



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

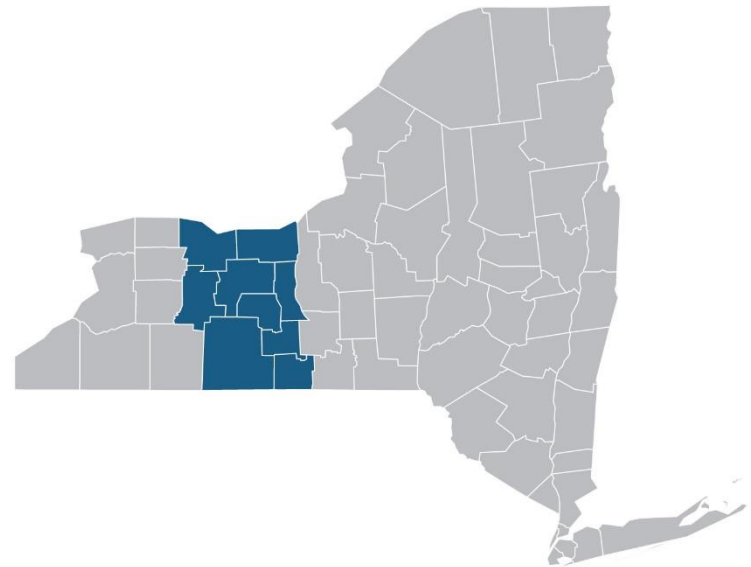
**HIGH
BLOOD
PRESSURE
COLLABORATIVE**

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.



HBP Collaborative Results – 8 County Region

Through June 30, 2017

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%)

No BP Reading

(Last 13 months)
10,578 (10.9%)

New Patients

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

Dx HBP (JNC8)

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

Uncontrolled

16,578 (19.6%)

Controlled

68,060 (80.4%)

