

## Community-Clinical Linkages to Improve Hypertension Identification, Management, and Control

*This issue brief discusses how public health agencies can work with clinical and community partners to improve hypertension control, and highlights examples of successful partnerships from the Association of State and Territorial Health Officials (ASTHO) Million Hearts Learning Collaborative.*

### BACKGROUND

Heart disease and stroke are the first and fourth leading causes of death in the United States, respectively. Heart disease alone is responsible for 1 in 4 deaths in the United States,<sup>i</sup> and each year, a staggering 1.5 million Americans have heart attacks or strokes.<sup>ii</sup> Hypertension is a major risk factor for heart attack and stroke, and uncontrolled hypertension affects 36 million individuals in the United States. At least 14.1 million of these individuals are unaware that they have hypertension, and 5.7 million know that they have it but do not have it controlled.<sup>iii</sup>

The national [Million Hearts initiative](#) focuses, coordinates, and enhances cardiovascular disease prevention activities across the public and private sectors with the goal of preventing one million heart attacks and strokes by 2017. Million Hearts aims to prevent heart disease and stroke by improving access to effective care, improving the quality of care for the “ABCS” of heart health,<sup>1</sup> focusing clinical attention on preventing heart attack and stroke, motivating individuals to lead heart-healthy lives, and improving prescription and adherence to appropriate medications for the ABCS.<sup>iv</sup>

Achieving Million Hearts’ goals requires collaboration between clinical, public health, and community partners to create “systems of care” spanning clinical, community, and public health settings that support individuals in achieving blood pressure control. The growing national emphasis on population health and preventive care— for example, through expanded health care coverage — highlights the importance of these linkages. A [2012](#)

### Opportunities for state health agencies to support sustainable, effective linkages between healthcare, community, and public health.

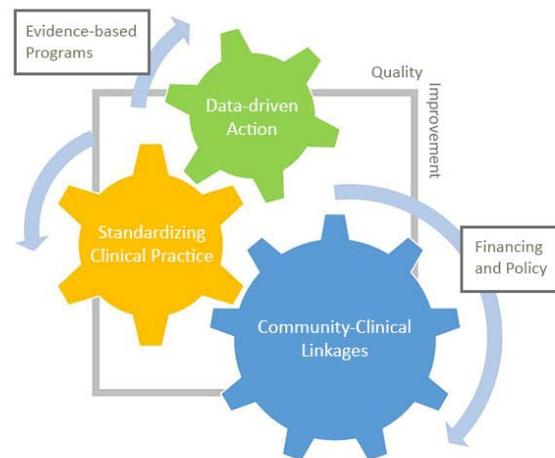
- Facilitate relationship-building between local public health agencies and providers and community organizations.
- Include providers, public health, and community services in referral systems, care coordination, and team-based care models.
- Develop state/community-wide standardized hypertension definitions and protocols.
- Identify, support, and promote integration of population- and patient-level data systems that inform quality improvement and patient panel management.
- Promote and support integrated care delivery models.
- Convene stakeholders across sectors to align state-level initiatives and resources.
- Support sustainability by leveraging multiple funding sources.

<sup>1</sup> The ABCS are: Aspirin therapy when appropriate, Blood pressure management, Cholesterol control, and Smoking cessation. Source: Million Hearts. “The Initiative.” Available at: <http://millionhearts.hhs.gov/aboutmh/achieving-goals.html>. Accessed 5-28-2014.

[report from the Institute of Medicine](#) recognized that new opportunities are emerging to bring public health and primary care together in ways that will yield substantial and lasting improvements for individuals, communities, and populations.<sup>v</sup>

Initiatives such as the Association of State and Territorial Health Officials' (ASTHO) [Primary Care and Public Health Collaborative](#) emphasize and support this integration.<sup>2</sup>

Hypertension management is an ideal focal area for integration efforts. ASTHO is supporting Million Hearts' focus on improving blood pressure control—as well as encouraging movement toward primary care and public health integration—by facilitating a [Million Hearts Learning Collaborative](#). Participating states use a quality improvement model to guide the work of cross-sector teams that include representatives from state and local health agencies, healthcare systems and providers, payers, community partners, and others.



