Implications for Improving Care for People with High Blood Pressure

American College of Medical Quality
January 17th, 2018

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Conflicts of Interest: None
Strategies to Improve Hypertension Treatment and Control

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Structured, Team-Based Care Interventions for Hypertension Control

A team-based care approach is recommended for adults with hypertension

<table>
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<th>COR</th>
<th>LOE</th>
<th>Recommendations</th>
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<tbody>
<tr>
<td>I</td>
<td>A</td>
<td>A team-based care approach is recommended for adults with hypertension</td>
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</table>

- Incorporates a multidisciplinary team to improve the quality of care for patients
- Various team-based hypertension care models have been demonstrated to reduce SBP and DBP and increase BP control
- Patient centered
- Often uses a treatment algorithm to aid clinical decision making, adherence to treatment, collaboration, BP monitoring and self-management
- Primary care, Specialists, nurses, pharmacists, PA’s, dieticians, social and community health workers
Health Information Technology–Based Strategies to Promote Hypertension Control: EHR and Patient Registries

Recommendations for EHR and Patient Registries

<table>
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<tr>
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<tbody>
<tr>
<td>I</td>
<td>B-NR</td>
<td>Use of the EHR and patient registries is beneficial for identification of patients with undiagnosed or undertreated hypertension</td>
</tr>
<tr>
<td>I</td>
<td>B-NR</td>
<td>Use of the EHR and patient registries is beneficial for guiding quality improvement efforts designed to improve hypertension control</td>
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</tbody>
</table>

- Use of registries in EHRs and Data Warehouses can permit queries to support strategies to identify undiagnosed or undertreated people with hypertension

- QI initiatives can be designed around EHR generated hypertension registries, using data to create monthly dashboards to monitor at-risk populations
Undiagnosed Hypertension

Identifying Undiagnosed Hypertension Among Active Primary Care Patients at NorthShore University HealthSystem

• The goal was to develop strategy to identify patients with undiagnosed hypertension in 23 primary care practices and integrate this into a continuous quality improvement initiative

Identifying Undiagnosed Hypertension Among Active Primary Care Patients at NorthShore University HealthSystem

• Patient data within the EHR was reviewed using algorithms designed to identify patients at-risk for undiagnosed hypertension

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Number Identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All patients whose 3 most recent encounters yielded a mean SBP &gt;140 mm Hg or a mean DBP &gt;90 mm. Encounters used were within 12 months before their most recent encounter</td>
<td>720</td>
</tr>
<tr>
<td>2. All patients who had 3 encounters with a SBP &gt;140 or DBP &gt;90 mm Hg within 12 months before their most recent encounter</td>
<td>968</td>
</tr>
<tr>
<td>3. Patients who had a single encounter with a SBP &gt;180 or a DBP &gt;100 mm Hg within 12 months before their most recent encounter</td>
<td>527</td>
</tr>
<tr>
<td>Unique patients identified by algorithms 1, 2, or 3</td>
<td>1,586</td>
</tr>
</tbody>
</table>

SBP = systolic blood pressure; DBP = diastolic blood pressure.

Note: All data were obtained from outpatient encounters with a primary care physician or specialist.

Patients suspected of Hypertension based on the algorithm queries were invited to complete a more thorough evaluation of their blood pressure to make a diagnosis

- Patients were invited to come in for an “Automated Office Blood Pressure (AOBP) visit”
- AOBP eliminates white coat effect in most patients and correlates better with daytime mean ambulatory BP than conventional office BP
- These visits were highly standardized
- About 1/3 of the patients invited to come in for these visits did, and a diagnosis was documented

What about the patients who did not come in for an AOBP visit?

- Electronic “Best Practice Advisory” alerts were created to fire automatically at the point of care for patients who satisfied any of the algorithm criteria and did not come in for an AOBP visit.

- These clinical decision support alerts fire in real time during office visits for both clinical staff putting patients in rooms as well as for clinicians.

Ongoing QI efforts for sustaining improvement long-term

• A continuous QI process that included regular physician feedback (monthly dashboards listing patients at-risk for undiagnosed hypertension) and office-based computer alerts remained active for at-risk patients.

• At the end of the study period, 72% of the 1,432 patients identified as at-risk for undiagnosed hypertension had achieved diagnostic resolution documented in the EHR.

• This is particularly important for those with hypertension, as they are 93% more likely to receive treatment if there is a diagnosis in the EHR than if not.

