Welcome!

NORTH DAKOTA DEPARTMENT of HEALTH

SANFORD HEALTH

Altru | Improving Health, Enriching Life

Essentia Health
Here with you

Today's Agenda

12:45 – 1:15	Overview of Hypertension in North Dakota	Tiffany Knauf, MAIS
1:15 – 1:30	Target: BP Program – American Heart Association	Mindy Cook, BSN
1:30 – 2:00	Principles of the DASH Diet	Lynn Holum, RDN, LD, CDE
2:00 – 2:45	Blood Pressure Protocol	Patricia Spier, RN-BC, PCMH-CCE, Barb Rice, RN-BC, Robin Iszler, RN
2:45 – 3:15	Break (Snacks provided by Essentia Health)	
3:15 – 4:15	Hypertension Overview	Dr. Vincent Canzanello, M.D.
4:15 – 5:15	How to Engage Patients When They Can't Feel the Problem: A MI Approach to Hypertension	Dr. Jon Ulven, Ph.D., L.P.
5:15 – 5:30	Evaluation and Wrap Up	

New for 2017!

Physician/Advanced Practice Training –
TONIGHT from 6:00p – 8:00p

6:00 – 7:00	Hypertension Update	Dr. Vincent Canzanello, M.D.
7:00 – 8:00	Stress Management Training and Cardiovascular Health: Have We Found the Holy Grail?	Dr. Jon Ulven, Ph.D., L.P.

Overview of Hypertension in North Dakota

Tiffany Knauf, MAIS
Hypertension/Health Systems Coordinator
North Dakota Department of Health

Goals

- Review N.D. hypertension data
- Share the risk factors for developing hypertension
- Hypertension symptoms
- Risk factors and their impact on hypertension

High Blood Pressure

- **Over ONE billion** people have hypertension globally.
- **About 75 million** American adults have high blood pressure—that's 1 of every 3 adults.
- Only **about half (54%)** of people with high blood pressure have their condition under good control.
- Nearly **1 of 3 American adults** has prehypertension, defined as blood pressure that is higher than normal, but not yet in the high blood pressure range.
- Hypertension costs the nation **$46 billion annually**.

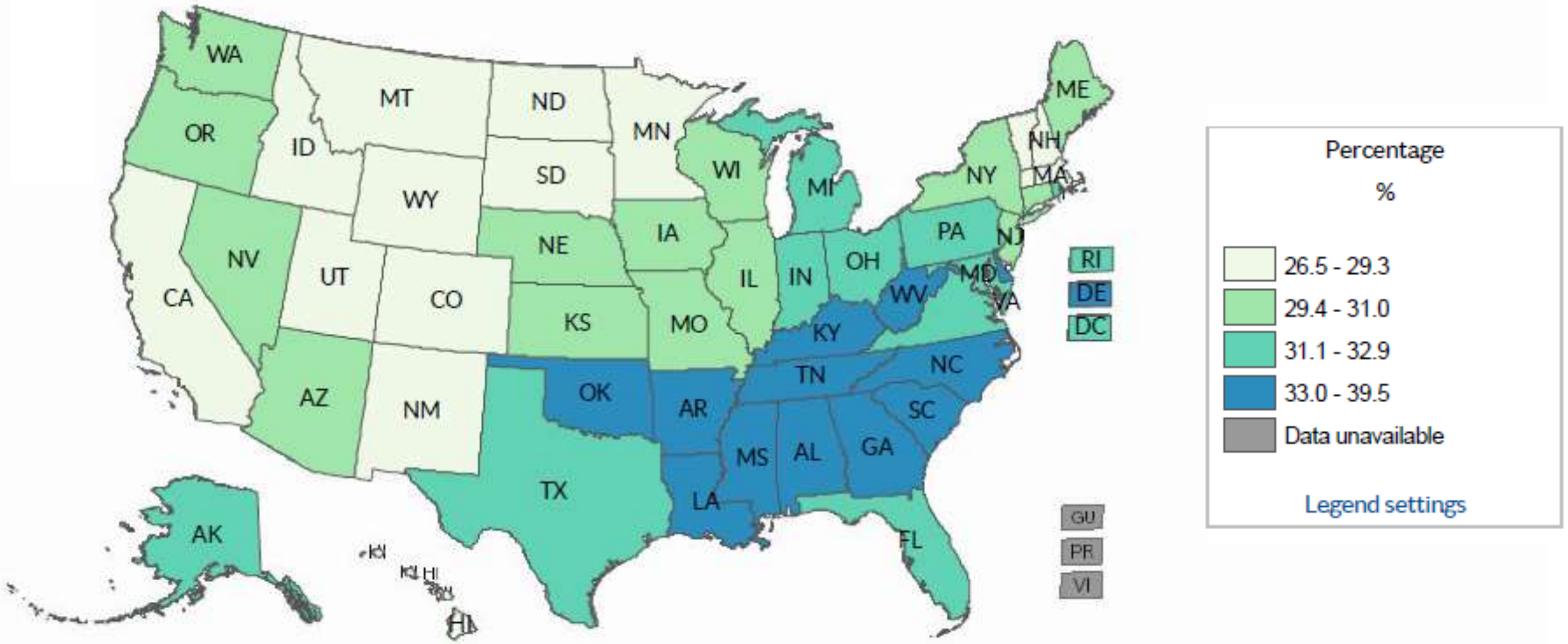
Source: http://www.cdc.gov/bloodpressure/facts.htm and AHA

2013

Heart Disease and Stroke Objective 5: Prevalence of hypertension among US adults (18+) (Percentage); BRFSS

Priority Area: Healthy People 2020

View by: Overall



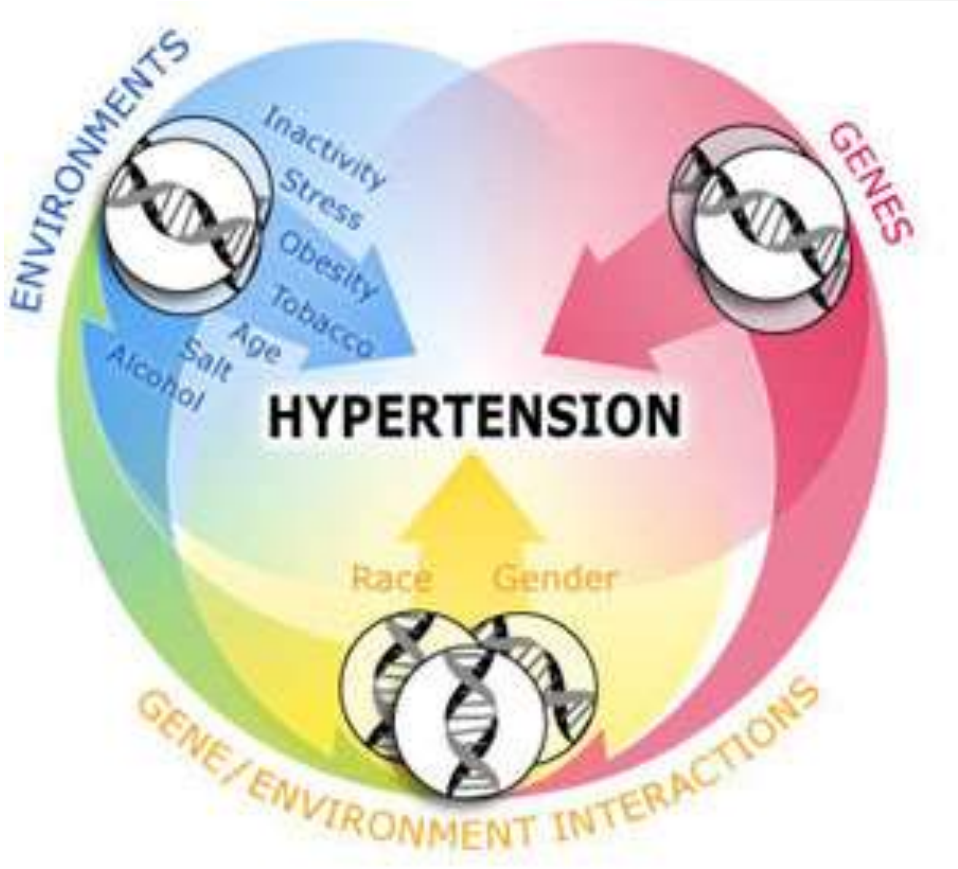
Blood Pressure Levels Vary by Age

Age	Men (%)	Women (%)
20-34	11.1	6.8
35-44	25.1	19.0
45-54	37.1	35.2
55-64	54.0	53.3
65-74	64.0	69.3
75 and older	66.7	78.5
All	34.1	32.7