These states use multiple “levers” to create and improve state-level systems. These levers include data-driven action, standardizing practice and protocols, and community-clinical linkages, as well as financing and policy. This issue brief focuses on one of these levers: increasing community-clinical linkages. The brief describes these linkages and highlights opportunities for state health agencies to partner with clinicians and communities in their own states.

## WHAT ARE COMMUNITY-CLINICAL LINKAGES?

The phrase “community-clinical linkages” is a blanket term referring to connections between community and clinical sectors to improve population health. This definition allows for flexibility for community-clinical linkage interventions to be applied to all public health areas and focus on the unique contribution that each sector brings to improving population health.<sup>vi</sup> Community-clinical linkages help ensure that people with or at high risk of chronic diseases have access to community resources and support to prevent, delay, or manage chronic conditions.<sup>vii</sup> These connections may be between any combination of community-based organizations (e.g., faith based communities, YMCAs, local institutions like libraries, farmers markets, fire halls, and EMS staff, community pharmacists, other community-based healthcare professionals), healthcare organizations (e.g., independent practices, hospitals, federally qualified health centers), pharmacies, or traditional public health (e.g., state or local public health agencies).

For example, a clinic might partner with its local public health agency to develop a referral system for screening hypertensive patients, or a clinic might partner with its local YMCA to offer discounted

<sup>2</sup> The PCPH Collaborative is a partnership of more than 50 organizations and more than 100 individual partners seeking to inform, align, and support the implementation of integrated efforts that improve population health and lower healthcare costs.

memberships for hypertensive patients. Similarly, the state health department might work with its Medicaid agency or private payers to create a payment structure for supporting community health workers or similar community-based healthcare professionals who connect patients with healthcare and community resources. All of these different groups of stakeholders and partners need to be considered to maximize resources and create comprehensive systems of care for patients with hypertension.

The following are some of the ways that partners can work together to create community-clinical linkages and improve hypertension control:

### **Developing a Community Screening and Referral System**

Local health departments, clinics, and community organizations can collaboratively establish community-based blood pressure screening programs and referral systems that connect individuals with hypertension to clinical care. Local health departments and other locations, such as faith-based community buildings and fire or EMS halls, often serve as blood pressure screening sites. Partners can create a referral system by which providers agree to accept patients referred from these sites and provide appropriate clinical care. Providers and local health departments can work together to refer and connect patients identified with hypertension at the clinic to community-based self-management resources. In addition, care coordination units—often supported by local health departments—offer services that connect residents with community services such as healthcare, medication assistance, transportation, housing, counseling, dental care, food assistance, utility assistance, and vision and hearing needs. Establishing referral systems to these community resources supports patient blood pressure self-management and addresses critical barriers to care, such as lack of transportation or medication costs.

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*In North Dakota, local health units have partnered with oil industry worksites to address hypertension among employees. Public health nurses visit selected sites to conduct blood pressure screenings and follow-up with employees. The public health nurses and community paramedics collect the data from the worksite screenings electronically on iPads, which is collected in a web-based data system. The state health agency is also building an e-referral system that will connect with the web-based data system.*

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**Establishing Community-Wide Definitions for Hypertension** – This requires bringing clinical, community, and public health stakeholders together to agree on specific cut points and definitions for hypertension. The state or local public health agency can partner with providers to come to a consensus on which definitions they want to use, and educate other clinicians, community sites, and pharmacies on the standard definition so that everyone is measuring blood pressure in the same way.

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*In New Hampshire, state and local health departments worked with partners to develop [Ten Steps for Improving Blood Pressure Control in New Hampshire](#). This step by step manual documents their strategy to improve hypertension control and provides instruction to practices hoping to support patients by systematically identifying and controlling their hypertension.*

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### **Standardizing Blood Pressure Measurement and Treatment Protocols**

– There are many benefits of adopting and using standardized blood pressure management protocols.<sup>viii</sup> For example, clinicians and care-teams should all use a similar protocol when measuring and managing blood pressure for their patients. States have the ability to take the lead on standardizing blood pressure protocols, and in creating

trainings and education for providers and community organizations that are identifying or treating patients for hypertension.