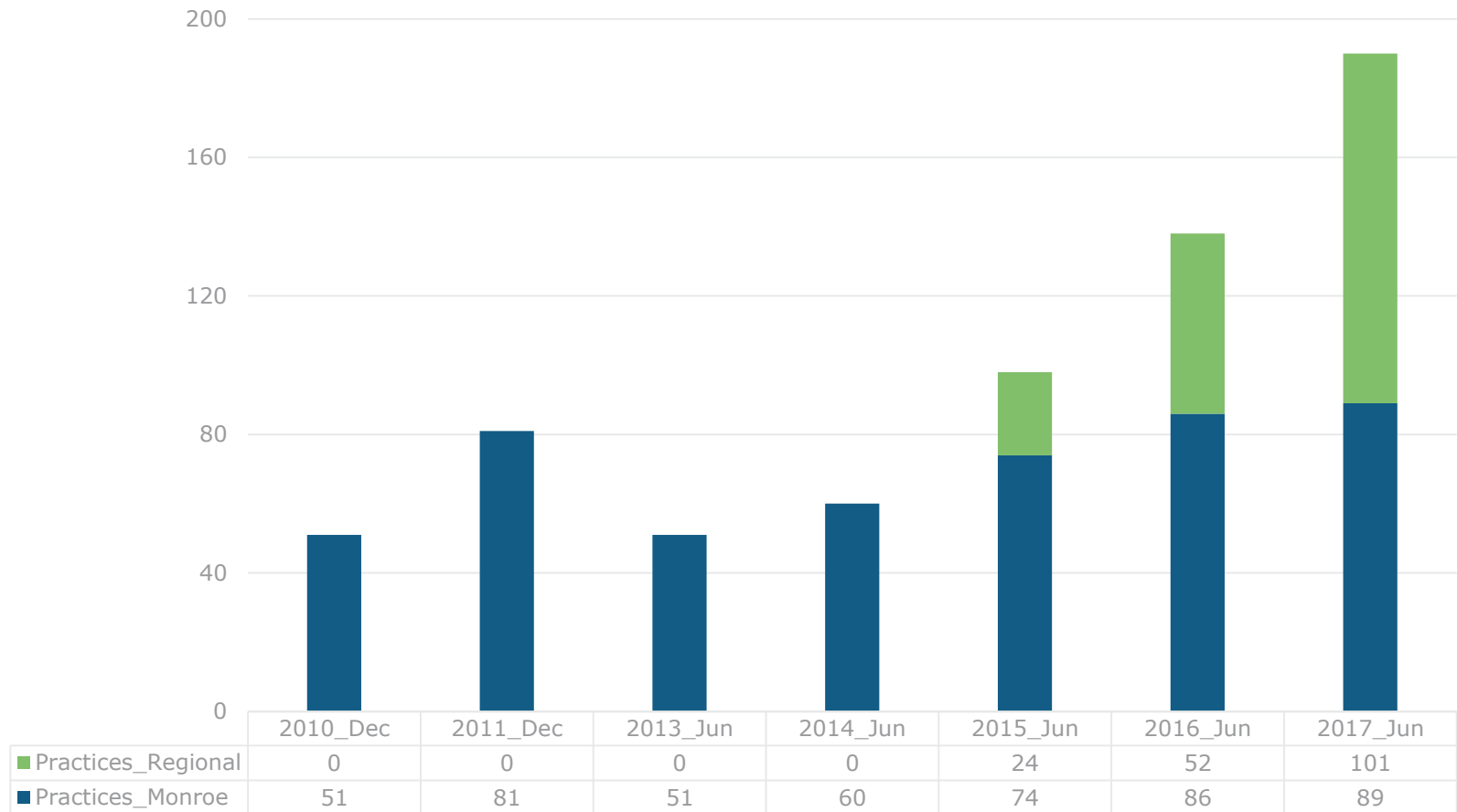
Stage 1 HBP

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

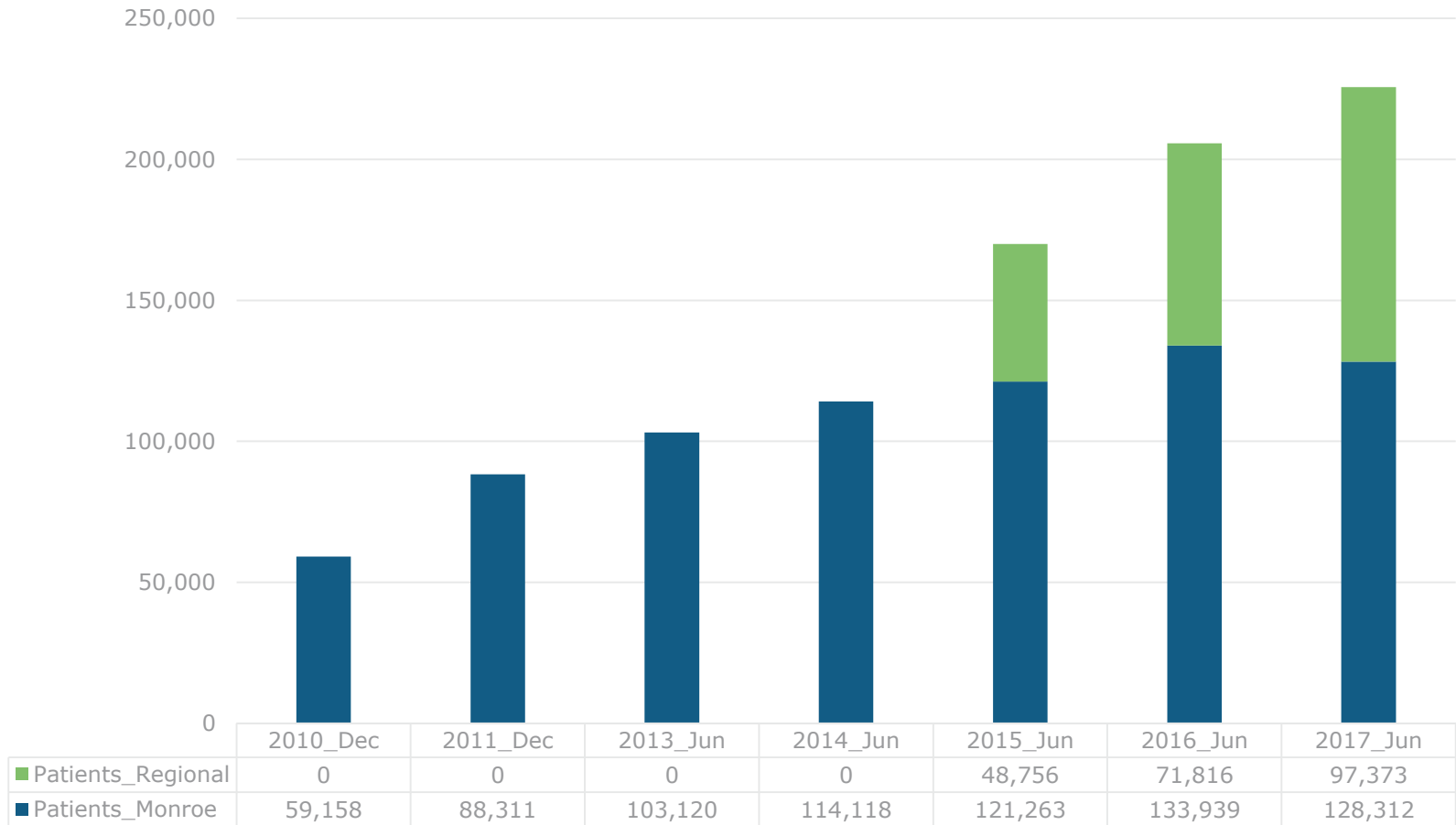