Source: http://www.cdc.gov/bloodpressure/facts.htm

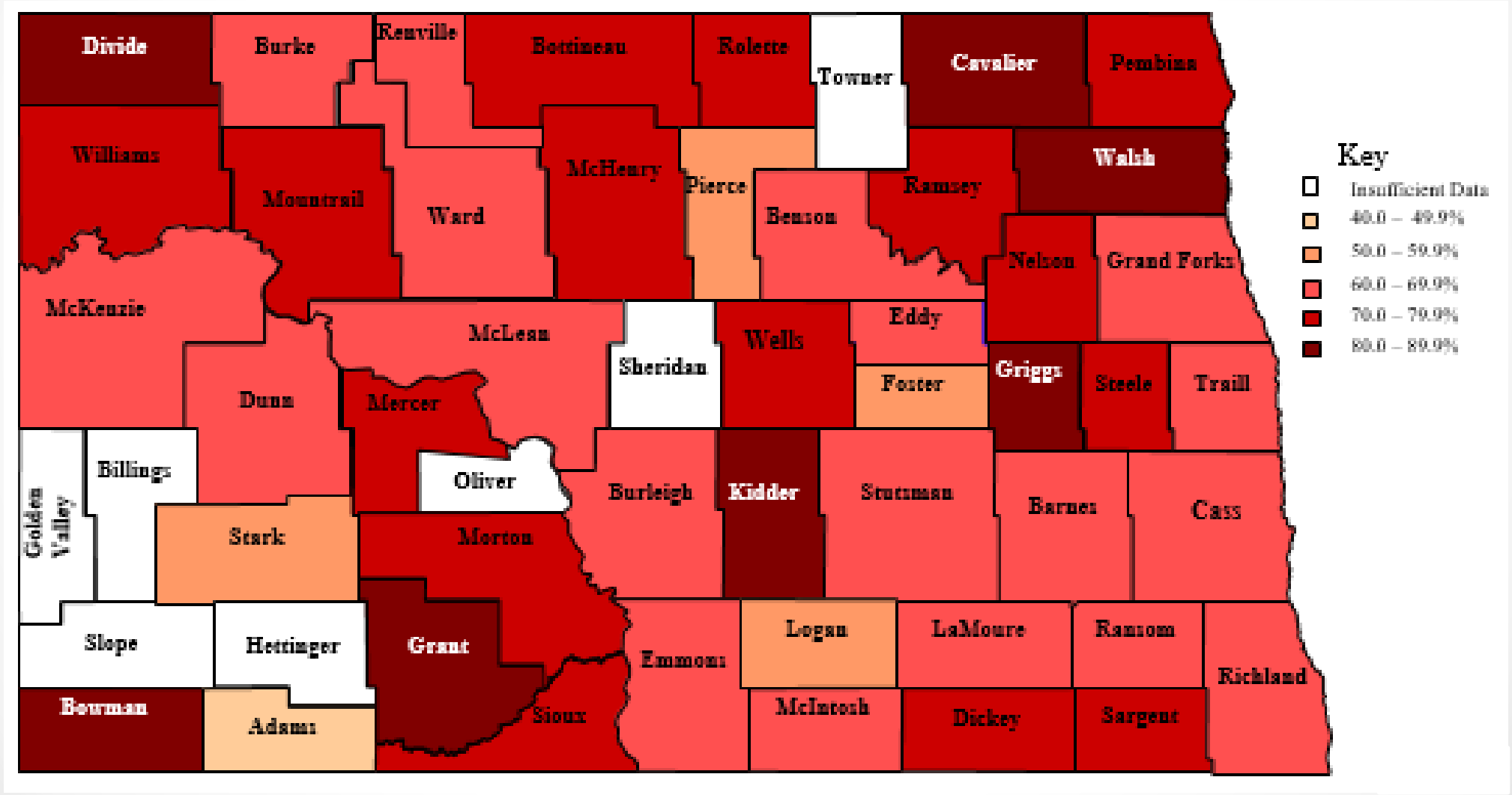
Risk Factors For Developing Hypertension

- Family history
- History of borderline hypertension
- African American ancestry
- Overweight/Obese
- Excessive alcohol intake
- Physical inactivity
- Excessive salt intake
- Smoking
- Kidney Disease
- Cholesterol



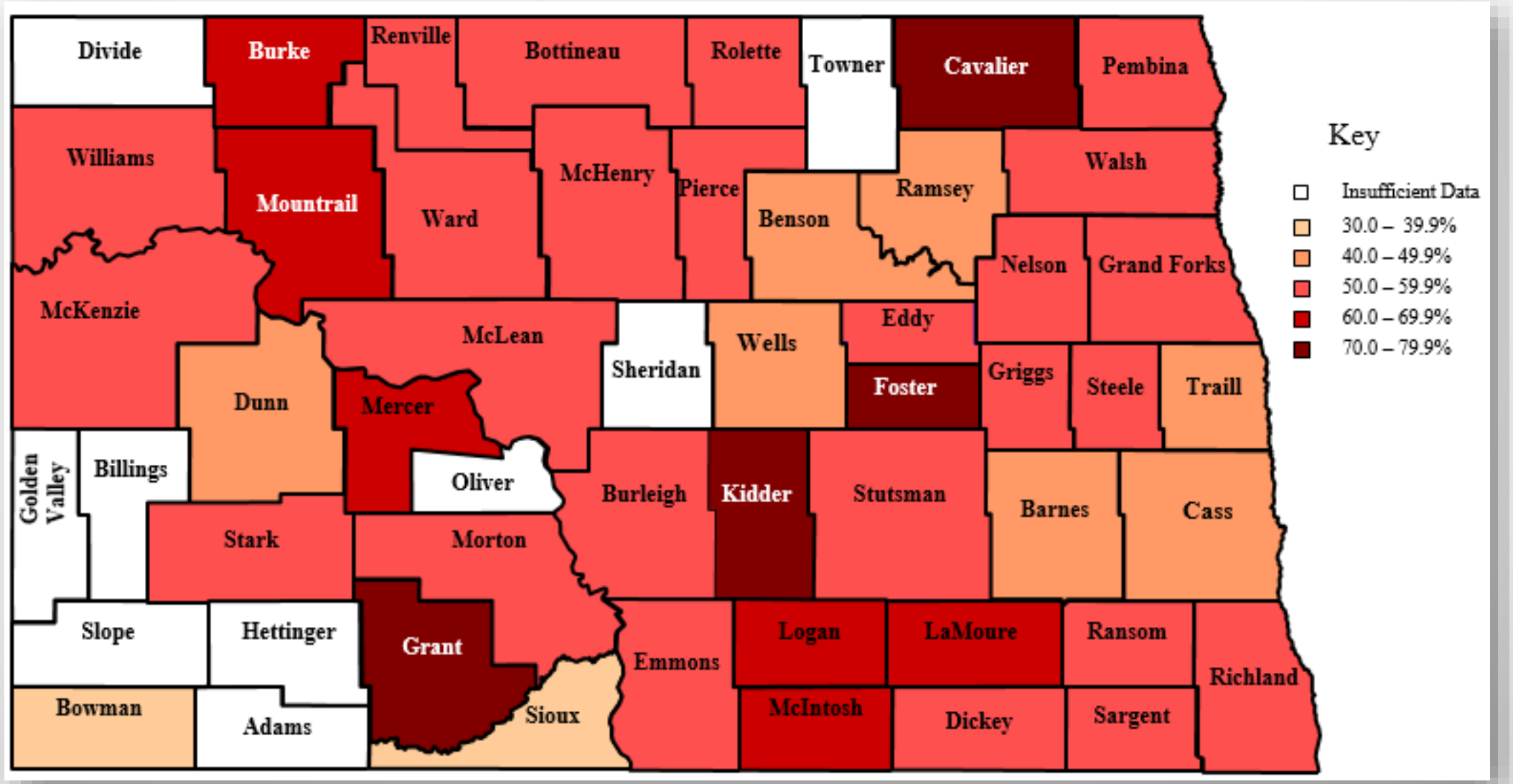
Risk Factor: Overweight/Obese

Percentage of Residents Overweight/Obese in N.D. (BRFSS, 2015)



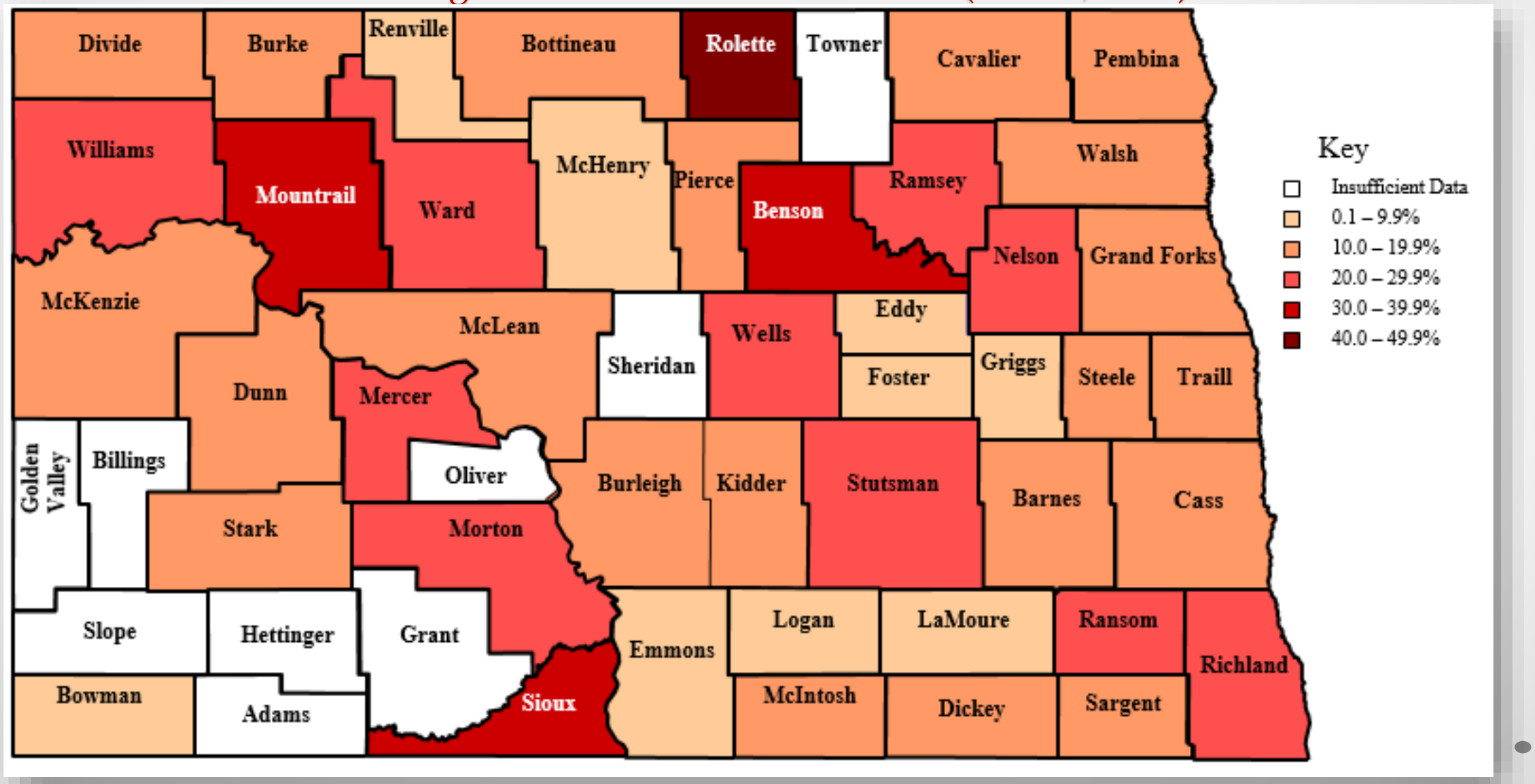
Risk Factor: Inadequate Physical Activity