**Supporting Team-Based Care** – According to the [Community Guide for Preventive Services](#), “team-based care to improve blood pressure control is a health systems-level, organizational intervention that incorporates a multidisciplinary team to improve the quality of hypertension care for patients.”<sup>ix</sup> Teams consisting of the patient, primary care provider, nurses, pharmacists, dietitians, social workers, and community health workers work together to provide process support and share responsibilities of hypertension care to complement the primary care provider’s activities. The team members’ responsibilities could include medication management, patient follow-up, and adherence and self-management support.<sup>ix</sup> Many states have worked to link providers, pharmacists, care coordinators, and others to create a comprehensive system of care.

### **Facilitating Access to Community Resources that Support Healthy Behaviors**

– Communities have a wealth of resources that can support blood pressure management, including physical activity programs (e.g., local YMCAs, fitness classes, nutrition counselors), healthy foods (e.g., farmers’ markets, mobile health vans, healthy cooking demonstrations), and access to free and local blood pressure screenings (e.g., parish nurses, local health departments, fire/EMS halls). Health departments can help facilitate the connection between clinicians and community resources by leveraging public health nurses and community health workers, including parish nurses, to implement care coordination and community outreach initiatives. These coordinators can support blood pressure self-management and connect patients to evidence-based community resources and healthy lifestyle programs.

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*The Oklahoma Heartland Project (Heartland OK)—a care-coordination program in Oklahoma for patients with uncontrolled high blood pressure—connects the local county health department, regional medical center, a free community-based health clinic, more than 60 local providers, and pharmacists in a protocol-driven strategy to reduce uncontrolled hypertension. Heartland OK uses public health nurses to engage and connect patients identified with uncontrolled HTN to community resources. This model has resulted in 25 percent of Heartland OK patients previously diagnosed with uncontrolled high blood pressure meeting NQF 18 within 90 days of enrollment. Including public health nurses in the model allowed the project to identify patient specific barriers to adherence and have local community-based social services address them.*

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*Maryland's [Patients, Pharmacists, Partnerships \(P<sup>3</sup>\)](#) is a partnership between the Maryland Department of Health and Mental Hygiene and the University of Maryland School of Pharmacy to improve hypertension and diabetes prevention and control by partnering with community pharmacists to provide medication therapy management services to employees of self-insured employers across the mid-Atlantic region, including Maryland. The Maryland P3 program highlights the role of working with community pharmacists and employers.*

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### **Using Medication Therapy Management (MTM)**

– MTM refers to a group of services pharmacists offer to help patients better manage their drug therapy regimens and address medication-related issues. MTM has five elements: medication therapy review, personal medication records, medication action plans, intervention/referral and documentation, and follow-up. Systematic reviews and evidence-based initiatives have shown MTM to be highly effective in supporting better patient medication self-management, improving clinical outcomes, and reducing

healthcare costs for diabetes and other chronic conditions. Clinicians can connect with these programs and set up a referral process to help patients get assistance managing their blood pressure medication. The pharmacist can then link back to the provider with any follow-up.

## **Supporting Patient Self-Management of Blood**

**Pressure** – State and local public health departments can issue home blood pressure monitors to clinics, community sites, pharmacies, and other community-based organizations. Public health can work with clinicians to develop the standards, protocols, and referral processes for patients that are issued these monitors. Examples of community sites that might distribute these monitors include libraries, fire houses, and parish nurse programs. Health departments can also work with providers to develop referrals to community-based self-management resources (e.g., the [Chronic Disease Self-Management Program](#))

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*The Vermont Department of Health (VDH) partnered with libraries to loan home blood pressure monitors to community members for a month. VDH worked directly with the library association, which contacted its members, and 12 out of 15 wanted to participate. Practice facilitators (PFs) were assigned to all primary care sites. VDH informs PFs of which libraries have home blood pressure monitors and the PF works with their practice to connect them with the libraries. To market the program, staff developed eye-catching posters for display in the libraries to encourage people to connect with their doctors.*

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## **OPPORTUNITIES FOR STATE HEALTH AGENCIES**

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State health agencies have a number of opportunities to advance hypertension control by supporting “systems of care” that span clinical, public health, and community settings. First, states can emphasize these linkages in their state health improvement plans (SHIPs). State health agencies can bring clinical partners and communities into the SHIP planning process to make these linkages at the state level and ensure that the systems are in place to facilitate partnerships at the local level.