Stage 2 HBP

(160/100)
3,795 (22.9%)

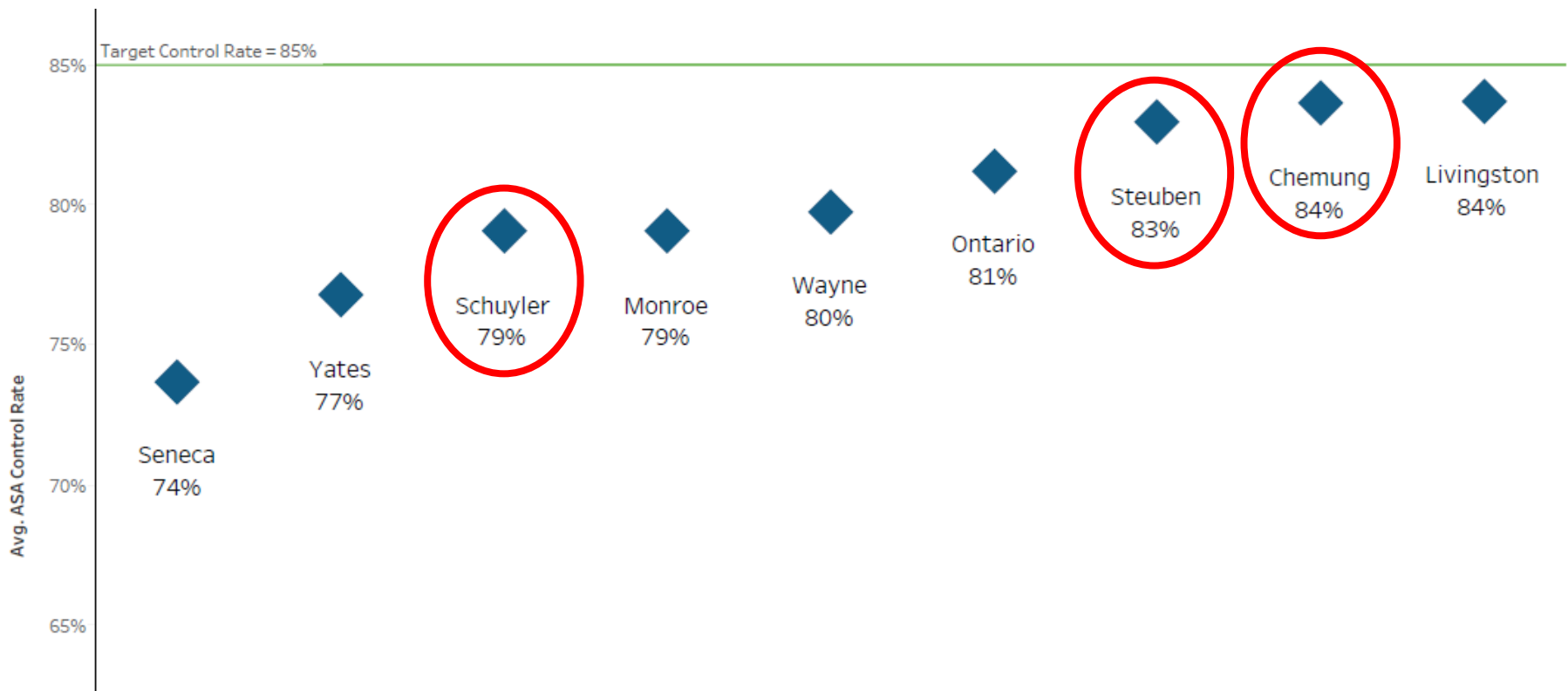
High Blood Pressure Registry – # of Practices