Percentage of Inadequate Physical Activity in N.D. (BRFSS, 2015)



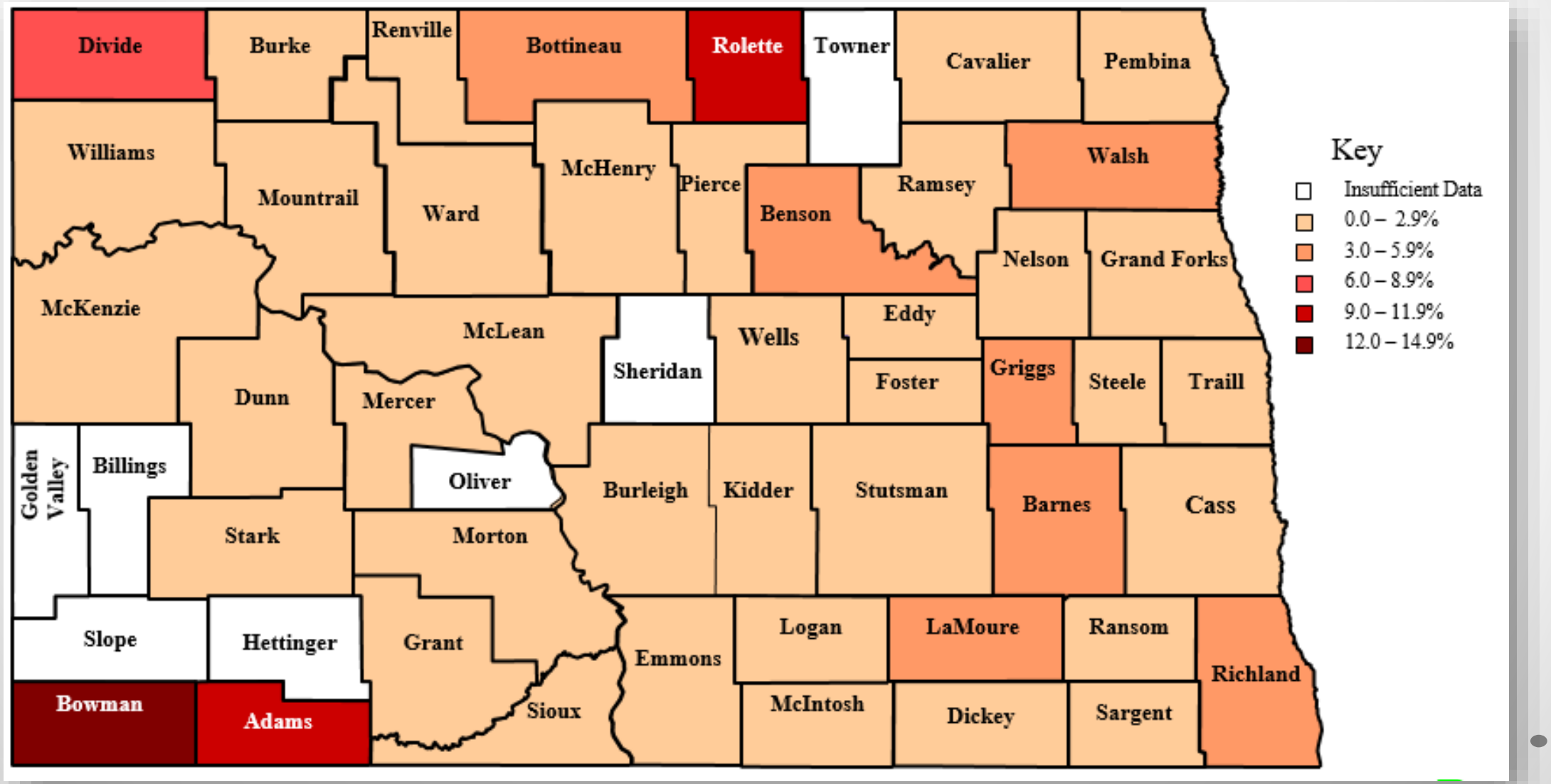
Risk Factor: Smoking

Percentage of Current Smokers in N.D. (BRFSS, 2015)



Risk Factor: Kidney Disease

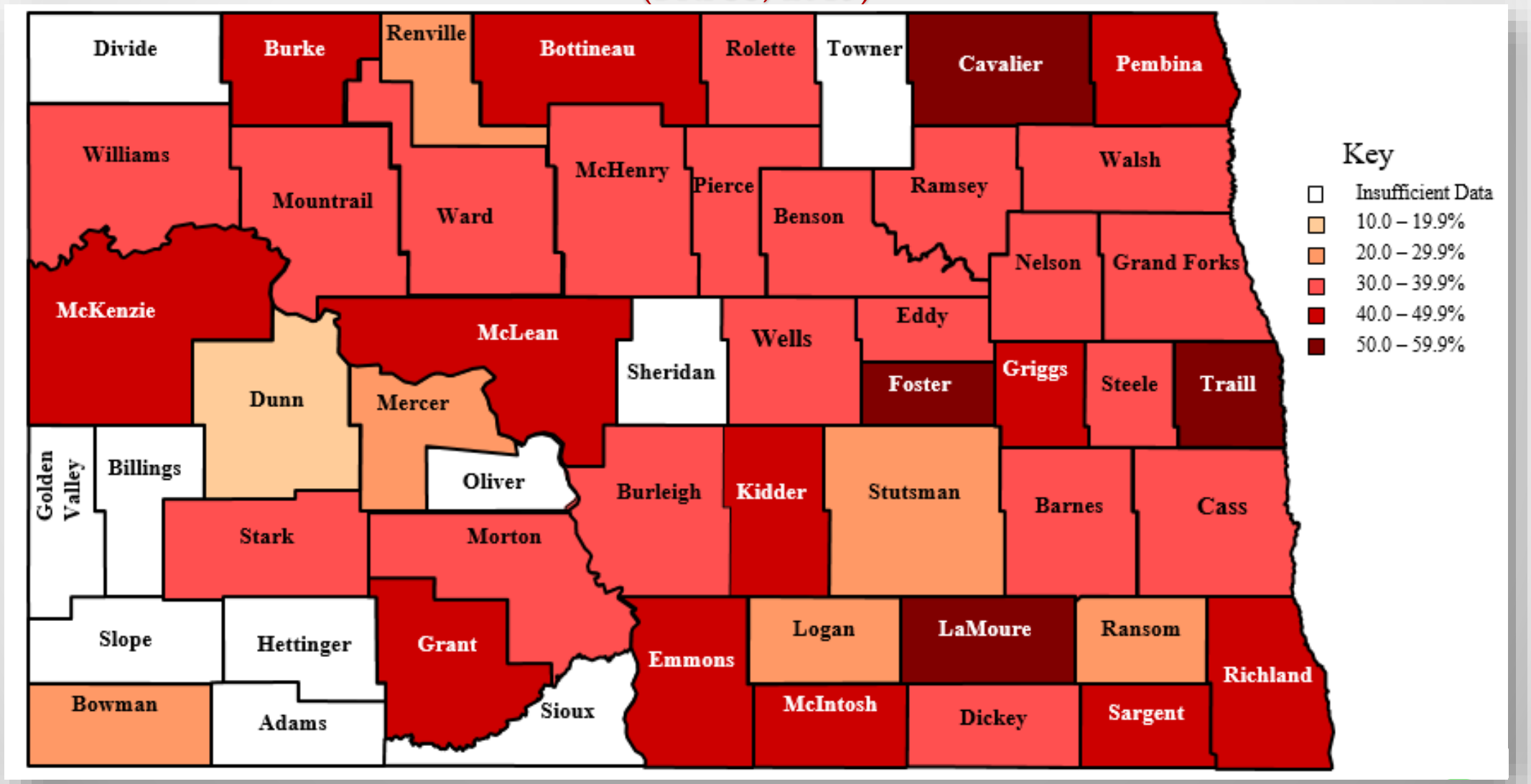
Percentage of Residents with Kidney Disease in N.D. (BRFSS, 2015)



Risk Factor: Cholesterol

Percentage of residents that have had their cholesterol checked and the results were high in N.D.