Second, state health agencies can identify and promote models that link clinical care with community resources. These models use professionals such as health coaches, patient navigators (PN), and community health workers (CHWs). An [ASTHO issue brief](#) recommended state health agencies support the development of PNs and CHWs in the healthcare system by forming collaborations and partnerships to establish core workforce competencies, long-term reimbursement protocols, and occupational associations that will enable them to thrive. Specific models that leverage these professionals include team-based care and patient-centered medical homes (PCMHs).

State health agencies can support health information technology, and help to improve and integrate data sets between public health, communities, and providers to facilitate data sharing and better care coordination. The ability to share data is crucial to effective care coordination and can help strengthen clinical-community linkages. For more ways state health agencies can support linkages through Million Hearts, read ASTHO’s [Key Recommendations: How State Health Agencies Can Support Million Hearts](#).

## STATE EXAMPLES—ASTHO MILLION HEARTS LEARNING COLLABORATIVE

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Since September 2013, ASTHO, with support from CDC, has been working with health agencies from 15 states, Palau, and the District of Columbia to achieve Million Hearts' goal through a learning collaborative focused on integrating public health and healthcare efforts to improve hypertension. The teams, made up of health agency staff, public or private health plans, local health departments, health IT experts, provider and community level practitioners, and others, are using a quality improvement process to partner across sectors to implement best practices and evidence-based policies to identify, control, and improve blood pressure. The state examples highlighted in this issue brief are all drawn from the participants in this learning collaborative. These examples outline specific ways participants have partnered with communities and clinicians to improve hypertension in their jurisdictions.

### OHIO COMMUNITY-BASED BLOOD PRESSURE SCREENING AND REFERRAL SYSTEM

Through ASTHO's Million Hearts State Learning Collaborative, the Ohio Department of Health (ODH) has formed many linkages with community and clinical partners to address hypertension in Ohio. From 2013-2014, ODH partnered with the Ohio Academy of Family Physicians (OAFP), Summit County Public Health (SCPH), KEPRO (the state quality improvement organization, or QIO),<sup>3</sup> and 11 family practices in Summit County to develop an integrated community-clinical system to screen, identify, manage, and refer individuals with hypertension to clinical and community resources to support better self-management of blood pressure.

ODH focused its initial efforts on Summit County, Ohio, which has a large refugee population and other vulnerable populations that face significant barriers to effective blood pressure management, including lack of transportation and financial barriers to affording medication. To address these challenges, SCPH's Care Coordination Unit<sup>4</sup> partnered with local EMS and physician practices to establish a community-based blood pressure screening and referral system for people screened in local fire halls.

- *Local Public Health Department/Community Partner Linkage* – In partnership with two Akron fire/EMS stations, SCPH created a comprehensive community-based screening and referral system. SCPH developed a hypertension screening guide and online survey tool to collect data from blood pressure screenings, which EMS staff used to conduct screenings at the fire halls. SCPH Care

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<sup>3</sup> QIOs are private, mostly nonprofit organizations that work to improve the effectiveness, efficiency, economy, and quality of services delivered to Medicare beneficiaries by reviewing medical care, helping beneficiaries with complaints about the quality of care, and implementing quality improvements throughout the spectrum of care. Source: Centers for Medicare and Medicaid Services. "Quality Improvement Organizations." Available at: <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityImprovementOrgs/index.html?redirect=/qualityimprovementorgs>. Accessed 6-10-2013.

<sup>4</sup> Care coordination units—often supported by local health departments—offer services that connect county residents with community services such as healthcare access, medication assistance, transportation, housing, counseling, dental care, food assistance, utility assistance, and vision and hearing needs. Establishing systematic referral processes to these types of community resources supports patient blood pressure self-management and addresses critical barriers to care such as lack of transportation or medication costs. SOURCE: Summit County Public Health. "Care Coordination." Available at <http://www.scphoh.org/COMMHEALTH/CARECOORD.html>. Accessed 7-23-2014.

Coordination staff (public health nurses) used the survey information to follow up with individuals they identified as needing additional support and access to community resources.