A Technology-Based Quality Innovation to Identify Undiagnosed Hypertension Among Active Primary Care Patients

www.annfammed.org/content/12/4/352
## Quality Improvement Strategies and The Plan of Care for Hypertension

### Recommendation for Quality Improvement Strategies

<table>
<thead>
<tr>
<th>COR</th>
<th>LOE</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a</td>
<td>B-R</td>
<td>Use of quality improvement strategies at the health system, provider, and patient levels to improve identification and control of hypertension can be effective</td>
</tr>
</tbody>
</table>

### Recommendation for the Plan of Care for Hypertension

<table>
<thead>
<tr>
<th>COR</th>
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<th>Recommendation</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>C-EO</td>
<td>Every adult with hypertension should have a clear, detailed, and current evidence-based plan of care that ensures the achievement of treatment and self-management goals, encourages effective management of comorbid conditions, prompts timely follow-up with the healthcare team, and adheres to CVD GDMT</td>
</tr>
<tr>
<td>Step</td>
<td>Section</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Measure office BP accurately</td>
<td>Section 4</td>
<td></td>
</tr>
<tr>
<td>Detect white coat hypertension or masked hypertension by using ABPM and HBPM</td>
<td>Section 4</td>
<td></td>
</tr>
<tr>
<td>Evaluate for secondary hypertension</td>
<td>Section 5</td>
<td></td>
</tr>
<tr>
<td>Identify target organ damage</td>
<td>Sections 5 and 7</td>
<td></td>
</tr>
<tr>
<td>Introduce lifestyle interventions</td>
<td>Section 6</td>
<td></td>
</tr>
<tr>
<td>Identify and discuss treatment goals</td>
<td>Sections 7 and 8</td>
<td></td>
</tr>
<tr>
<td>Use ASCVD risk estimation to guide BP threshold for drug therapy</td>
<td>Section 8.1.2</td>
<td></td>
</tr>
<tr>
<td>Align treatment options with comorbidities</td>
<td>Section 9</td>
<td></td>
</tr>
<tr>
<td>Account for age, race, ethnicity, sex, and special circumstances in antihypertensive treatment</td>
<td>Sections 10 and 11</td>
<td></td>
</tr>
<tr>
<td>Initiate antihypertensive pharmacological therapy</td>
<td>Section 8</td>
<td></td>
</tr>
<tr>
<td>Insure appropriate follow-up</td>
<td>Section 8</td>
<td></td>
</tr>
<tr>
<td>Use team-based care</td>
<td>Section 12</td>
<td></td>
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<tr>
<td>Connect patient to clinician via telehealth</td>
<td>Section 12</td>
<td></td>
</tr>
<tr>
<td>Detect and reverse nonadherence</td>
<td>Section 12</td>
<td></td>
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<tr>
<td>Detect white coat effect or masked uncontrolled hypertension</td>
<td>Section 4</td>
<td></td>
</tr>
<tr>
<td>Use health information technology for remote monitoring and self-monitoring of BP</td>
<td>Section 12</td>
<td></td>
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</tbody>
</table>

Clinician’s Sequential Flow Chart for the Management of Hypertension

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Factors Impacting Blood Pressure Control

**Patient factors**
- Treatment Non-adherence
- Social Determinants, access to
  - Healthy food
  - Safe neighborhoods
  - Quality education
  - Stable housing
  - Income and healthcare
- Cultural

**Physician factors**
- Time
- Financial
- Knowledge of evidence/ willingness to use it

**System factors**
- Quality reporting
- Work flow
- Management (buy-in)
2014 M.A.P. Framework for Hypertension Control

Why?

• Hypertension (HTN) is common and leads to major clinical sequelae

• While blood pressure (BP) control improved from 1999 – 2008, control has not improved since 2008

• Evidence-based principles and can be efficiently implemented across healthcare systems

M = Measure accurately

A = Act rapidly

P = Partner proactively with patients
# The 2015 M.A.P. checklists for improving BP control

## Measure accurately

**Screening checklist**
- When screening patients for high blood pressure:
  - Use a validated, automated device to measure BP
  - Use the correct cuff size on a bare arm
  - Ensure patient is positioned correctly
- Confirmatory checklist
  - If screening blood pressure is ≥140/90 mm Hg, obtain a confirmatory measurement:
  - Repeat screening steps above
  - Ensure patient has an empty bladder
  - Ensure patient has rested quietly for at least five minutes
  - Obtain the average of at least three BP measurements

## Act rapidly

- If a patient has blood pressure ≥140/90 mm Hg confirmed:
  - Use evidence-based protocol to guide treatment
  - Re-assess patient every 2-4 weeks until BP is controlled
  - Whenever possible, prescribe single-pill combination therapy

