Improving High Blood Pressure in Your Practice

Dina Faticone, Mathew Devine, DO and Brenda Chapman, BSN, RNC

October 6, 2017
Content

• About the Collaborative Work
• Improving High Blood Pressure Control in Your Practice
• Stage 2 Hypertension
• Public Health Resources
• Collaborative Sharing
Objectives

To Understand:

1. The importance of taking an accurate blood pressure;

2. How to use Best practice models for educating patients in your practice;

3. How to develop and standardize plans to increase blood pressure control rates in your practice;

4. How to identify and reduce the percentage of patients with stage 2 hypertension in your practice.
About the Collaborative Work

Mathew Devine, D.O.
HBP Collaborative Work

- 150+ practices provide EHR data directly to Common Ground Health

- We use the EHR data to provide practitioners with registry reports 2x per year

- Convene high blood pressure educational sessions

- Registry Improvement Consultant – to improve blood pressure control in targeted practices
The Goal: 85% of the diagnosed population are in control

Background:

About 35 percent of adults in the 8-county Finger Lakes region have high blood pressure (N=146,111).

• Leading contributor to stroke, heart attack and kidney failure.

• Leading driver of health care expenditures in our region.

• Chronic illness is relatively easy to treat and the benefits are huge.
Finger Lakes - 8 County Population:
Age ≥ 18
June 2017 Estimate = 417,461

Population: 18 older with Dx HBP
(35% based on national data)
146,111

Patients ≥18 with Dx HBP
Office Visit in past 3 years
97,373 (66.6%)

Dx HBP (JNC8)
84,638 (86.9%)
(excludes new patients & no reads)

Uncontrolled
16,578 (19.6%)

Controlled
68,060 (80.4%)

Stage 1 HBP
(140-159/90-99)
12,783 (77.1%)

Stage 2 HBP
(160/100)
3,795 (22.9%)

New Patients
(Last 6 months)
2,157 (2.2%)

No BP Reading
(Last 13 months)
10,578 (10.9%)
High Blood Pressure Registry – # of Practices

<table>
<thead>
<tr>
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# High Blood Pressure Registry – # of Patients

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<td>48,756</td>
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<td>88,311</td>
<td>103,120</td>
<td>114,118</td>
<td>121,263</td>
<td>133,939</td>
<td>128,312</td>
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Graph showing the increase in patients over time.
Percent of Patients with Blood Pressure Controlled

Rates are age/sex adjusted to the age/sex distribution of the June 2011 registry. June 2017 High Blood Pressure registry
% of High Blood Pressure Patients with BP Controlled
Practices in the 8-County FL Region

Participating Practices with more than 50 Patients in the Registry

Rates are age-sex adjusted to the age-sex distribution of the December 2011 HBP Registry. The Control rates are calculated for patients with a BP reading in the past 13 months.
Effect of SD Variables on Control Regional – 8 Counties

- HBP Registry – JNC8 Measures

HBP Control Rate - By Race/Ethnicity

- Black - Non Hispanic
- Hispanic
- White - Non Hispanic
- Overall

HBP Control Rate - By Social Economic Status

- Low
- Moderate
- High
- Overall

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<td>66.6%</td>
<td>68.7%</td>
<td>69.0%</td>
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<tr>
<td>Hispanic</td>
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<td>73.6%</td>
<td>73.3%</td>
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<tr>
<td>White</td>
<td>67.5%</td>
<td>79.6%</td>
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<td>Overall</td>
<td>66.6%</td>
<td>73.6%</td>
<td>73.3%</td>
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<tr>
<td>Low</td>
<td>75.1%</td>
<td>76.9%</td>
<td>78.4%</td>
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<tr>
<td>Moderate</td>
<td>77.6%</td>
<td>79.3%</td>
<td>80.5%</td>
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<tr>
<td>High</td>
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<td>82.1%</td>
<td>83.4%</td>
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<tr>
<td>Overall</td>
<td>75.1%</td>
<td>79.3%</td>
<td>80.5%</td>
</tr>
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</table>
Improving High Blood Pressure in Your Practice

Brenda Chapman, BSN, RNC
Hypertension

• The most common condition seen in primary care

• Blood pressures are one of the most important measurements in clinical medicine
  • Also one of the most inaccurately performed

• Affects 1/3 of the population
Hypertension

• Prevalence is greatest in African Americans

• Prevalence rises with age
  • More than half of all Americans aged 65+ years have hypertension

• Hypertension is a major risk factor for:
  • Coronary Heart Disease, MI, Stroke, Renal failure and death
BP Treatment Goals

• Age ≥60 years
  • <150/90 mm Hg (with no diabetes and no kidney disease)

• Age 30–59
  • Goal of <140/90 mm Hg.