- *Local Public Health Department/Clinical Partner Linkage* – The care coordination unit also worked with physicians to track patients with hypertension lost to follow up, or those in need of blood pressure medication assistance or other psycho-social support services through referral tracking form. First, SCPH staff provided an orientation of the care coordination unit to the family practices. SCPH staff also developed a referral form to the care coordination unit and a hypertension drug formulary that includes community-based medication access resources. Most providers did not know the local health department offered those kinds of services, and were very enthusiastic about the new resources. SCPH also offered direct assistance to the practices to help them learn how to use the referral form and system, including how to use the hypertension registries to identify patients appropriate to refer to the care coordination unit. Internally, SCPH developed a referral checklist to determine the referred clients' additional needs.

## **ILLINOIS' FAITH-BASED COMMUNITY BLOOD PRESSURE SCREENING**

Illinois is working with clinical and community partners to establish community-wide hypertension definitions and protocols for a faith-based community blood pressure screening initiative and identify and refer individuals with hypertension to clinical care. Peoria County, one of two pilot counties in Illinois' Million Hearts Learning Collaborative work, is racially and ethnically diverse, and includes both metropolitan and rural areas. The median household income is below the state median, unemployment rates are high, and the county has higher-than-average hypertension-related hospitalization rates. The Peoria City/County Health Department convened healthcare providers and multiple health systems in the community to collaboratively establish standardized hypertension definitions and a community blood pressure screening protocol and guidelines.

Using data and GIS maps from the Illinois Department of Public Health (IDPH) showing hypertension-related hospital discharge rates by zip code within the county, partners identified three zip codes within the county that, in total, encompassed 43 percent of Peoria County's hypertension-related hospitalizations and 47 percent of the county's hypertension-related emergency department visits.

- *Public Health/Community Linkage* – Partners identified and engaged four faith-based communities in these zip codes and trained parish nurses to screen and refer congregation members to healthcare providers and community-based resources based on their blood screening results. To date, participating churches report that 39.6 percent of congregation members screened have hypertension and 46.8 percent have pre-hypertension. Nearly 9 percent of those screened have received referrals to healthcare providers. Throughout the initiative, IDPH has provided data to support decision making, as well as resources and guidance to local partners. This innovative partnership model is now being spread to additional counties throughout the state.

## **OTHER STATE EXAMPLES**

- **New Hampshire** – The Manchester Health Department partnered with the local YMCA to give Million Hearts patients access to a \$10/month membership. Community health centers identify

patients who are at risk for hypertension and refer them to the YMCA program. The YMCA also offers five free family memberships to each agency: five to health departments, five to clinics, and five to each elementary school in Manchester. It is up to each agency to decide how they want to use them, and each agency owns these memberships and can loan them out.

- **Maryland** – The Maryland Department of Health and Mental Hygiene is facilitating enhancing health information technology infrastructure between the state health information exchange (HIE), local healthcare providers, local health departments, and community-based chronic disease prevention and control resources to reduce readmissions and facilitate the utilization of lower cost outpatient healthcare services. The HIE is a data system created by a private vendor that is connected to hospitals and some private practices. Local health departments have a robust case management system and wanted to link this information system to the state HIE. They wanted to increase the ability of community organizations to document when they provide services, and link that information back to providers when they're seeing patients.
- **Arkansas** – The Arkansas Department of Health Local Health Units Prescott and Marked Tree partnered with clinicians to provide community team-based care for patients with uncontrolled hypertension in Nevada and Poinsett Counties. Using real-time hypertension rate data maps from Arkansas Blue Cross and Blue Shield, the state envisions establishing a hypertension system of care across all of its counties. Arkansas has also developed the [Community Team-Based Care for People with Uncontrolled Hypertension Protocol](#). Medicaid also promotes team-based care through its PCMH initiative.
- **Kansas Health Care Access Hypertension FITT Program** – The Kansas Department of Health and Environment has been working to standardize blood pressure measurement training for healthcare providers. Health Care Access, a free clinic in Lawrence, Kansas, offers a guide to implementing best practices and evidence-based policies for identifying, controlling, and improving blood pressure, which includes guidance for a nutrition program and developing a patient goal sheet.