High Blood Pressure Registry – # of Patients



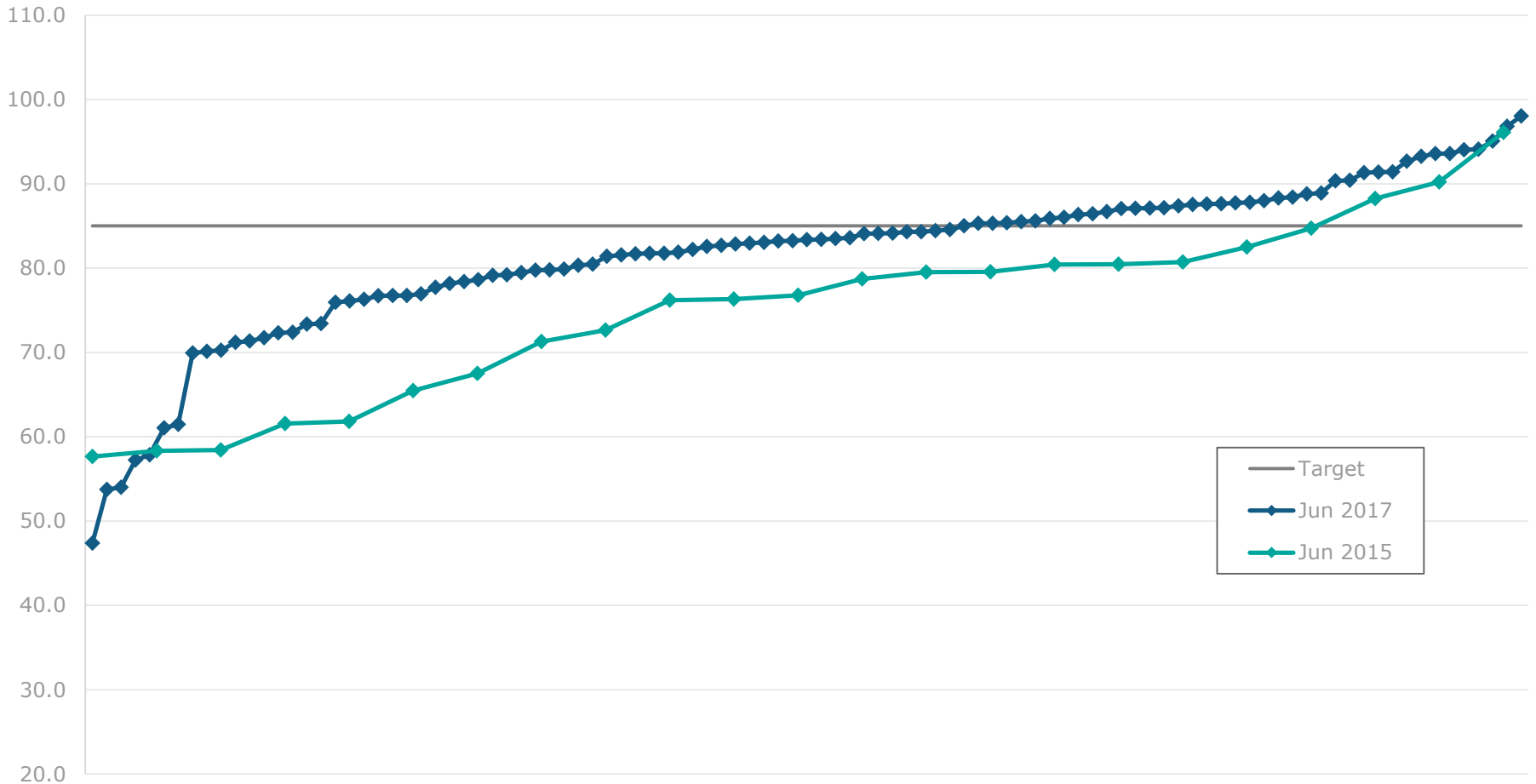
Percent of Patients with Blood Pressure Controlled



Rates are age/sex adjusted to the age/sex distribution of the June 2011 registry.
June 2017 High Blood Pressure registry