• Patients of all ages with diabetes or non-diabetic chronic kidney disease
  • <140/90 mm Hg
What factors might affect BP measurement?
Factors that Effect BP Measurement

<table>
<thead>
<tr>
<th>When patient has...</th>
<th>BP can change by this much...$^{3,4}$</th>
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<tbody>
<tr>
<td>Cuff over clothing</td>
<td>10–40 mm Hg</td>
</tr>
<tr>
<td>Full bladder</td>
<td>10–15 mm Hg</td>
</tr>
<tr>
<td>Conversation or is talking</td>
<td>10–15 mm Hg</td>
</tr>
<tr>
<td>Unsupported arm</td>
<td>10 mm Hg</td>
</tr>
<tr>
<td>Unsupported back</td>
<td>5–10 mm Hg</td>
</tr>
<tr>
<td>Unsupported feet</td>
<td>5–10 mm Hg</td>
</tr>
<tr>
<td>Crossed legs</td>
<td>2–8 mm Hg</td>
</tr>
</tbody>
</table>


The Proper BP Technique

• Patient should quietly sit still for 5 minutes

• Patient should be seated comfortably with:
  1. Back supported
  2. Legs uncrossed with feet flat on floor/supported by stool
  3. Arm supported with BP cuff at heart level
The Proper BP Technique

Patient Preparation:

- Select the correct cuff size
- If first reading is high take a second reading 5 minutes apart in the same position/same arm (take the average of the readings)
- Accurate BP readings rarely end in 0 – retrain and listen carefully
BP Management: Patient Lifestyle Modifications

• Weight Reduction

• Physical activity

• Dietary Approaches to Stop Hypertension: DASH eating
  • Moderation of alcohol consumption
White Coat Hypertension

• 15-20% of patients have elevated BP in the presence of health care worker
  • The BP is not elevated elsewhere
  • Patient does not take medication
  • Average office BP is 140/90
  • Older men and women
White Coat Hypertension

• **Train and encourage patient to take BP properly at home**

• Have patient record measurements

• Ask patient to bring in home monitor to let staff check device for accuracy in office
Training for Staff

• Assess for competencies in taking BP:
  • Vision
  • Hearing
  • Eye/Hand/Ear Coordination

• Training materials:
  • Physical assessment course
  • Online videos
Training for Staff

• Evaluate/assess staff knowledge by:
  • Questionnaires or interviews
  • Return skills demonstration

• Gold standard is to retrain staff every 6 months.
  • What to include in staff training:
    • Cuff selection;
    • Patient positioning;
    • Direct observation, etc.
Best Practices

• Treatment interventions should be initiated when blood pressure is:
  • 150/90 mm Hg or higher in adults ≥60 years
  • 140/90 mm Hg or higher in adults <60 years

• Initiate treatment for patients with hypertension and diabetes when BP is 140/90 regardless of age

• Treatment approaches may include lifestyle changes and pharmacologic interventions.
Best Practices

- **Evidenced based approaches** by the Care Team

- **Training of staff**
  - How to take an accurate BP

- Use of **Blood Pressure Measurement posters** in each exam room

- **Educating patients** regarding lifestyle changes and self-management
Best Practices

• Identify a practice **Champion**

• **Walk-in blood pressure checks** for all patients

• Running monthly or quarterly **reports** to identify uncontrolled HTN patients

• **Standardization** of blood pressure measurement techniques in the practice
Best Practices