Evidence-based protocols typically include:
- Counsel on and reinforce lifestyle modifications
- Ensure early follow-up and add preferred medications in a step-wise fashion, until BP is controlled
- For most patients, give preference to:
  - Thiazide diuretics
  - Dihydropyridine calcium channel blockers
  - ACE inhibitors (ACEI) or
  - Angiotensin receptor blockers (ARBs)
- Do not prescribe both ACEI and ARB to same patient
- If BP ≥160/100 mm Hg, start therapy with two medications or a single pill combination

## Partner with patients, families and communities

To empower patients to control their blood pressure:
- Engage patients using evidence-based communication strategies
- Help patients accurately self-measure
- Direct patients and families to resources that support medication adherence and healthy lifestyles

Evidence-based communication strategies include:
- Begin with open-ended questions about adherence, including recent medication use
- Explore reasons for possible non-adherence or a single pill combination
- Elicit patient views on options and priorities to customize a care plan for each patient
- Remain non-judgmental at all times
- Use teach-back to ensure understanding of the care plan

Evidence-based tips for patient self-measurement of BP:
- Instruct patient to measure BP accurately using a validated, automated device and correct positioning for measurement
- Ask patient to record ≥2 morning BP measurements and ≥2 evening BP measurements for 4 consecutive days between office visits
- Develop a systematic approach to ensure patients can act rapidly to address elevated BP readings between office visits
- Counsel patients that self-measured BP ≥130/85 mm Hg is considered elevated

Evidence-based lifestyle changes to lower BP include:
- Following the DASH diet, which is rich in fruits, vegetables, and whole grains; low-fat dairy, poultry, fish and plant-based oils; and limits sodium, sweets, sugary drinks, red meat and saturated fats
- Engaging in moderate physical activity, such as brisk walking, for 30 minutes a day at least four days a week
- Maintaining a healthy body mass index (BMI)
- Limiting alcohol to ≤2 drinks/day in men, ≤1 drink/day in women

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These checklists are not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.
### M.A.P. Hypertension Control Program

#### Practice
- 6-month QI initiative
  - Practice facilitation
  - Dashboards
  - Peer-to-peer exchange

#### Evidence-Based Strategies
- **MEASURE ACCURATELY**
  - Obtain accurate, representative BP
- **ACT RAPIDLY**
  - Implement evidence-based protocol to Dx and Rx HTN and reduce clinical inertia
- **PARTNER WITH PATIENTS, FAMILIES & COMMUNITIES**
  - Engage patients in healthy lifestyles and self-management

#### Action Steps
- Proper Patient Prep & Position, etc.
- Confirmatory AOBP Measurements
- Treatment Protocol
- Single-pill combinations
- Visit Frequency
- Evidence-Based Communication Strategy
- BP Self-Monitoring
- Lifestyle Change(s)

#### Metrics
- **CONFIRMATORY AOBP**
- **THERAPEUTIC INERTIA**
- **Δ BP after THERAPEUTIC INTENSIFICATION**

#### Outcomes
- Blood Pressure Control:
  - Δ % Patients with BP <140/<90
  - Δ in SBP
  - Δ in DBP

---

**Facilitating actors**
- Engaged Leadership
- Committed Staff
- Effective Teamwork
- Evidence-Based Protocol, QI Tools
- Confident Expectations
- Actionable Data Sustained Δ

Co-developed with CCI LABS
Site Specific HTN Dashboards Drive Improvement

![Diagram showing % improvement in various HTN metrics](image)

- HTN BP<140/90: 72% improvement
- Confirmatory AOBP: 70% improvement
- HTN Therapeutic Inertia: 62% improvement
- BP Change after Therapeutic Intensification: 51% improvement

TARGET: BP

American Heart Association, life is why.

AMA American Medical Association
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Evidence for the effectiveness of the MAP BP Program

Between baseline and the last study visit, BP control to <140/<90 mm Hg increased from 61.2% to 89.9% (P < .0001).

MAP rapidly and significantly improved hypertension control in medically underserved patients, largely as a result of measuring BP Accurately and partnering with patients.
What is Target BP?

A call to action motivating medical practices, practitioners and health services organizations to prioritize blood pressure control

✓ Recognition for healthcare providers who attain high levels of blood pressure control in their patient populations, particularly those who achieve 70 percent or higher control

✓ A source for tools and assets for healthcare providers to use in practice

http://targetbp.org/
THIS IS WHAT HIGH BLOOD PRESSURE LOOKS LIKE

You might not see or feel its symptoms, but the results — a heart attack or stroke — are far from invisible or silent.

TALK WITH YOUR DOCTOR TO CREATE A NEW PLAN

UNDERSTAND YOUR NUMBERS

MANAGE YOUR HIGH BLOOD PRESSURE

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TargetBP.org for Clinical Teams

MOTIVATING MILLIONS TO CONTROL BLOOD PRESSURE

JOIN TARGET: BP
Commit to reducing the number of Americans with uncontrolled blood pressure.
Register

RECOGNITION PROGRAM
Achieve recognition for maintaining blood pressure control rates.
Learn More

DATA SUBMISSION
Submit data to be recognized by the Target: BP Recognition Program.
Submit Data

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Who Can Participate?

