Million Hearts and Strategies for Improving Blood Pressure Control
Million Hearts®

Goal: Prevent 1 million heart attacks and strokes by 2017

- US Department of Health and Human Services initiative, co-led by:
  - Centers for Disease Control and Prevention (CDC)
  - Centers for Medicare & Medicaid Services (CMS)
- Partners across federal and state agencies and private organizations
Overview of Presentation

- Burden of cardiovascular disease
- Key components
- Strategies for Improving Blood Pressure Control
- Public/private sector support
- Resources
Heart Disease and Stroke

Leading Killers in the United States

- More than 1.5 million heart attacks and strokes each year
- Cause 1 of every 3 deaths
  - 800,000 deaths
  - Leading cause of preventable death in people <65
  - $315.4B in health care costs and lost productivity
- Contributor to racial disparities in life expectancy

NCHS Data Brief, June 2013.
200,000 Preventable Deaths from Heart Disease and Stroke

- Many of the deaths caused by heart disease and stroke are preventable.

- Preventable deaths are those attributed to lack of preventive health care or timely and effective medical care.
Risk of preventable death from heart disease and stroke varies by county, even within the same state.

Counties in southern states have the greatest risk overall.

View more maps at the Interactive Atlas for Heart Disease and Stroke: http://nccd.cdc.gov/DHDSAtlas/
Trends in Preventable Deaths

- While the number of preventable deaths has declined in people ages 65-74, it has remained virtually unchanged in people under 65.

Fewer than Half of Americans with Hypertension Have It Under Control

66.9 MILLION
ADULTS WITH HYPERTENSION (30.4%)

46.5%

53.5%
(35.8 M)

Uncontrolled
Controlled

Awareness and Treatment among Adults with Uncontrolled Hypertension

35.8 MILLION
ADULTS WITH UNCONTROLLED HYPERTENSION

16.0M
Aware and treated

14.1M
Aware and untreated

5.7M
Unaware

Key Components of Million Hearts®

Keeping Us Healthy
Changing the environment

Excelling in the ABCS
Optimizing care

Focus on the ABCS
Health tools and technology
Innovations in care delivery

## Targets for the Environment

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Baseline</th>
<th>2017 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking prevalence</td>
<td>21%</td>
<td>19%</td>
</tr>
<tr>
<td>Sodium reduction</td>
<td>~ 3.5 g/day</td>
<td>20% reduction</td>
</tr>
<tr>
<td>Trans fat reduction</td>
<td>~ 1% of calories</td>
<td>50% reduction</td>
</tr>
</tbody>
</table>
# Targets for the ABCS

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Pre-Initiative Estimate</th>
<th>2017 Population-wide Goal</th>
<th>2017 Clinical Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin when appropriate</td>
<td>47%</td>
<td>65%</td>
<td>70%</td>
</tr>
<tr>
<td>Blood pressure control</td>
<td>46%</td>
<td>65%</td>
<td>70%</td>
</tr>
<tr>
<td>Cholesterol management</td>
<td>33%</td>
<td>65%</td>
<td>70%</td>
</tr>
<tr>
<td>Smoking cessation</td>
<td>23%</td>
<td>65%</td>
<td>70%</td>
</tr>
</tbody>
</table>

*From NHANES, NAMCS, and NHAMCS*
Choosing Million Hearts® Measures

- Began January 2011
- CDC, CMS, ONC
- Used existing measures initiatives
  - Meaningful Use, Physician Quality Reporting System
  - Other measures initiatives
- Chose measures that
  - Were evidence-based (and where possible NQF approved)
  - Supported the MH goals
  - Best reflected progress toward population health outcomes in reasonable timeframes
# Clinical Quality Measures (CQMs)

<table>
<thead>
<tr>
<th>ABCS</th>
<th>Domain</th>
<th>Measure</th>
<th>Measure Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Aspirin When Appropriate</td>
<td>Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic</td>
<td>Percentage of patients aged 18 years and older with Ischemic Vascular Disease (IVD) with documented use of aspirin or other antithrombotic</td>
</tr>
<tr>
<td>B</td>
<td>Blood Pressure Screening</td>
<td>Preventive Care and Screening: Screening for High Blood Pressure</td>
<td>Percentage of patients aged 18 and older who are screened for high blood pressure</td>
</tr>
<tr>
<td>B</td>
<td>Blood Pressure Control</td>
<td>Hypertension: Controlling High Blood Pressure</td>
<td>Percentage of patients aged 18 through 85 years of age who had a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled (&lt;140/90) during the measurement year</td>
</tr>
</tbody>
</table>
## CQMs (cont’d)