• **Standard process** used to orient new staff

• Implementation of hypertension **treatment protocol**

• **Develop workflows** for verifying elevated BP

• **Home/Ambulatory Blood Pressure Monitoring Program**

• Create a **vitals signs collection room**

• Use of **Automatic BP cuffs**
Available Resources

• County Public Health Departments

• Practice Transformation TCPI and APC technical support: Contact Willian Brien, William.Brien@commongroundhealth.org 585-224-3149

• Videos:
  • Taking BP in an Office (video 1)
  • Taking a BP in an Office (video 2)
  • Taking BP at Home
Available Resources

• BP toolkits:
  • American Medical Association and The Johns Hopkins University: Engaging Patients in Self-Measurement.
  • Wisconsin Collaborative for Healthcare Quality: Toolkit for Improving Hypertension care & Outcomes.

• Common Ground Health Resource Library
Stage 2 Hypertension
Mathew Devine, D.O.
Content

• Classification of BPs

• What the data tells us in the region

• Identifying stage 2’s in your practice

• Resistant and pseudoresistant hypertension
Classification of Office Blood Pressure Levels

European Society of Hypertension/European Society of Cardiology (ESH/ESC):

- optimal - systolic blood pressure (SBP) < 120 mm Hg and diastolic blood pressure (DBP) < 80 mm Hg
- normal - SBP 120-129 mm Hg and/or DPB 80-84 mm Hg
- high normal - SBP 130-139 mm Hg and/or DBP 85-89 mm Hg
- grade 1 hypertension - SBP 140-159 mm Hg and/or DBP 90-99 mm Hg
- grade 2 hypertension - SBP 160-179 mm Hg and/or DBP 100-109 mm Hg
- grade 3 hypertension - SBP ≥ 180 mm Hg and/or DBP ≥ 110 mm Hg
- isolated systolic hypertension - SBP ≥ 140 mm Hg and DBP < 90 mm Hg
Classification of Office Blood Pressure Levels

Seventh report of Joint National Committee (JNC 7) for adults without acute end organ damage:

• normal if SBP < 120 mm Hg and DBP < 80 mm Hg; recheck in 2 years
• prehypertension if SBP 120-139 mm Hg or DBP 80-89 mm Hg; recheck in 1 year
• stage 1 hypertension if SBP 140-159 mm Hg or DBP 90-99 mm Hg; confirm within 2 months
• stage 2 hypertension if SBP ≥ 160 mm Hg or DBP ≥ 100 mm Hg; evaluate within 1 month or within 1 week if > 180/110 mm Hg
• definition of high blood pressure not redefined in Eighth Joint National Committee (JNC 8) 2014 guidelines for management of high blood pressure in adults
It’s complicated.

Consensus: patients with readings over 160/100 mm Hg
What the data tells us in our 8 Counties...

- **16,578** patients have uncontrolled HBP

- **23%** of the uncontrolled has stage 2 hypertension (n=3,795)

- Stage 2 hypertension grows with age
What the data tells us in our 8 Counties...

- Percent with Stage 2 - Disparities

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<th>Percentage</th>
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<td>27%</td>
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<tr>
<td>Males</td>
<td>21%</td>
</tr>
<tr>
<td>Low SES</td>
<td>26%</td>
</tr>
<tr>
<td>Medium SES</td>
<td>22%</td>
</tr>
<tr>
<td>High SES</td>
<td>21%</td>
</tr>
<tr>
<td>Black Non-Hispanic</td>
<td>30%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>28%</td>
</tr>
<tr>
<td>Other</td>
<td>26%</td>
</tr>
<tr>
<td>White Non-Hispanic</td>
<td>22%</td>
</tr>
</tbody>
</table>
Identifying Stage 2 Hypertension

• How to identify stage 2’s in your practice
  • Common Ground Health Registry
    • De-identified data
  • Pull the data through your EHR
    • Identified data

• Then what?
  • Consult the hypertension guideline management algorithm
Hypertension Guideline Management Algorithm

- Detailed algorithm for how to manage a hypertensive patient
Resistant & Pseudoresistant Hypertension
What is Resistant Hypertension?

• Systolic BP $\geq 140$ mm Hg or diastolic BP $\geq 90$ mm Hg despite concurrent use of 3 antihypertensive drugs of different classes, including a diuretic

• Exclusion of hypertension due to secondary cause, other possible diagnoses/contributing factors
What is Resistant Hypertension?