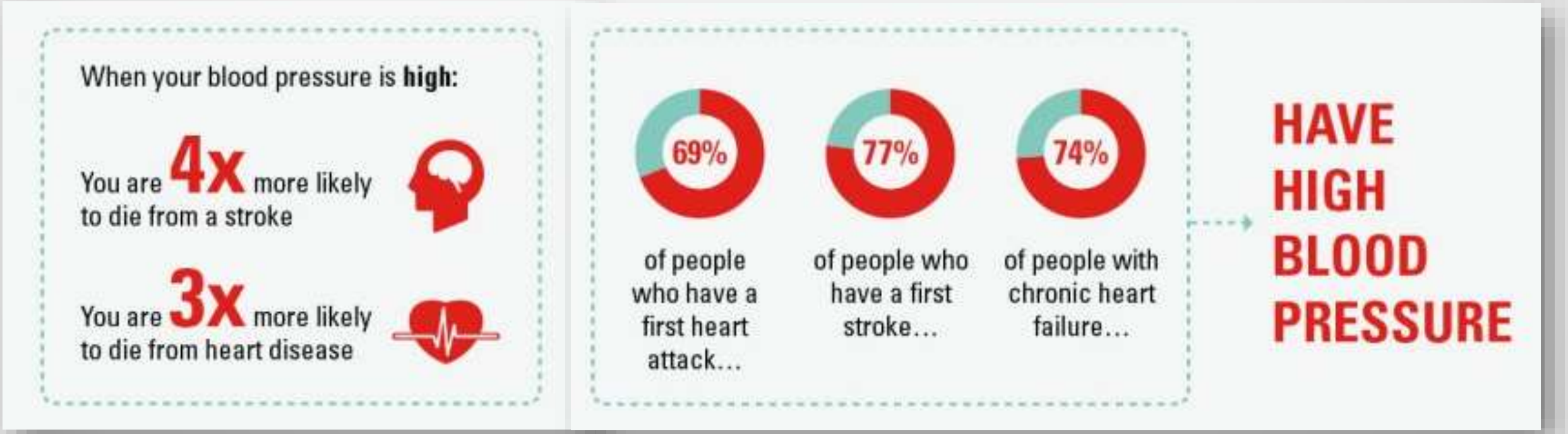
(BRFSS, 2015)



Common Symptoms of High Blood Pressure

- Headaches
- Shortness of breath, especially with exertion
- Symptoms related to complications:
  - Chest discomfort
  - Stroke
  - Renal failure

High Blood Pressure Matters



Source: http://www.cdc.gov/bloodpressure/facts.htm

High Blood Pressure Matters

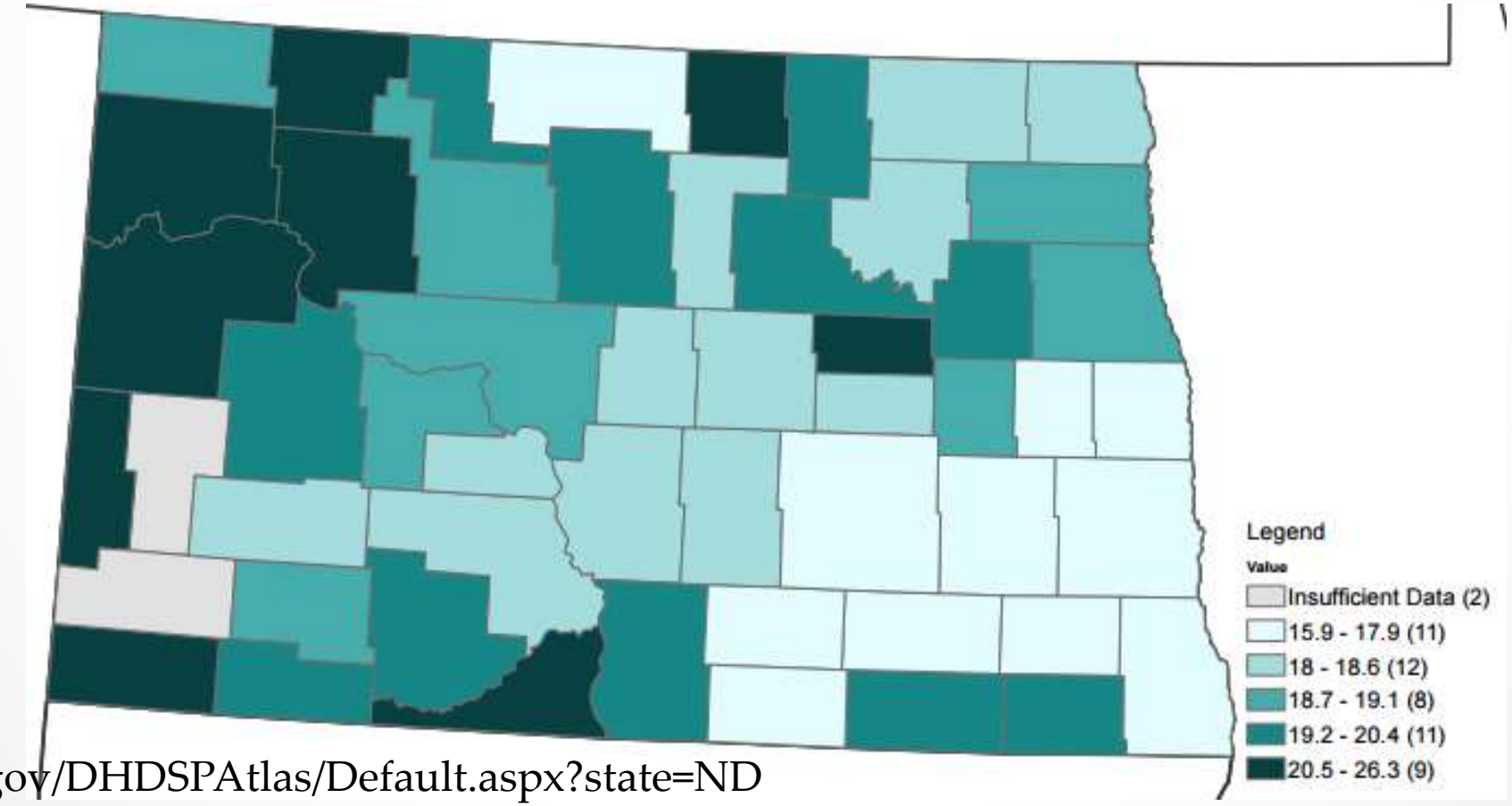
More than **360,000** American deaths in 2013 included high blood pressure as a primary or contributing cause.

Source: http://www.cdc.gov/bloodpressure/facts.htm and AHA

Medication Adherence Matters

It is estimated that **3 out of 4** Americans do not take their medication as directed.

Blood Pressure Medication Non-Adherence Percentage,
Medicare Part D Beneficiaries Aged 65+, 2014



Source: AHA and CDC.

https://nccd.cdc.gov/DHDSPAtlas/Default.aspx?state=ND

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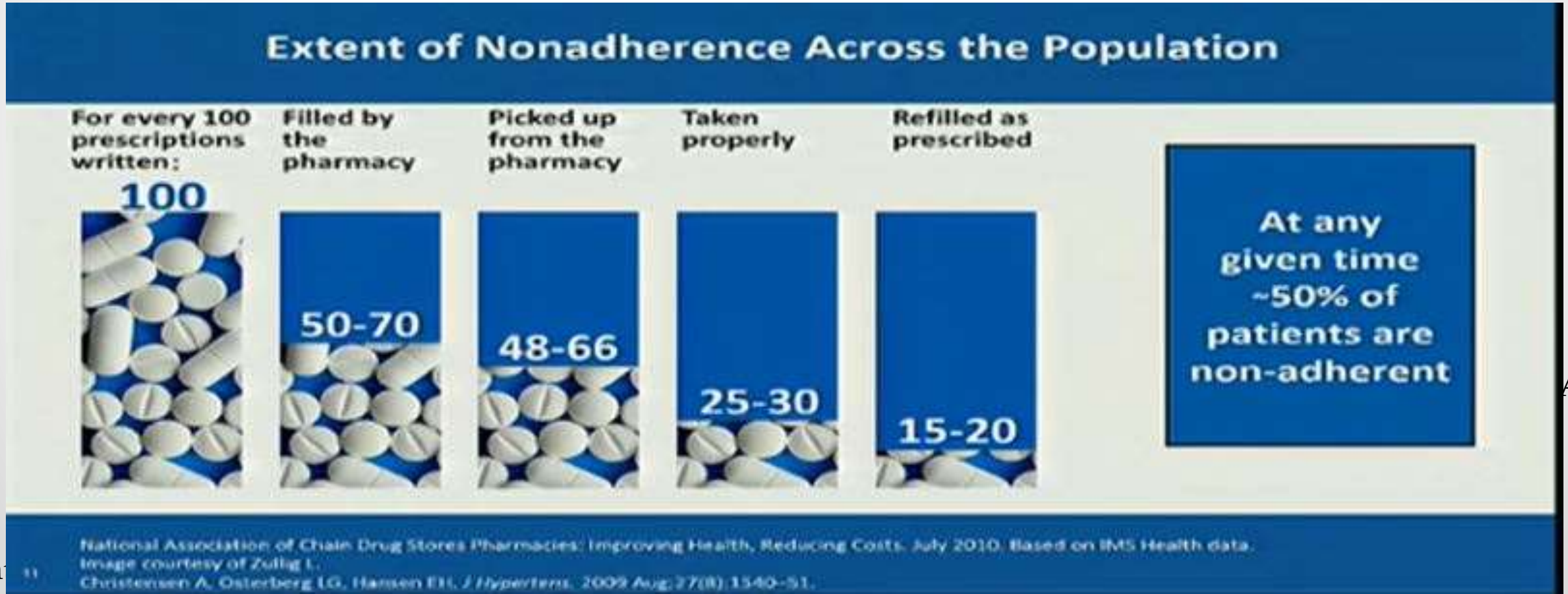