<table>
<thead>
<tr>
<th>ABCS</th>
<th>Number</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Cholesterol Management</td>
<td>Preventive Care and Screening: Cholesterol – Fasting Low Density Lipoprotein (LDL) Test Performed AND Risk-Stratified Fasting LDL Percentage of patients aged 20 through 79 years who had a fasting LDL test performed and whose risk-stratified fasting LDL is at or below the recommended LDL goal.</td>
</tr>
<tr>
<td>C</td>
<td>Cholesterol Management – Diabetes</td>
<td>Diabetes Mellitus: Low Density Lipoprotein (LDL-C) Control in Diabetes Mellitus Percentage of patients aged 18 through 75 years with diabetes mellitus who had most recent LDL-C level in control (less than 100 mg/dL)</td>
</tr>
<tr>
<td>C</td>
<td>Cholesterol Management – Ischemic Vascular Disease</td>
<td>Ischemic Vascular Disease (IVD): Complete Lipid Panel and Low Density Lipoprotein (LDL-C) Control Percentage of patients aged 18 years and older with Ischemic Vascular Disease (IVD) who received at least one lipid profile within 12 months and who had most recent LDL-C level in control (less than 100 mg/dL)</td>
</tr>
<tr>
<td>S</td>
<td>Smoking Cessation (assessment and intervention)</td>
<td>Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention Percentage of patients aged 18 years or older who were screened about tobacco use one or more times within 24 months AND who received cessation counseling intervention if identified as a tobacco user</td>
</tr>
</tbody>
</table>
Self-Measured Blood Pressure Monitoring: An Emerging Public Health and Primary Care Strategy for Hypertension Management
Self-Measured Blood Pressure Monitoring (SMBP)

SMBP: the regular measurement of a patient’s own blood pressure with a personal monitor outside a clinical setting, usually at home.

- Resources:
  - AHA “Call to Action”:
    [http://hyper.ahajournals.org/content/52/1/10.full](http://hyper.ahajournals.org/content/52/1/10.full)
  - AHRQ review:
  - SMBP Guide:
    [http://millionhearts.hhs.gov/resources/tools.html](http://millionhearts.hhs.gov/resources/tools.html)
AHRQ Review: SMBP Plus Additional Support

- July 2012 – AHRQ reviewed the effectiveness of SMBP
  - Compared SMBP alone and SMBP plus additional support to usual care

AHRQ found strong evidence that SMBP plus additional clinical support was more effective than usual care in lowering blood pressure among patients with hypertension.
Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners

- Self-measured blood pressure monitoring (SMBP) plus additional support is one strategy to lower blood pressure.

- SMBP guide can be found at: http://millionhearts.hhs.gov/resources/tools.html
# How to Choose a Home BP Monitoring Device

<table>
<thead>
<tr>
<th>Preferred</th>
<th>Not Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated</td>
<td>Manual</td>
</tr>
<tr>
<td>Upper arm cuff</td>
<td>Wrist or finger cuff</td>
</tr>
<tr>
<td>Properly sized cuff</td>
<td>Cuff that is too big or too small</td>
</tr>
<tr>
<td>Accuracy checked by physician or nurse after purchase</td>
<td>Patient uses monitor without consulting physician</td>
</tr>
<tr>
<td>Memory storage capacity</td>
<td>No memory storage</td>
</tr>
</tbody>
</table>
Additional Clinical Support Strategies for SMBP

The type of additional support in the studies examined by AHRQ varied widely and fell into three main categories:

**One-on-one counseling:**
- Regular telephone calls from nurses to manage blood pressure-lowering medication;
- In-person counseling sessions with trained community pharmacists.

**Web-based or telephonic support:**
- Interactive computer-based telephone feedback system;
- Secure patient website training plus pharmacist care management delivered through web communications

**Educational classes:**
- Telephone-based education by nurses on blood pressure-lowering behaviors delivered only when patients reported poor blood pressure readings;
- Small-group classes on SMBP technique and lifestyle changes that help lower blood pressure, taught by PAs.
Common Elements of Successful SMBP Support

- There is a wide variety of SMBP plus additional support interventions that have successfully lowered blood pressure in patients with HTN. Common elements of successful SMBP plus additional support interventions are:

  - Delivery of intervention by trained health care provider
  - Regular patient communication of SMBP readings to providers
  - A patient/provider ‘feedback loop’
Patient

Self-measured blood pressure readings
Lifestyle habits (e.g., smoking, diet, exercise)
Medication side effects and adherence barriers
Insights into variables affecting control of blood pressure

Provider

Adjustments to medication type and dose to achieve goal blood pressure
Suggestions to achieve lifestyle changes
Actions to sustain or improve adherence
Advice about community resources to assist in controlling blood pressure
Health Insurance Coverage for SMBP (cont’d)

- Medicare Part B, (traditional fee-for-service)
  - Covers ABPM and physician interpretation of results for the diagnosis of white-coat HTN
  - Does not cover home blood pressure monitors used for SMBP.