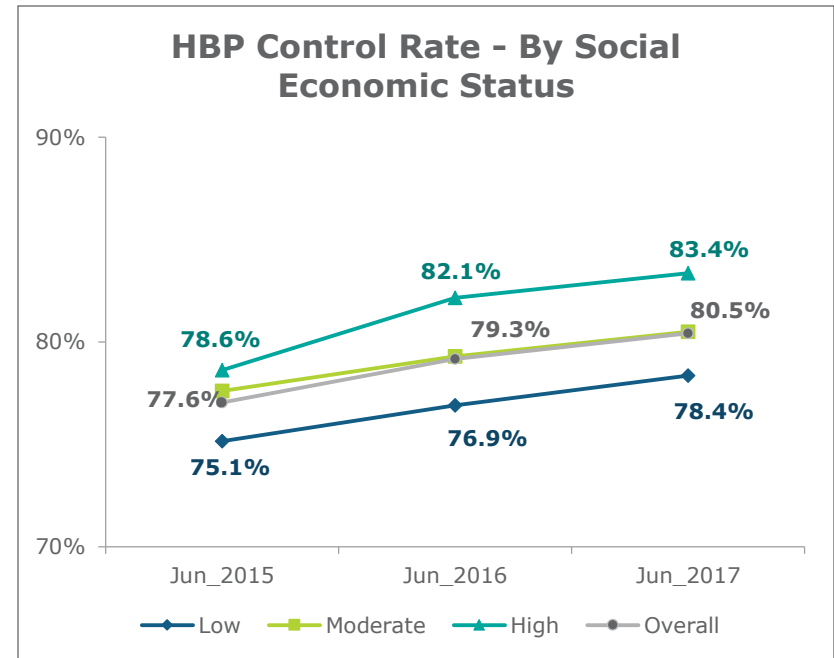
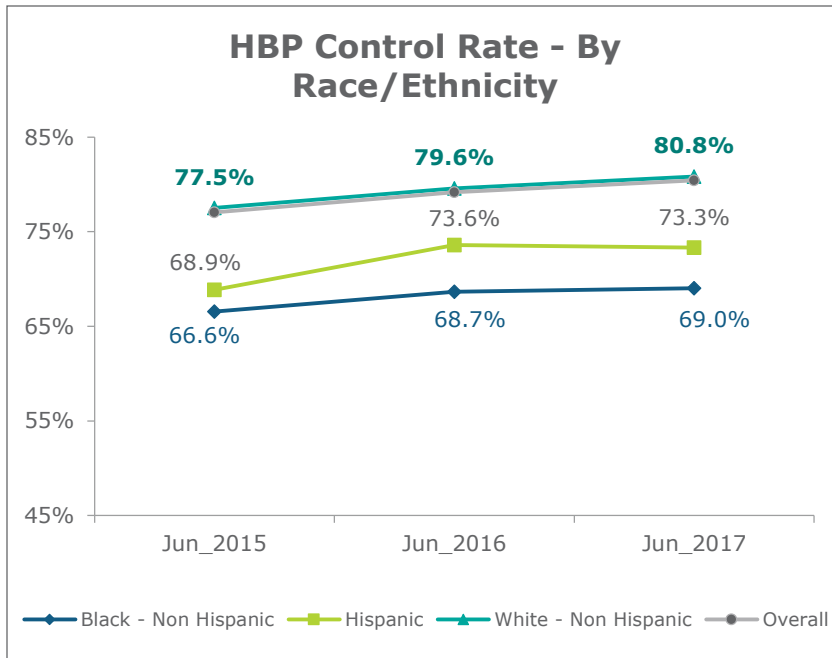
% of High Blood Pressure Patients with BP Controlled

Practices in the 8-County FL Region



Effect of SD Variables on Control

Regional – 8 Counties



- HBP Registry – JNC8 Measures

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

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

3. Pickering TG, Hall JE, Appel LJ, et al. Recommendations for blood pressure measurement in humans and experimental animals: part 1: blood pressure measurement in humans: a statement for professionals from the Subcommittee of Professional and Public Education of the American Heart Association Council on High Blood Pressure Research. *Circulation*. Feb 8 2005;111(5):697-716.

4. O'Brien E, Asmar R, Beilin L, et al. European Society of Hypertension recommendations for conventional, ambulatory and home blood pressure measurement. *JHypertens* 2003; 21: 821-848.

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
 - OR**
 - 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 \geq 180 mm Hg and/or DBP \geq 110 mm Hg
- isolated systolic hypertension - SBP \geq 140 mm Hg and DBP < 90 mm Hg