## CONCLUSION

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Community-clinical linkages play a critical role in improving hypertension identification, management, and control. Clinical, public health, and community partners can collaborate to create “systems of care” spanning clinical, community, and public health settings that support individuals in achieving blood pressure control. State health agencies are crucial to this collaboration’s success and have a significant role to play as we continue to connect and create these systems of care to improve rates of hypertension across the country.

## RESOURCES

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**[Million Hearts webpage](#)**: This webpage provides information about the national Million Hearts initiative, including data on heart disease and stroke, ways that public health and healthcare stakeholders can support Million Hearts, and a wide variety of resources to support the ABCS of heart health, including hypertension management.

**[ASTHO Million Hearts webpage](#)**: This webpage presents an overview of the ASTHO Million Hearts Learning Collaborative and provides resources that state and territorial health agencies can use to get involved with and support the national Million Hearts initiative and hypertension management in general. Available resources include a Million Hearts State Engagement Guide, key recommendations for

how state health agencies can support Million Hearts, and case studies of state health agencies that have successfully partnered with healthcare stakeholders to address hypertension management.

**ASTHO Million Hearts Tools for Change:** This online “toolbox” includes tools and resources to support multidisciplinary partners in the ASTHO Million Hearts Learning Collaborative to implement strategies to improve blood pressure control. The materials in the toolbox cover the following areas: [community-clinical linkages](#), data-driven action, evidence-based programs, financing and policy, general hypertension data and information, quality improvement, and standardizing clinical practice.

**ASTHO-Supported Primary Care and Public Health Collaborative webpage:** These resources are guided by the Primary Care and Public Health Integration Strategic Map and focus on integrated efforts to improve population health and lower health costs.

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<sup>i</sup> Murphy SL, Xu JQ, Kochanek KD. “Deaths: Final data for 2010.” *Natl Vital Stat Rep.* 2013;61(4). Available at: [http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61\\_04.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_04.pdf). Accessed 7-25-2014.

<sup>ii</sup> CDC. “Million Hearts: About Heart Disease and Stroke.” Available at: <http://millionhearts.hhs.gov/abouthds/overview.html>. Accessed 7-25-2014.

<sup>iii</sup> Wright J. “All about Million Hearts: Preventing a million together.” Presented at the District of Columbia Health Million Hearts Meeting, May 21, 2014.

<sup>iv</sup> CDC. “Million Hearts: The Initiative.” Available at <http://millionhearts.hhs.gov/aboutmh/overview.html>. Accessed 7-17-14.

<sup>v</sup> IOM. “Primary Care and Public Health: Exploring Integration to Improve Population Health.” Washington, CD: The National Academies Press, 2012. Available at: <http://www.iom.edu/Reports/2012/Primary-Care-and-Public-Health.aspx>. Accessed 7-24-2014.

<sup>vi</sup> Rashon L, Jayapaul B. “CDC Evaluation Coffee Break: Evaluating Clinical-Community Linkages.” Presented on March 11, 2014. Available at: [http://www.cdc.gov/dhds/pubs/docs/cb\\_march\\_2014.pdf](http://www.cdc.gov/dhds/pubs/docs/cb_march_2014.pdf). Accessed 7-28-15.

<sup>vii</sup> CDC. “Chronic Disease Prevention and Health Promotion Domains.” Available at: <http://www.cdc.gov/chronicdisease/about/foa/docs/Four-Domains-Nov2012.pdf>. Accessed 7-28-15.

<sup>viii</sup> Frieden T, Coleman King SM, Wright J. “Protocol-Based Treatment of Hypertension: A Critical Step on the Pathway to Progress. *JAMA.* November 2013. Available at: <http://www.astho.org/Programs/Prevention/Chronic-Disease/Million-Hearts/Protocol-Based-Treatment-of-Hypertension--an-article-by-Dr--Frieden/>. Accessed 7-28-15.

<sup>ix</sup> The Community Guide. “Cardiovascular Disease Prevention and Control: Team-Based Care to Improve Blood Pressure Control.” Available at: <http://www.thecommunityguide.org/cvd/teambasedcare.html>. Accessed 7-28-15.