- Medicare Part C (Medicare Advantage)
  - Not required to cover home blood pressure monitors or additional support programs, but may choose to offer these benefits.

- Medicaid
  - Coverage for home blood pressure monitors and additional support varies by state

- Private Insurance
  - Decision to cover home blood pressure monitors and additional support is made by each individual plan.

- If not covered, patients can be reimbursed for monitors from a health care flexible spending account (FSA).
EVIDENCE-BASED HYPERTENSION TREATMENT
PROTOCOLS
What is a protocol?

A protocol is an evidence-based standardized approach to blood pressure treatment. They may be called algorithms, care pathways, or care plans.

- **Resources:**
  - AHA/ACC/CDC Joint Scientific Statement on Hypertension: [http://hyper.ahajournals.org/content/early/2013/11/14/HYP.000000000000000003.full.pdf+html](http://hyper.ahajournals.org/content/early/2013/11/14/HYP.000000000000000003.full.pdf+html)
TREATMENT OF HYPERTENSION IN ADULTS
BP Goal: < 140/90

PRESCRIBE HEALTHY LIFESTYLE CHANGES FOR ALL PATIENTS WITH HYPERTENSION (Table 1)

COMPELLING INDICATION? (Table 2)

This algorithm is NOT applicable (See suggested first-line meds for compelling indications)

PERFORM INITIAL LABORATORY TESTS AND STUDIES (Table 3)

What is the blood pressure?

140-159 systolic or 90-99 diastolic
- Prescribe healthy lifestyle changes
- Reassess in 3 months (One month if multiple CVD risk factors)
- Is BP < 140/90?
  - Yes
    - Prescribe HCTZ 12.5 mg daily
    - Check Chem-7 two wks after starting/changing dose
    - Reassess BP and Rx tolerance in 2 wks
    - Titrate dose to target BP or to max (25 mg) in 4-6 wks
  - No
    - Add Lisinopril 5-10 mg daily or Enalapril 5 mg daily
    - Check Chem-7 two wks after starting/changing dose
    - Reassess BP and Rx tolerance in 2 wks
    - Titrate dose to target BP or to max (40 mg)
    - Change to ACE-I/HCTZ combination pill when BP controlled and if dosing allows
      - Discontinue ACE-I if creatinine rises by > 30% or K+ < 5.6 despite diet counseling
    - Is BP < 140/90?
      - Yes
        - Refer to a specialist
      - No
        - Add Amloclidine 2.5 to 5 mg daily
        - Reassess BP and Rx tolerance in 2 wks
        - Monitor for tachycardia and ankle edema
        - Titrate dose to target BP or to max (10 mg) in 4-6 wks
        - Is BP < 140/90?
          - Yes
            - Refer to a specialist
          - No
            - Add Metoprolol XL 50 mg daily
            - Reassess BP and Rx tolerance in 2 wks
            - Titrate dose to target BP or to max (200 mg) in 4-6 wks
            - Is BP < 140/90?
              - Yes
                - Refer to a specialist
              - No
                - Refer to a specialist

160 systolic or >= 100 diastolic
- Prescribe Lisinopril 5-10 mg daily or Enalapril 5 mg daily AND HCTZ 12.5 mg daily
- Check Chem-7 two wks after starting/changing dose
- Reassess BP and Rx tolerance in 2 wks
- Titrate doses to target BP or to max in 4-6 wks
- Change to ACE-I/HCTZ combination pill when BP controlled and if dosing allows
  - Discontinue ACE-I if creatinine rises by > 30% or K+ < 5.6 despite diet counseling
- Is BP < 140/90?
  - Yes
    - Refer to a specialist
  - No
    - Add Amloclidine 2.5 to 5 mg daily
    - Reassess BP and Rx tolerance in 2 wks
    - Monitor for tachycardia and ankle edema
    - Titrate dose to target BP or to max (10 mg) in 4-6 wks
    - Is BP < 140/90?
      - Yes
        - Refer to a specialist
      - No
        - Add Metoprolol XL 50 mg daily
        - Reassess BP and Rx tolerance in 2 wks
        - Titrate dose to target BP or to max (200 mg) in 4-6 wks
        - Is BP < 140/90?
          - Yes
            - Refer to a specialist
          - No
            - Refer to a specialist

Table 1. Healthy Lifestyle Changes
- Quit smoking
- DASH/low sodium diet
- Physical activity
- Healthy weight
- Limit alcohol

Table 2. Compelling Indication
- Cerebrovascular disease
- Chronic kidney disease/GFR < 60
- Congestive heart failure
- Coronary Artery Disease
- Pregnancy

Table 3. Laboratory Tests and Studies
- Chem-7
- Fasting lipid panel
- Electrocardiogram (ECG)
- Urinalysis (U/A)

Once at BP goal, change to combination formulations if possible, and continue to promote healthy lifestyle changes. Follow up every 3-6 months, and continue to assess adherence. Please refer to medication table for additional prescribing information.
How can protocols help?