Typical patient characteristics:

- Age >75 years
- High baseline blood pressure
- Organ damage
- Co-morbid conditions
- Women
- Black ethnicity
- Excessive dietary sodium
Resistant Hypertension
Contributing Factors

• Patient lifestyle characteristics
  • Excess alcohol consumption/sodium intake
  • Consumption of liquorice

• Patient use of other drugs
  • NSAIDS
  • Contraceptive hormones
  • Herbal supplements
  • Use of cocaine and amphetamines, etc.
Pseudoresistant Hypertension

• Exclude **pseudoresistant hypertension** and **pseudohypertension**
  • 24-hour ambulatory blood pressure monitoring may be useful

• Pseudoresistant hypertension may be due to:
  • *Inadequate blood pressure measurement (most common)*
  • White coat hypertension
Pseudoresistant Hypertension

• Poor control could be due to:
  • Problems with medication selection
  • Poor Compliance
  • Patient characteristics
  • Poor patient-doctor relationship
  • Therapeutic inertia
"Mr. Osborne, may I be excused? My brain is full."
What you can do today to improve control in your practice...
Action Items

• Identify a practice **Champion**

• **Use Blood Pressure Measurement posters** in each exam room

• **Educate patients** regarding lifestyle changes and self-management

• **Standardize** blood pressure measurement techniques in the practice

• **Use of Automatic BP cuffs**
Action Items

Stage 2
28.6%
N = 10,420

Stage 1
71.4%
N = 26,069

No Current Read
11.3%
N = 24,958

Current Read
88.7%
N = 195,083
Action Items

Common Ground Health
High Blood Pressure Registry Report

By Age Group

By Race/Ethnicity

By Gender

By Socioeconomic Status

Common Ground Health 51
Action Items

High Blood Pressure Registry
Dec 2016

Number of patients diagnosed with hypertension in your practice

<table>
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<th>Year</th>
<th>Number of Records</th>
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<td>1,382</td>
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<tr>
<td>2013</td>
<td>1,598</td>
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<td>2014</td>
<td>3,411</td>
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<td>2015</td>
<td>3,650</td>
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<td>2016</td>
<td>4,144</td>
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Practice control rate compared to other practices in the registry

Target Control Rate = 85%

76.7%
Practice A

Control rates are based on JNC8 criteria as of Dec. 2016

Practice control rates by socio-economic status

<table>
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<th>Year</th>
<th>High SES</th>
<th>Moderate SES</th>
<th>Low SES</th>
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<td>2012</td>
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<td>73%</td>
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<td>73%</td>
<td>70%</td>
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<td>2014</td>
<td>75%</td>
<td>70%</td>
<td>70%</td>
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<tr>
<td>2015</td>
<td>77%</td>
<td>73%</td>
<td>71%</td>
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<tr>
<td>2016</td>
<td>77%</td>
<td>74%</td>
<td>77%</td>
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Practice control rates compared to the community

Target Control Rate = 85%

Avg. community control rates

- 2012: 71%
- 2013: 78%
- 2014: 74%
- 2015: 72%
- 2016: 77%

Avg. practice control rates

- 2012: 66%
- 2013: 60%
- 2014: 69%
- 2015: 68%
- 2016: 68%

Stage 2 hypertension
Stage 2: 160/100 or higher
Stage 1: 140/90 to 159/99

Breakdown of practice’s patients with uncontrolled hypertension

- Stage 2: 12%
- Stage 1: 52%
- No Read: 36%

*No reads are patients who have not had a blood pressure reading in 13 months.

115
Number of patients in your practice with stage 2 hypertension as of Dec. 2016

For more information, contact Carle Kunecki at 585-224-3157

Common Ground Health
Greater Rochester Chamber of Commerce
CommonGroundHealth.org

October 6, 2017
Questions
Public Health Resources

Derrik Chrisler
Collaborative Sharing
BP Monitors - Group Exercise

Brenda Chapman
Work Cited Page


• JAMA. 2014 Evidence-Base Guidelines for the Management of High Blood Pressure in Adults


Data-driven collaboration and innovation from the Finger Lakes region