI implementation, as well as to begin to develop community-based hypertension resources.

## Utilizing and developing tools that can provide timely and accurate data to support improvement

As a Health Center Controlled Network (HCCN), the Mass League seeks to assist member CHCs with the adoption and optimization of health information technology, particularly for improved practice management and reporting. MDPH collaborated with the Mass League to develop registries to identify undiagnosed hypertensive patients. The Mass League facilitates this through use of the Data Reporting and Visualization System (DRVS), a web-based reporting platform that collects data from individual CHCs including demographic, clinical, and social determinants of health information. DRVS was developed in 2009 by the Mass League in partnership with Azara healthcare. The system extracts data daily, directly from CHCs' EMRs, allowing CHCs and organizations such as the Mass League the ability to analyze near real-time data to develop improvement strategies to enhance clinical care and operational flow. DRVS is EMR agnostic, and is currently in use in 22 states. Individual CHCs typically pay for DRVS, and there is a recurring annual fee. The exact cost varies across states and the size of the health center.

CHCs use the daily data DRVS extracts to identify patients for follow up, benchmarking, and trend analysis in a variety of clinical areas. For this effort focused on people with potentially unidentified hypertension, MDPH and the Mass League collaborated to develop registries to identify clients who may not have been diagnosed with hypertension, but whose blood pressure is elevated. This undiagnosed population was defined as patients 18-85 years of age without a hypertension diagnosis, but with at least one blood pressure reading of systolic  $\geq 160$  mm Hg or diastolic  $\geq 100$  mm Hg at any visit (Stage 1) or two blood pressure readings at least one week apart of systolic between 140 and 160 mm Hg or diastolic between 90 and 100 mm Hg (Stage 2). They were able to filter these data by co-morbidity, language, location, age, and other demographics, further enabling sites to prioritize and target patients in need. The availability of these data also can be used to mobilize CHC senior leadership by demonstrating need for additional resources and measuring success of existing efforts, as well as informing decision-making and strategic planning.



## Fostering clinical-community linkages

MDPH and the Mass League also support clinical sites' use of e-Referral to institutionalize clinical-community connections. e-Referral is a means of electronically referring patients from the clinical setting to community programming directly from a clinical site's EMR. When a provider determines a patient could benefit from a community intervention, she indicates the appropriate organization and class to which she would like to refer the patient from a drop-down menu built into the EMR. The community-based organization is then notified of this referral and reaches out to the patient. They also can notify the originating organization of the status of the referral, thus closing the feedback loop. These referrals contain only demographic information, exempting them from privacy laws regarding the sharing of protected health information. This EMR modification approach embeds the referral process into CHC workflows, changing their systems to improve care, as well as enabling continuous communication on patient status.

Community health workers (CHWs) also play a central role in e-Referral, highlighting appropriate resources available to patients and suggesting, or in some case initiating, the e-Referral. By integrating them into clinic workflows, CHWs can promote linkages between health systems and community resources as an added benefit to reach adults with increased blood pressure. CHWs provide a vital frontline and culturally competent link to promote follow up with primary care (DP 1305). CHWs also are an important component in supporting improvement efforts, particularly in providing patient follow up and a seamless transition to the point of care in the community. Successful integration of CHWs in care teams by including them in hypertension workflows supports improved outcomes. CHWs can provide a continuous point of contact for patients, helping manage referrals and follow ups, and serving as a culturally and linguistically appropriate link between clinicians and patients. This is of particular value for people with newly diagnosed hypertension who may be overwhelmed with their options and their need for care. In Massachusetts, CHWs conduct significant outreach to people with potentially undiagnosed hypertension who are flagged in CHC registries — providing education, resources, and follow up, as well as guiding them to appropriate care.

## Hypertension

High blood pressure or hypertension in arteries is chronically elevated. It makes the heart to work harder than normal, a major risk factor for heart attack, stroke, and kidney disease. It could lead to organ damage and other complications. Preventative lifestyle changes.



Creating a detailed flowchart to lay out the workflow and step-by-step process is a valuable tool. Furthermore, a broad-based training approach diminishes reliance on an individual; with staff turnover and shifts in responsibility, everyone should be well-versed in the process and steps allowing for seamless transitions. This focus on training, which ensures all staff are bought in to the process and understand it, educates staff on the initiative and increases their comfort with and belief in the data provided by DRVS. This, in turn, increases their likelihood to work collectively toward improvement, as well as the overall accuracy of the data used to benchmark that improvement.

Using the DRVS data from the HCCN, the Mass League, MDPH created monthly progress reports to share with each I422 site. These reports include a variety of measures such as information on potentially undiagnosed hypertension registry patients and follow up and pre-visit planning efforts, as well as referrals to CHW services. MDPH staff review the reports with the I422 teams in-person or via conference call, discussing project updates and workflow tweaks or other changes that may have occurred, as well as ways to potentially further adjust their approach to identification of people with undiagnosed hypertension and hypertension management. This consistent and constant sharing of data is critical to the quality improvement process.

Moving forward, the Mass League is currently looking to add the PRAPARE tool to DRVS, which would expand its use beyond clinical data to more comprehensively support care. PRAPARE, the Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences (PRAPARE) is a survey developed by the National Association of Community Health Centers (NACHC) to standardize the collection of social determinants of health such as housing insecurities, employment, income, etc. (More information on PRAPARE can be found [here](#)). The availability of this information in DRVS would allow clinical care teams to address

patients' broad social needs, increasing referrals to appropriate community resources, and reducing barriers to care.

## Lessons learned and conclusion

This fireside chat provided attendees from a variety of states the opportunity to learn about Massachusetts' experience in enacting systems change to manage hypertension and their work in enacting data-driven improvement through DRVS and the Mass League. As part of the follow up virtual roundtables, several states sought to learn from the Massachusetts' experience with questions about the decision to initiate DRVS and the overall process for doing so.

Lessons learned include:

- Plan interventions that augment and enhance current initiatives, allowing sufficient time to comprehensively assess needs
- Build on current successes in each health delivery site by “meeting them where they are” to effectively implement quality improvement across systems
- Develop user-friendly tools that provide timely and accurate data to support improvement, increase and simplify the identification of at-risk individuals and provide benchmarking to measure and validate success
- Establish links between clinical sites and community-based organizations to provide expanded care options and share the burden of chronic disease management
- Cultivate a culture of quality improvement utilizing continual data sharing and forming sustainable relationships with community-based organizations

Massachusetts' detailed and work-culture — considerate approach to data-driven capacity building and quality improvement may serve as a model for others as they embark on this crucial step in improving hypertension outcomes.

## Additional Resources

Additional information can be found at:

Azara DRVS information: <http://www.azarahealthcare.com/solutions/azara-drvs/>

Fireside Chat: Health Systems Change in Hypertension Control: <http://www.chronicdisease.org/default.asp?page=CVHWebinars>

Health Center Controlled Networks: <https://bphc.hrsa.gov/qualityimprovement/strategicpartnerships/hccn.html>

MDPH QI Assessment Model Report: [https://c.ymcdn.com/sites/chronicdisease.site-ym.com/resource/resmgr/cvh/MA\\_FSC-\\_QI\\_Assessment\\_Model\\_.pdf](https://c.ymcdn.com/sites/chronicdisease.site-ym.com/resource/resmgr/cvh/MA_FSC-_QI_Assessment_Model_.pdf)

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