- Increasing number of providers using protocol driven care helps more Americans get their blood pressure under control.

- Protocols help improve control by:
  - Clarifying treatment options + titration intervals
  - Expanding the types of staff that can assist in timely follow-up with patients (TEAM-BASED CARE)
  - Drive quality improvement efforts (outlines process)
  - When embedded in electronic health records they can serve as a clinical decision support tool at the point of care
Evidence-Based Sample Protocols

- US Department of Veterans Affairs
- Kaiser Permanente
- Institute for Clinical Systems Improvement
- Health and Hospitals Corporation: NYC

*Website includes a brief description of the key components included in each protocol and the rich array of supplemental materials provided to guide control efforts*
Created a modifiable template

The red, italicized text may be modified by the user to provide specific drug names.

Name of Practice

Protocol for Controlling Hypertension in Adults

The blood pressure (BP) goal is set by a combination of factors including scientific evidence, clinical judgment, and patient tolerance. For most people, the goal is <140 and <90; however, some individuals may be better served by other BP goals. Lifestyle modifications (LM)* should be initiated in all patients with hypertension (HTN) and patients should be assessed for target organ damage and existing cardiovascular disease. Self-monitoring is encouraged for most patients throughout their care and requesting and reviewing readings from home and community settings can help in achieving and maintaining good control. For patients with hypertension and certain medical conditions, specific medications should be considered, as listed in the box on the right below.

Systolic **140–159** or diastolic **90–99** *(Stage 1 HTN)*
- LM as a trial
- **Consider adding thiazide**

Systolic **>160** or diastolic **>100** *(Stage 2 HTN)*
- Two drugs preferred:
  - LM and
  - **Thiazide and ACEI, ARB, or CCB**
  - Or consider ACEI and CCB

**Medications to consider for patients with hypertension and certain medical conditions**
- Coronary artery disease/Post MI: **BB, ACEI**
- Heart failure with reduced EF: **ACEI or ARB, BB (approved for this use), ALDO, diuretic**
- Heart failure with preserved EF:

Re-check and review readings within 3 months*
What Can YOU Do?

- Encourage providers to implement standardized protocols
- Work with other partners to help encourage implementation of protocols and to have them embedded into EHRs
- Share what works and doesn’t with us
HYPERTENSION CONTROL: ACTION STEPS FOR CLINICIANS
What can clinicians do?

• Evidence- and practice-based strategies for blood pressure control
• Organized into three categories: delivery system design, medication adherence, and patient reminder and supports
• Available online: http://millionhearts.hhs.gov/Docs/MH_HTN_Clinician_Guide.PDF
Example Action Steps

- Designate hypertension champions within your practice or organization.
- Assign one staff person the responsibility of managing medication refill requests.
- Generate lists of patients with hypertension who have missed recent appointments. Send phone, mail, e-mail, or text reminders.
- Encourage home blood pressure monitoring plus clinical support using automated devices with properly sized arm cuffs.
Partnerships and Support
Public Partners

- Centers for Disease Control and Prevention (co-lead)
- Centers for Medicare & Medicaid Services (co-lead)
- Agency for Community Living
- Agency for Healthcare Research and Quality
- Food and Drug Administration
- Health Resources and Services Administration
- Indian Health Service
- National Institutes of Health, National Heart Lung and Blood Institute
- National Prevention Strategy, National Quality Strategy
- Office of the National Coordinator for HIT
- Substance Abuse and Mental Health Services Administration
- Veteran’s Health Administration
- State and Local governments
Private Support

- Heath care systems
- Clinicians
- Professional organizations
- Commercial payers and purchasers
- Pharmacists/pharmacies
- Employers
- Health advocacy groups
Million Hearts® Resources

- Self-Measured Blood Pressure Monitoring guide
- Hypertension Treatment Protocols
- Hypertension Action Steps for Clinicians
- Grand Rounds:
  - Million Hearts® Grand Rounds
  - Hypertension Grand Rounds: Detect, Connect, and Control
- Million Hearts® E-update
- Spanish language website
- Team up. Pressure down. program
- Visit http://millionhearts.hhs.gov/ to find other useful Million Hearts® resources.
References


Thank You!
Questions?