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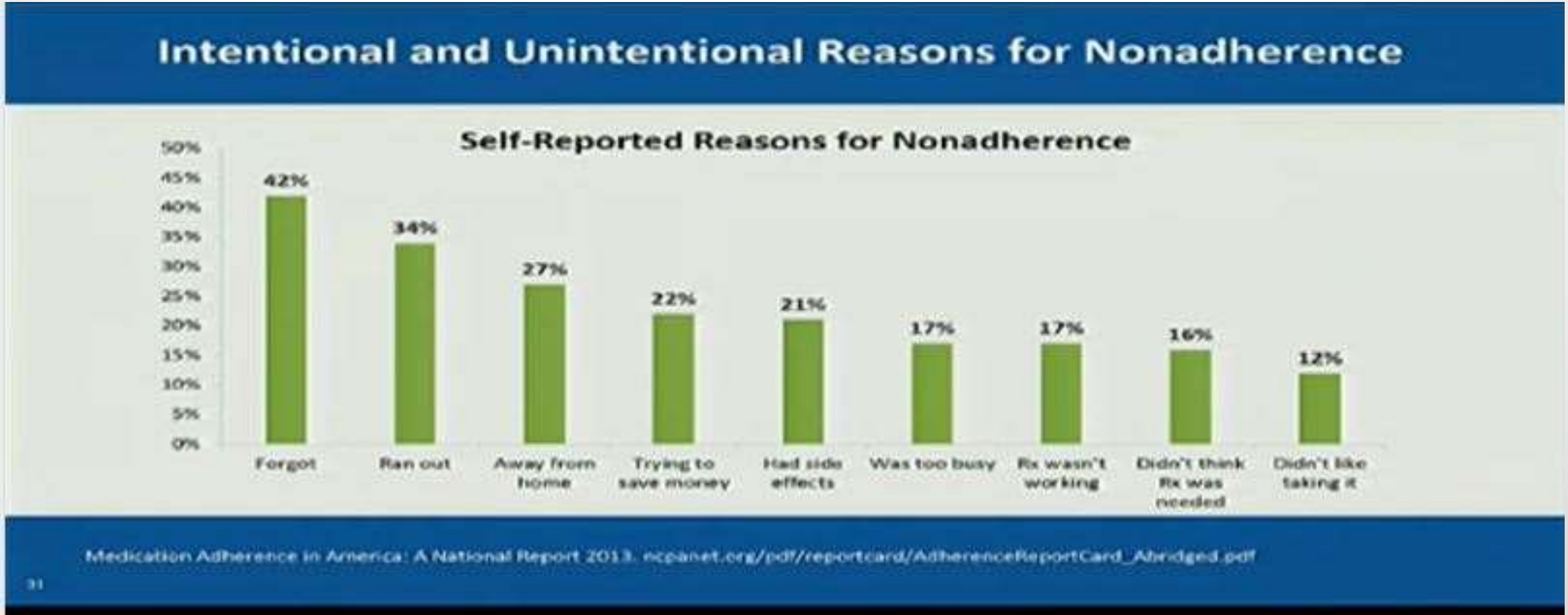

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Thank you!

Tiffany Knauf
Hypertension/Health Systems Coordinator
NDDoH
tknauf@nd.gov

TARGET: BP™

AHA Programs and Resources to assist with Hypertension

Mindy Cook, BSN

Blood Pressure Control Evades Us

One in three American adults — about 80 million people — have high blood pressure

High blood pressure contributes to heart attack and heart failure, stroke, kidney failure, and other deadly consequences

New data supports recommendations for keeping blood pressure low

What is *Target: BP*?

TARGET: BP™

American Heart Association | American Stroke Association

life is why™

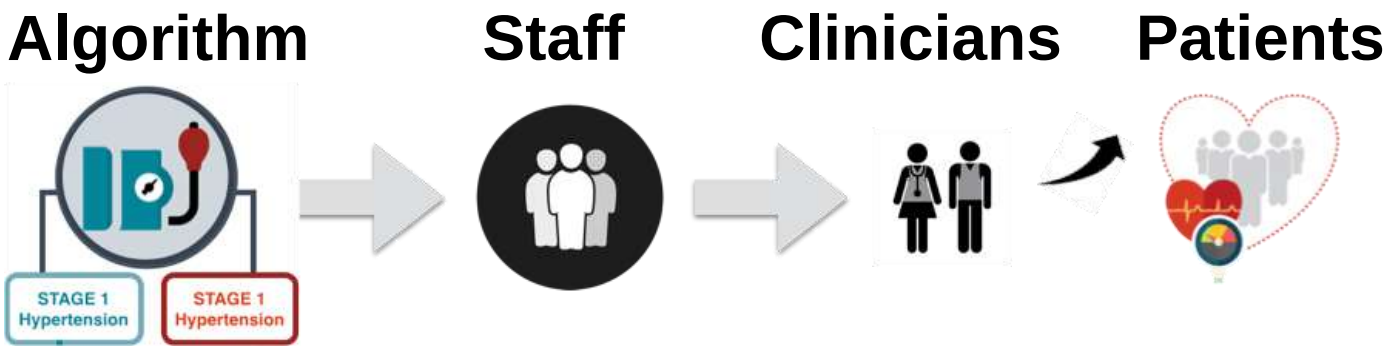
AMA AMERICAN MEDICAL ASSOCIATION

Million Hearts®

University Hospitals

- ✓ A call to action motivating hospitals, medical practices, practitioners and health services organizations to prioritize blood pressure control
- ✓ A source for tools and assets for healthcare providers to use in practice, including the AHA/ACC/CDC Hypertension Treatment Algorithm
- ✓ Recognition for healthcare providers who attain high levels of blood pressure control in their patient populations, particularly those who achieve 70, 80 or 90 percent control

Health Impact Goal: Driving toward moving 13.6 million individuals from uncontrolled to controlled blood pressure



- **Target: BP™** A nationwide initiative to help healthcare providers and patients achieve better blood pressure control at the best levels to improve health. *Target: BP™* will support physicians and care teams in helping their patients with high blood pressure reach a blood pressure goal of lower than 140/90 mm Hg, based on current AHA guidelines.

Reduction in cardiovascular events and all-cause mortality with intensive blood pressure control: Main results of the Systolic Blood Pressure Interventional Trial (SPRINT)

Purpose: To evaluate whether intensive blood pressure control will reduce cardiovascular events and all-cause mortality. This trial was stopped early because of the positive, beneficial results. These results reflect events through August 20, 2015.

Trial Design: 9361 older adults (≥50 years old [avg. 67.9 years]) with hypertension and at least one additional risk factor for cardiovascular disease (CVD) were randomized to intensive blood pressure therapy (intensive), targeting a systolic BP (SBP) <120 mm Hg, or standard therapy (standard), targeting a systolic BP <140 mm Hg. Excluded patients included those with DM, past stroke, or advanced kidney disease.

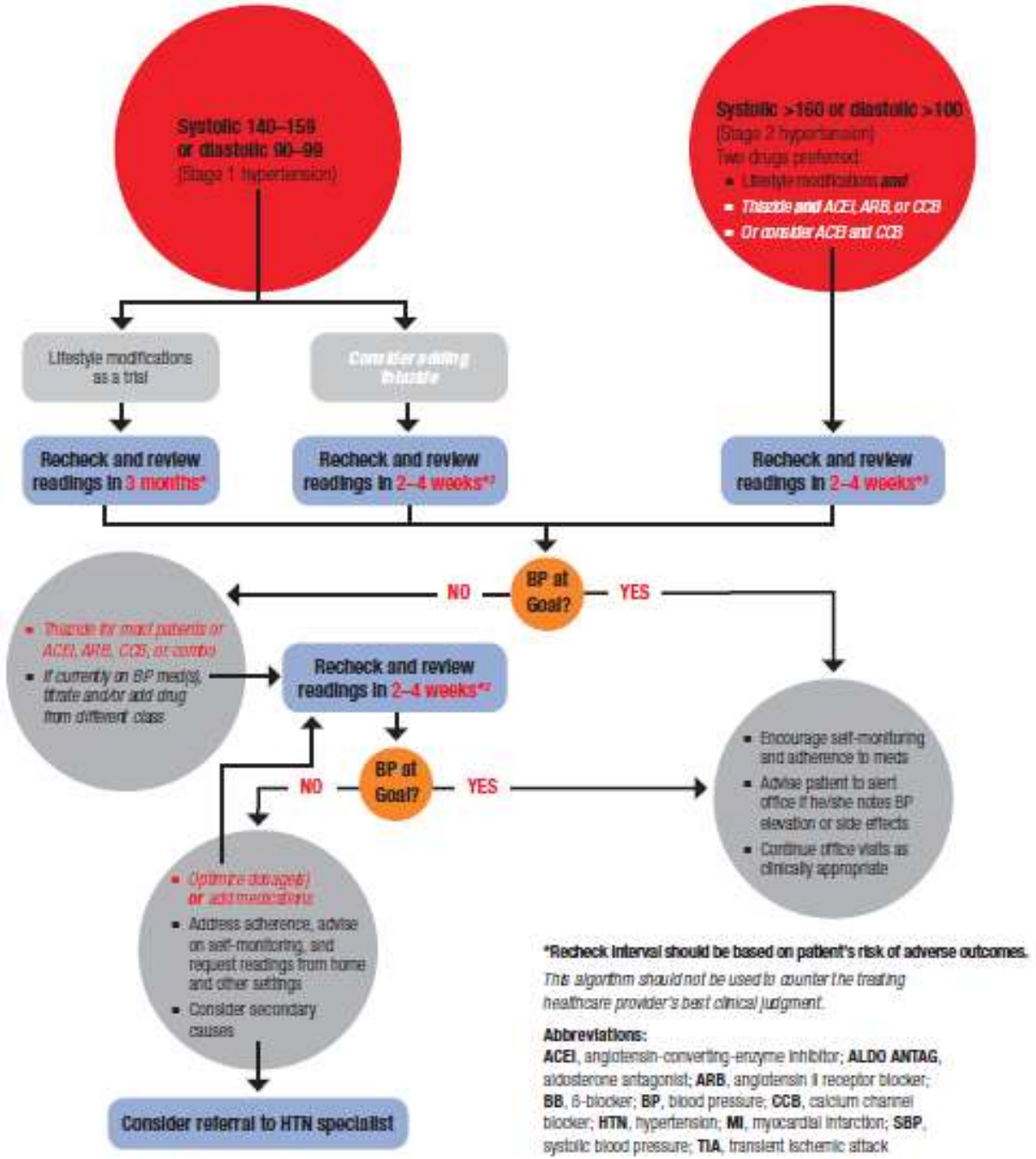
Primary Endpoint: composite: first occurrence of MI, ACS, stroke, HF, or cardiovascular disease death.