Classification of Office Blood Pressure Levels

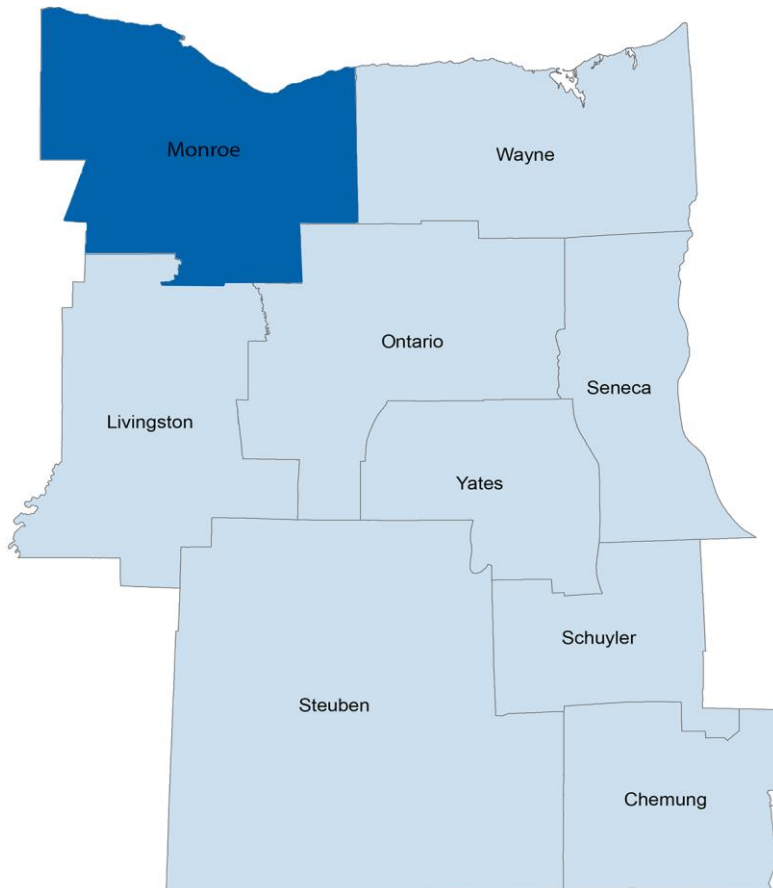
Seventh report of Joint National Committee (JNC 7) for adults without acute end organ damage:

- 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 \geq 160 mm Hg or DBP \geq 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

Females	27%
Males	21%

Low SES	26%
Medium SES	22%
High SES	21%

Black Non-Hispanic	30%
Hispanic	28%
Other	26%
White Non-Hispanic	22%

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

Resistant & Pseudoresistant Hypertension

What is Resistant Hypertension?

- Systolic BP ≥ 140 mm Hg or diastolic BP ≥ 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

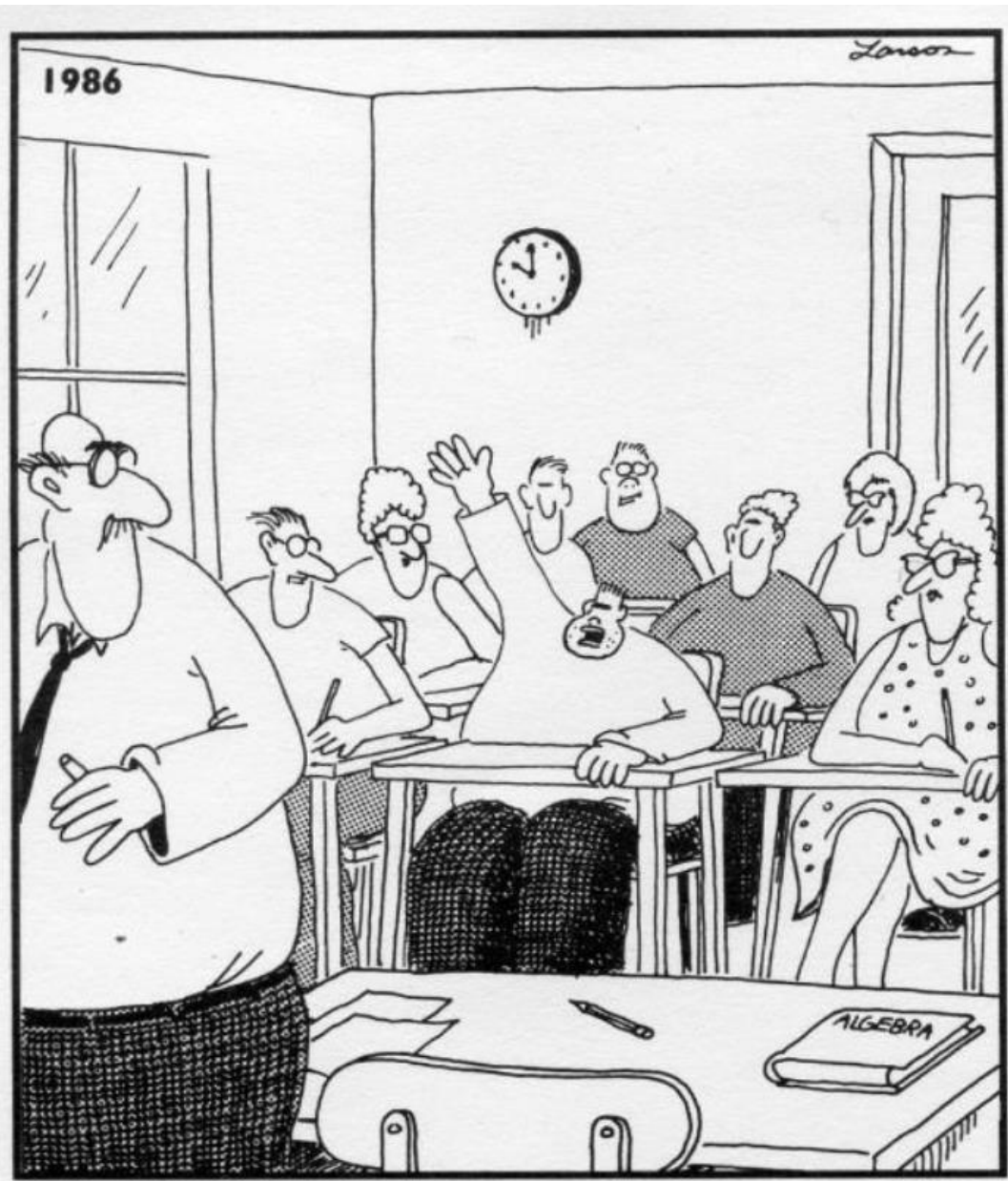
- Patient lifestyle characteristics
 - Excess alcohol consumption/sodium intake
 - Consumption of liquorice
- Patient use of other drugs
 - NSAIDS
 - Contraceptive hormones
 - Herbal supplements
 - Use of cocaine and amphetamines, etc.