- Hospitals
- Medical practices
- Practitioners/Care teams
- Health service organizations

How Does The Program Work?

1. Customize a Plan
After registration, an AHA field staff representative will work with you to create a customized implementation plan for improving patient blood pressures within your organization. As part of this process we encourage you to utilize the M.A.P. framework focusing attention on three key areas of blood pressure management. Some organizations see great improvements just by creating and publishing specified reports that encourage compliance. Others set up new practices around taking blood pressure readings that help prevent measurement errors in blood pressure measurement. AHA field staff will be able to share specific implementation practices or protocols that have had dramatic results. The plan you implement will be tailored for your organization. **Target: BP supports you by offering**: • tools, resources and improvement plans, including a customizable algorithm with proven efficacy; • best practices and success stories from other Target: BP participants; and • easy-to-use tools and resources to help your patients better understand the importance of controlling blood pressure.

2. Measure Improvement & Report Results
Measuring improvement and making necessary modifications to a plan is key to any quality improvement process. Our AHA field staff will support ongoing measurement and provide guidance on data reporting.

3. Strive for Recognition
Target: BP will nationally recognize those with superior performance. There are two levels to our recognition program, which starts in 2017. Learn more about the recognition program.
BP IMPROVEMENT PROGRAM

This is your chance—the moment to take action.

Explore the Program

The latest prevalence estimates show that 46% of adults in the United States have high blood pressure. Despite the serious risk of heart attack, stroke, and even death, and the fact that we’ve made significant progress improving high blood pressure control rates in the US, blood pressure control remains far from ideal.

“It’s time to fight back harder, with better tools—including the practical, evidence-based steps this program offers.

You Can Make a Difference

By using an evidence-based protocol to guide the way you and your team assess and treat people with high blood pressure, following clinical best practices, and enabling patient self-measurement where appropriate, you can have an impact on one of the biggest health challenges we face today.

Measure, Act, Partner.

Focusing on three critical areas—measuring blood pressure accurately, acting rapidly with a clear treatment plan, and partnering with patients to enable ongoing self-management—could help your patients get their blood pressure (BP) under control and keep it there.

Enable Patient Self-Measurement

Enable Self-measured BP (SMBP) for your patients. Patients can take an active role in their treatment by monitoring their own BP readings outside of the clinical setting. SMBP can also help you better diagnose high BP and effectively manage patients.
How to measure your blood pressure at home

Follow these steps for an accurate blood pressure reading.

1. PREPARE
   - Avoid caffeine, cigarettes, and other stimulants 30 minutes before you measure your blood pressure.
   - Sit at least 10 minutes, after a meal.
   - If you’re on blood pressure medication, measure your BP before you take your medication.
   - Empty your bladder beforehand.
   - Find a quiet space where you can sit comfortably without distractions.

2. POSITION
   - Position arm support your BP cuff, elbow at heart level.
   - Sit or lie on a hard surface.
   - Keep your arm relaxed.
   - Sit quietly with no distractions during measurements—avoid conversations, TV phones and other devices.
   - Rest your measurements at least.

3. MEASURE
   - Rest for five minutes while in position before starting.
   - Take two or three measurements, one minute apart.
   - Keep your body relaxed and in position during measurements.

TARGET: BP

For Healthcare Professionals

Diagnose High BP

Blood Pressure Measurement (Poster)

The proper steps to take when measuring blood pressure, with evidence-based tips for correct positioning.

FOR Healthcare Professionals

TOPO Diagnose High BP

BP Positioning Challenge

Resolve positioning issues to get an accurate reading.

FOR Healthcare Professionals

TOPO Diagnose High BP

Measuring Blood Pressure

Handout showing critical steps for measuring BP accurately, along with the potential impact of mismeasurement.

FOR Healthcare Professionals

TOPO Diagnose High BP
Target:BP – How are we doing?

Organizations Participating and Self-Reporting Target BP Data:

- 1,199 Health Care Organizations Enrolled in Target: BP
- 310 of these submitted data for the recognition program
- 185 achieved Gold Status for BP control Rates >70% (based on 2016 data)

Guideline Launch Highlights:

- 4.5 Billion Total Media Reach (Earned, Paid, Owned, Web, Digital, Social)
- Dedicated section on Target:BP website
- Live stream and enduring Facebook Live Event and Grand Rounds for CME coming soon.
Thank you!

Questions?

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