Trial Results – (median 3.26 years)	Intensive Therapy vs. Standard Therapy	P value	Serious Adverse Events	Higher Specific Adverse Events in Intensive Group
Primary Endpoint	↓ 25%	< 0.001	No overall difference: 4.7% Intensive vs. 2.5% standard, p=<0.001	hypotension syncope electrolyte abnormalities acute kidney injury or failure
All-cause mortality	↓ 27%	0.003	Incidence of bradycardia or falls resulting in injury was not higher in the intensive treatment group Orthostatic hypotension *less* in intensive treatment group	

Conclusions: Intensive blood pressure therapy to a lower systolic blood pressure target significantly reduced CVD events and all-cause mortality compared to the current standard therapy in these high-risk patients. The results were sustained, and also seen in the pre-specified subgroups (age, gender, race, presence of CVD, SBP tertiles and renal function).

Presented by: **Paul K Whelton**, AHA Scientific Sessions 2015, Orlando, FL

American Heart Association | American Stroke Association
life is why



*Recheck interval should be based on patient's risk of adverse outcomes.

This algorithm should not be used to counter the treating healthcare provider's best clinical judgment.

Abbreviations:
ACEI, angiotensin-converting-enzyme inhibitor; **ALDO ANTAG**, aldosterone antagonist; **ARB**, angiotensin II receptor blocker; **BB**, ß-blocker; **BP**, blood pressure; **CCB**, calcium channel blocker; **HTN**, hypertension; **MI**, myocardial infarction; **SBP**, systolic blood pressure; **TIA**, transient ischemic attack

Modification	Recommendation	Approximate SBP Reduction (Range)**
Reduce weight	Maintain normal body weight (body mass index 18.5–24.9 kg/m²)	5–20 mm Hg/10 kg
Adopt DASH* eating plan	Consume a diet rich in fruits, vegetables, and low-fat dairy products with a reduced content of saturated and total fat	8–14 mm Hg
Lower sodium intake†	a. Consume no more than 2,400 mg of sodium/day; b. Further reduction of sodium intake to 1,500 mg/day is desirable, since it is associated with even greater reduction in BP; and c. Reduce sodium intake by at least 1,000 mg/day since that will lower BP, even if the desired daily sodium intake is not achieved	2–8 mm Hg
Physical activity	Engage in regular aerobic physical activity such as brisk walking (at least 30 min per day, most days of the week)	4–9 mm Hg
Moderation of alcohol consumption	Limit consumption to no more than 2 drinks (e.g., 24 oz beer, 10 oz wine, or 3 oz 80-proof whiskey) per day in most men, and to no more than 1 drink per day in women and lighter weight persons	2–4 mm Hg

* DASH, dietary approaches to stop hypertension
** The effects of implementing these modifications are dose and time dependent, and could be greater for some individuals

Why should a clinic participate?

- We know what medicines work but systems aren't in place to drive control rates
- Algorithm and systems approach described in AHA's treatment algorithm are proven to increase control rates within a clinical setting
- Sites will received recognition from the AHA
- Help meet required performance metrics
- ***Improved health and care of their patients!***

http://targetbp.org/

Resources available to participants

http://targetbp.org/

Patient and participant resources on Website

- Podcasts
- Videos
- Fact Sheets
- Supporting Materials
- Patient Education Materials
- Patient Tracking Tools

TARGET: BP™ | American Heart Association. | AMA

TARGET: BP™ RECOGNITION PROGRAM
DATA COLLECTION WORKSHEET

The following data are needed for each healthcare organization seeking recognition by the Target: BP Recognition Program. This worksheet can be used to prepare for the formal data submission process, which begins the last week of March. **The deadline to submit data is July 31, 2017.**

INSTRUCTIONS

Enter your healthcare organization's adult (age 18-85) patient hypertension data for the previous calendar year.

These data are based on NQF #0018, Controlling High Blood Pressure.

a) What is the total adult patient population size for the healthcare organization? _____

Enter the number of patients in your healthcare organization who are age 18-85.

b) What is your total adult patient population that has an existing diagnosis of hypertension? _____

Hypertension is diagnosed if a patient has multiple visits with blood pressure ≥ 140/90.

Enter the number of patients in your healthcare organization who are age 18-85 and diagnosed with hypertension.

c) Of those who have been diagnosed with hypertension, what is the number of patients under control, <140/90? _____

*Enter the number of adult patients in your healthcare organization who have a diagnosis of hypertension **and** a blood pressure at their most recent office visit < 140/90.*

d) What is the total number of primary care physicians who provide patient care in your healthcare organization? _____

Hypertension Prevalence Estimator

This estimator calculates the expected percentage of patients in your healthcare organization who have hypertension.

Age Group (years)	Race-ethnicity	Number of Patients	
		Men	Woman
18-44	Non-Hispanic white		
18-44	Non-Hispanic black		
18-44	Hispanic		
18-44	Other		
18-44	Unknown		
45-64	Non-Hispanic white		
45-64	Non-Hispanic black		
45-64	Hispanic		
45-64	Other		
45-64	Unknown		
65-74	Non-Hispanic white		
65-74	Non-Hispanic black		
65-74	Hispanic		
65-74	Other		
65-74	Unknown		
75-85	Non-Hispanic white		
75-85	Non-Hispanic black		
75-85	Hispanic		
75-85	Other		
75-85	Unknown		

Note: *If the Race-Ethnicity information is unknown for any patients, this data should be accounted for in the "Unknown" Race-Ethnicity sub-category.*

Building Momentum

More than **50 healthcare systems or clinics** serving nearly **18 million people** have already joined *Target: BP…*

…and counting!

Enroll your Organization today!

Name of Health Care System (required) *	
Contact First Name (required) *	
Contact Last Name (required) *	
E-mail (required) *	ex: myname@example.com
U.S. Mailing Address 1 (required) *	
U.S. Mailing Address 2	
City (required) *	
State (required) *	
Zip Code (required) *	
What is the total patient population size for the health care system? (required) *	

Community Resources

5 Simple Steps to Control Your Blood Pressure

American Heart Association | American Stroke Association

High blood pressure can be fatal, so it's important to know your blood pressure reading and what you can do to keep things under control. The good news is, we have an easy new way to help.

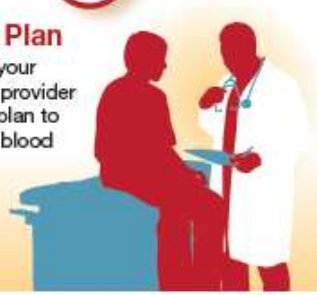
JUST FOLLOW THESE 5 SIMPLE STEPS recommended by blood pressure experts from the American Heart Association, the American College of Cardiology and the U.S. Centers for Disease Control and Prevention. For more information ▶

1 Know Your Numbers.

Most people diagnosed with high blood pressure want to stay below 140/90, but your healthcare provider can tell you your personal target blood pressure.

2 Make a Plan

Work with your healthcare provider to make a plan to lower your blood pressure.



3 Make a Few Lifestyle Changes.

In many cases this will be your doctor's first recommendation, likely in one of these areas:

- **Lose weight.** Strive for a body mass index between 18 and 25. For more information ▶
- **Eat healthier.** Eat fruit, veggies, low-fat dairy and lean protein, but lower your saturated and total fat. For more information ▶
- **Reduce sodium.** Stay under 1,500 mg a day, which is associated with the greatest reduction in blood pressure. For more information ▶
- **Get active.** Shoot for 40 minutes, 3-4 times a week. For more information ▶
- **Limit alcohol.** Drink no more than 1-2 drinks a day. (1 for most women, 2 for most men) For more information ▶

4 Keep Checking Your Blood Pressure at Home.

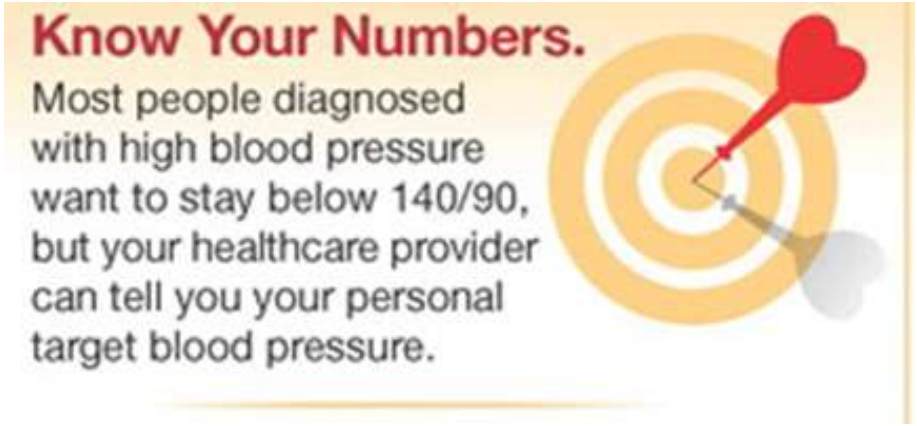
Whether you're at home, at a store or anywhere else where you can check your blood pressure, make a habit of checking it regularly, tracking your readings and sharing them with your healthcare provider.

5 Take Medication as Prescribed

Take medications exactly the way your healthcare provider prescribes them.