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



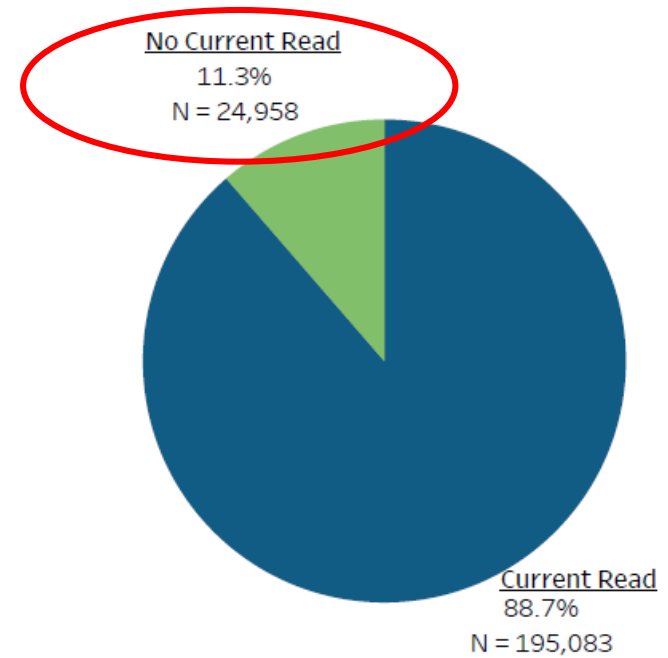
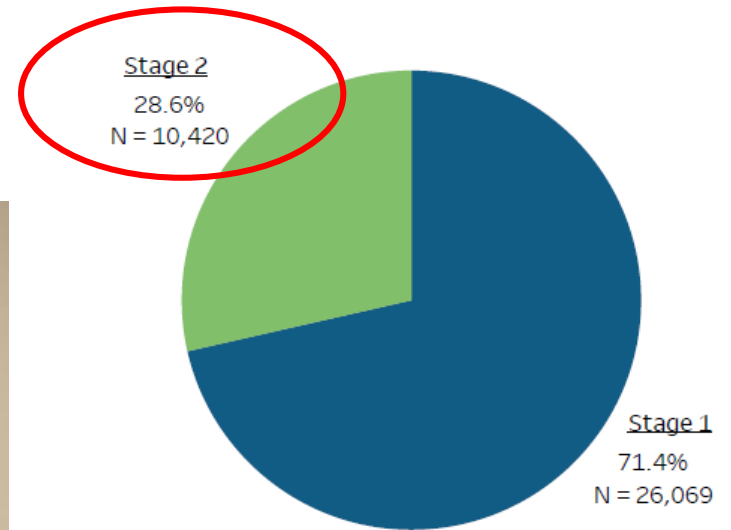
“Mr. Osborne, may I be excused? My brain is full.”