For more help lowering your blood pressure, visit **Heart.org/hbp**

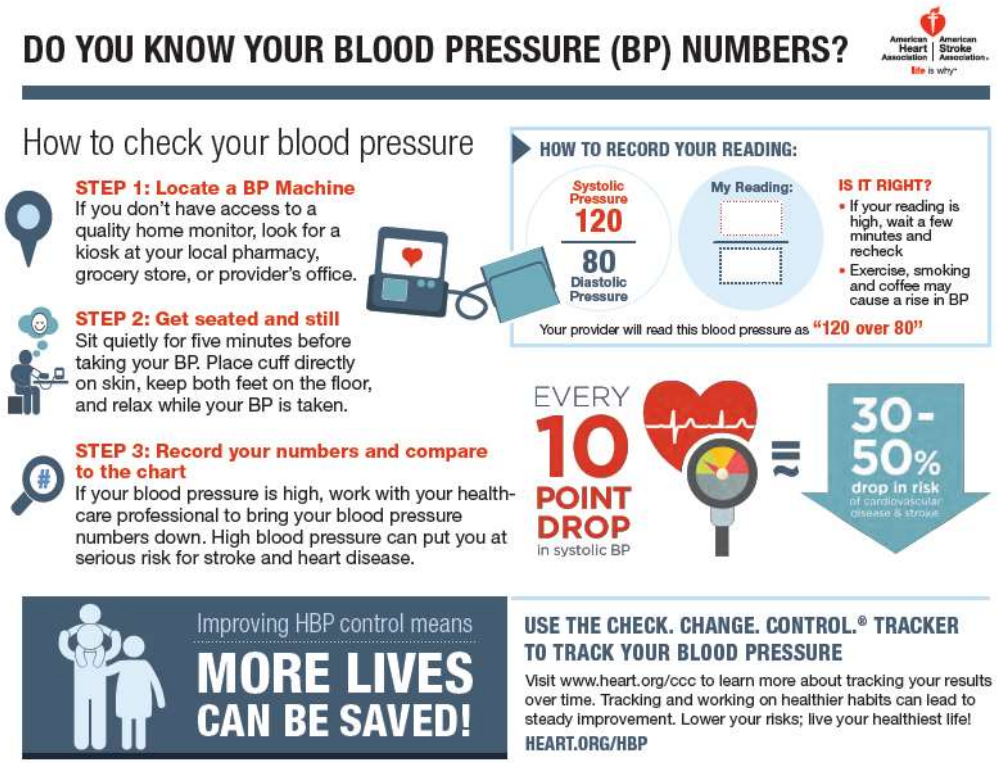
Check. Change. *Control.*



70-75 of Check. Change. Control. users lowered their blood pressure from the hypertensive range!

Register today at www.heart.org/ccc.
Use code **XXXXX**

Start taking steps to take control!



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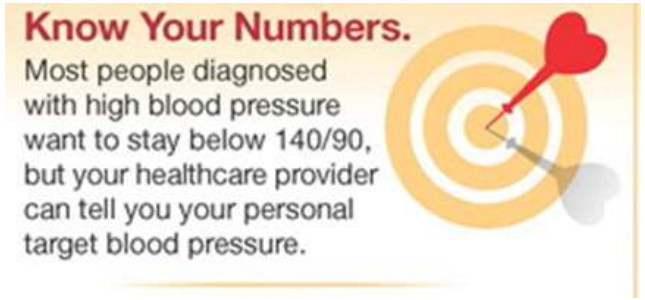
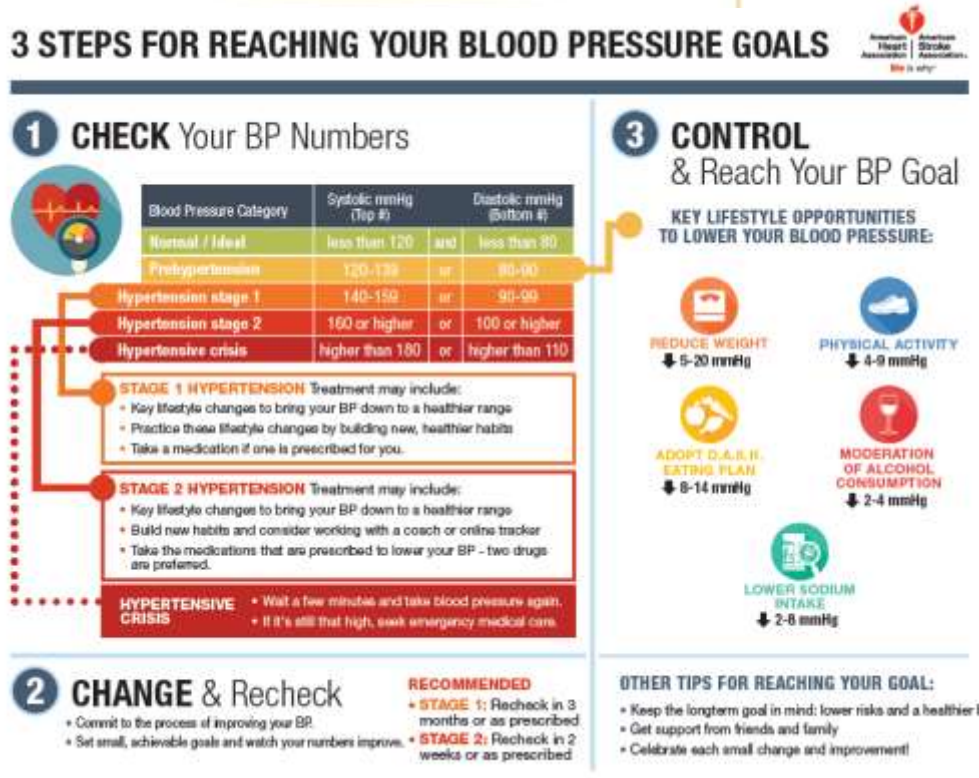
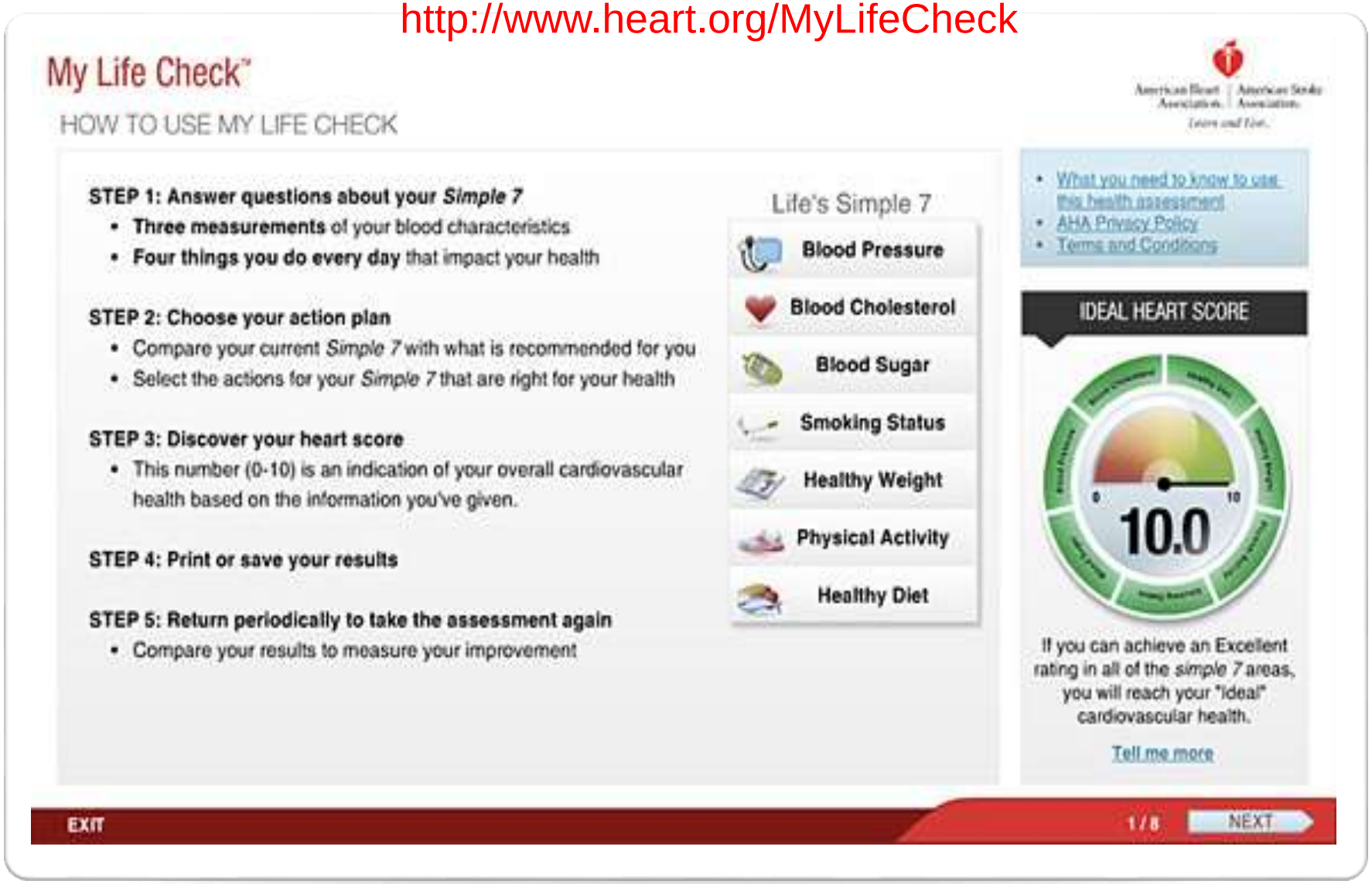




My Life Check

http://www.heart.org/MyLifeCheck

- **We've simplified healthy living –**
- **7 things to measure and track.**



Questions?

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Principles of the DASH Diet

Lynn Holum RD, LRD,CDE
Altru Health System

Disclosures:

- I have no conflicts of interest to report

Why is Blood Pressure a Problem?