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



Action Items

Common Ground Health High Blood Pressure Registry Report

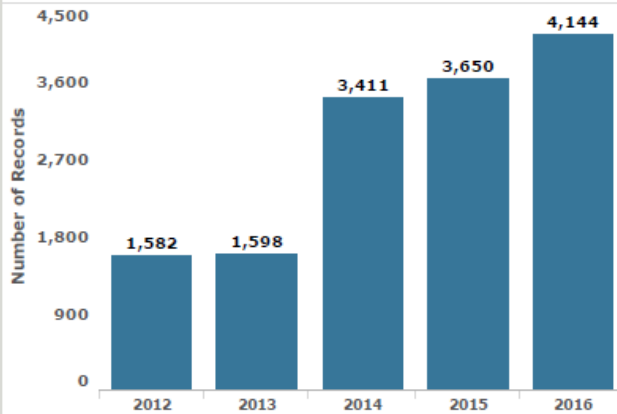


Action Items

High Blood Pressure Registry

Dec 2016

Number of patients diagnosed with hypertension in your practice



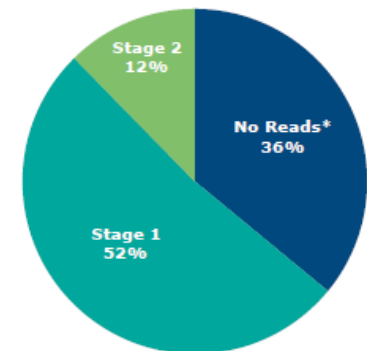
Practice control rate compared to other practices in the registry



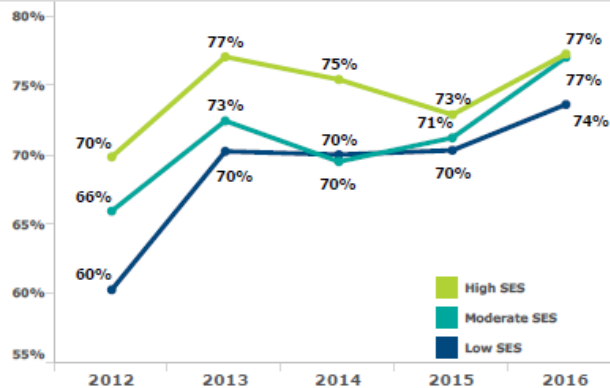
Stage 2 hypertension

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

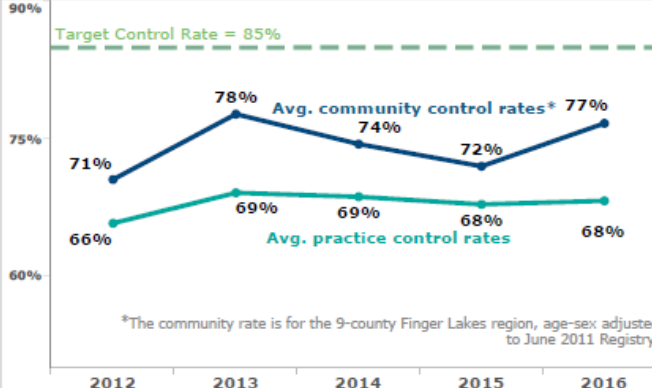
Breakdown of practice's patients with uncontrolled hypertension Dec. 2016



Practice control rates by socio-economic status



Practice control rates compared to the community



*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:
Catie Kunecki at 585-224-3157



Questions



Public Health Resources

Derrick Chrisler

Collaborative Sharing

BP Monitors - Group Exercise

Brenda Chapman

Work Cited Page

- JNC 8 Guidelines for the Management of Hypertension in Adult. American Academy of Family Physicians.
- JAMA. 2014 Evidence-Base Guidelines for the Management of High Blood Pressure in Adults
- U.S. Department of Health and Human Services National Institute of Health National Heart, Lung, and Blood Institute. Your Guide to Lowering Blood Pressure
- Wisconsin Collaborative for Healthcare Quality. "Toolkit for Improving Hypertension Care & Outcomes." Wisconsin Collaborative for Healthcare Quality, UW Health Innovation Program; 2015. Available at: <http://www.hipxchange.org/HypertensionCare>.



Data-driven collaboration and innovation
from the Finger Lakes region



1150 University Ave, Rochester, N.Y. 14607-1647 (585) 224-3101 commongroundhealth.org