- 1 in 3 adults (approximately 67 million Americans) has hypertension
- 1 in 3 adults has pre-hypertension
- Reducing average population systolic blood pressure by only 12-13 mmHg could reduce: stroke 37%, coronary heart disease 21%, deaths from CV disease 25% & deaths from all causes 13%
- About 47% of people with hypertension have the condition under control
- High blood pressure costs the US $51 billion per year

. Center for Disease Control & Prevention's Division for Heart Disease and Stroke Prevention

What Causes High Blood Pressure?

- Genetic factors
- Being overweight or obese
- High salt intake
- Narrowing or stiffening of the arteries
- Aging
- Stress
- Excess alcohol

Risk Factors for Developing High Blood Pressure

Modifiable Risk Factors

- Smoking tobacco
- Overweight or obese
- Alcohol in excess
- Level of physical activity
- Diet composition

Non-Modifiable Risk Factors

- Diabetes
- Family History
- Age
- Sex
- Race/ethnicity

Advice from the Academy of Nutrition and Dietetics

Hypertension: 2015 Executive Summary of Recommendations

Intervention	Recommendations	Rating
DASH Diet	The **RDN should counsel on a DASH dietary pattern plus reduced sodium intake for BP reduction in adults with HTN**. Research indicates that in adults with pre-hypertension and HTN, the DASH dietary pattern, compared with the typical American diet lowered SBP by 5 mm Hg to 6 mm Hg and DPB by 3 mm Hg.	Strong Imperative
DASH Diet & Weight Reduction	**For overweight or obese adults with HTN, the RDN should counsel on a calorie-controlled DASH dietary pattern for weight management and BP reduction.** Research indicates that the DASH diet with a sodium range of 1,500 mg to 2,400 mg reduced SBP by 2 mm Hg to 11 mm Hg and DBP by 0 mm Hg to 9 mm Hg in overweight or obese hypertensive adults, regardless of anti-hypertensive medications. DASH plus weight reduction resulted in greater reduction in SBP of 11 mm Hg to 16 mm Hg and DBP of 6 mm Hg to 10 mm Hg than weight reduction alone.	Strong Imperative
Physical Activity	The RDN should encourage adults with HTN to engage in regular aerobic activity to lower blood pressure. **Physical activity should be of moderate intensity to vigorous intensity 3-4 times per week for an average of 40 minutes per session**. Research indicates that among adult men and women at all blood pressure levels, including individuals with HTN, aerobic physical activity decreases SBP and DBP on average by 2 mm Hg to 5 mm Hg and 1 mm Hg to 4 mm Hg, respectively. Typical interventions shown to be effective for lowering BP include aerobic physical activity of, on average, at least 12 weeks duration, with 3-4 sessions per week, lasting on average 40 minutes per session and involving moderate-intensity to vigorous-intensity physical activity.	Strong Imperative

2016 Academy of Nutrition & Dietetics, Evidence Analysis Library

DASH DIET

D: ietary

A: pproaches to

S: top

H: ypertension

Inception of the DASH

- NHLBI: A Clinical Trial of the Effects of Dietary Patterns on Blood Pressure
- Study results were published in 1997
- Results concluded that a diet rich in fruits, vegetables and low-fat dairy foods, along with reduced intake of saturated and total fat can substantially lower blood pressure.
- Investigators planned the DASH diet to be fully compatible with dietary recommendations for reducing risk of CVD, osteoporosis and cancer.

What is the DASH Diet?

- Dietary Approaches to Stop Hypertension - used as a non-pharmacological option for the prevention and control of high blood pressure
- Diet focuses on reducing intake of nutrients that may raise blood pressure - sodium, saturated and trans fat
- Focuses on intake of nutrients that may help fight hypertension – calcium, potassium, fiber, magnesium
- Adapted from the Mediterranean Diet
- Can lower blood pressure as well as medications, for some people
- Weight loss is side affect, but not main purpose of diet

The DASH Eating Plan
(based on 2000 calories daily)

Food Group	Daily Servings (except as noted)	Serving Sizes
Grains & grain products	6-8	1 slice bread 1 cup ready to eat cereal ½ cup cooked rice, pasta or cereal
Vegetables	4-5	1 cup raw leafy vegetable ½ cup cooked vegetable 6 ounces vegetable juice
Fruits	4-5	1 medium fruit ¼ cup dried fruit ½ cup fresh, frozen or canned fruit 6 ounces fruit juice
Low or fat-free dairy foods	2-3	8 ounces milk 1 cup yogurt 1 ½ ounces cheese
Lean meats, poultry and fish	2 or fewer	3 ounces cooked lean meat, skinless poultry, or fish
Nuts, seeds and dry beans	4-5 per week	1/3 cup or 1 ½ ounces nuts 1 tbsp or ½ ounce seeds ½ cup cooked dry beans
Fat and oils	2-3	1 tsp soft margarine 1 tbsp low-fat margarine 2 tbsp light salad dressing 1 tsp vegetable oil
Sweets	5 or less per week	1 tbsp sugar 1 tbsp jelly or jam 8 ounces lemonade ½ ounce jelly beans

Nutritional Impacts

- High in potassium, magnesium and fiber (from vegetables, nuts and legumes)
- High in calcium, protein and vitamin D (from dairy products)
- Seafood, poultry and lean meat consumed in the diet are excellent sources of B vitamins, iron and zinc.

Daily DASH Nutrient Goals

Nutrient	Goal
Total fat	27% calories
Saturated fat	6% calories
Protein	18% calories
Carbohydrate	55% calories
Cholesterol	150 mg
Sodium	1500-2300 mg
Potassium	4700 mg
Calcium	1250 mg

Based on 2000 calorie diet

How Much Salt?

- The Standard DASH diet recommends consuming no more than 2300 mg per day to achieve a reduction in blood pressure.

- If no significant blood pressure reduction occurs, reduce sodium intake to 1500 mg per day.

So, how much salt is 2300 mg?

1 tsp = 2300 mg sodium

THE DASH DIET

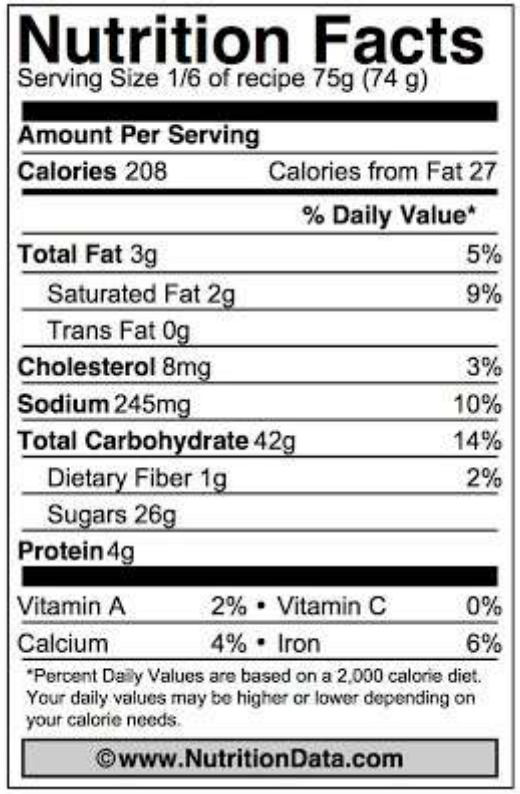
Helping patients put it into practice

Tips to Reduce Salt & Sodium

- Buy fresh, plain frozen, or canned "with no salt added" vegetables.
- Use fresh poultry, fish and lean meat, rather than canned or processed types.
- Use herbs, spices and salt-free seasonings blends in cooking and at the table.
  - When available, buy low or reduced-sodium or no-salt-added versions
  - Choose ready to eat breakfast cereals that are low in sodium
- Cook rice, cereal and pasta without added salt. Cut back on instant or flavored rice, pasta and cereal mixes.
- Choose "convenience" foods that are low in sodium. Cut back on frozen dinners, packaged mixes, canned soups and salad dressings.
- Rinse canned foods to reduce sodium content

Label Reading with DASH Diet

- Many consumers don't understand how to use Nutrition Facts panel.
- AND recommends foods with 140 mg of sodium or less per serving while foods with 300 mg or more may not fit into low sodium meal plan.
- Easy to use tip of choose foods with <5% Daily Value for sodium



Nutrition Facts

Serving Size 1/6 of recipe 75g (74 g)

Amount Per Serving

Calories 208 — Calories from Fat 27

	% Daily Value*
Total Fat 3g	5%
Saturated Fat 2g	9%
Trans Fat 0g	
Cholesterol 8mg	3%
Sodium 245mg	10%
Total Carbohydrate 42g	14%
Dietary Fiber 1g	2%
Sugars 26g	
Protein 4g	

Vitamin A	2%	• Vitamin C	0%
Calcium	4%	• Iron	6%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

©www.NutritionData.com

A DAY WITH DASH

(based on a 2,000 calorie diet)

- Breakfast:

1 whole-wheat bagel
2 Tbsp peanut butter (no salt added)
1 medium orange
1 cup skim milk
Decaffeinated coffee

- Lunch

Spinach salad made with:
4 cups fresh spinach leaves
1 sliced pear
½ cup canned mandarin orange sections
1/3 cup slivered almonds
2 Tbsp red wine vinaigrette
12 reduced-sodium wheat crackers
1 cup skim milk

- Evening meal:

3 oz herb-crusted baked cod
½ cup brown rice pilaf with vegetables
½ cup fresh green beans, steamed
1 small sourdough roll
2 tsp olive oil
1 cup fresh berries
1 cup iced tea

- Snacks:

1 cup fat-free yogurt
4 vanilla wafers

A Day with DASH

Nutritional Analysis

- Calories: 2015
- Fat: 70 g
- Saturated Fat: 10 g
- Trans Fat: 0 g
- Sodium:1607 mg
- Protein: 90 g

DASH Servings

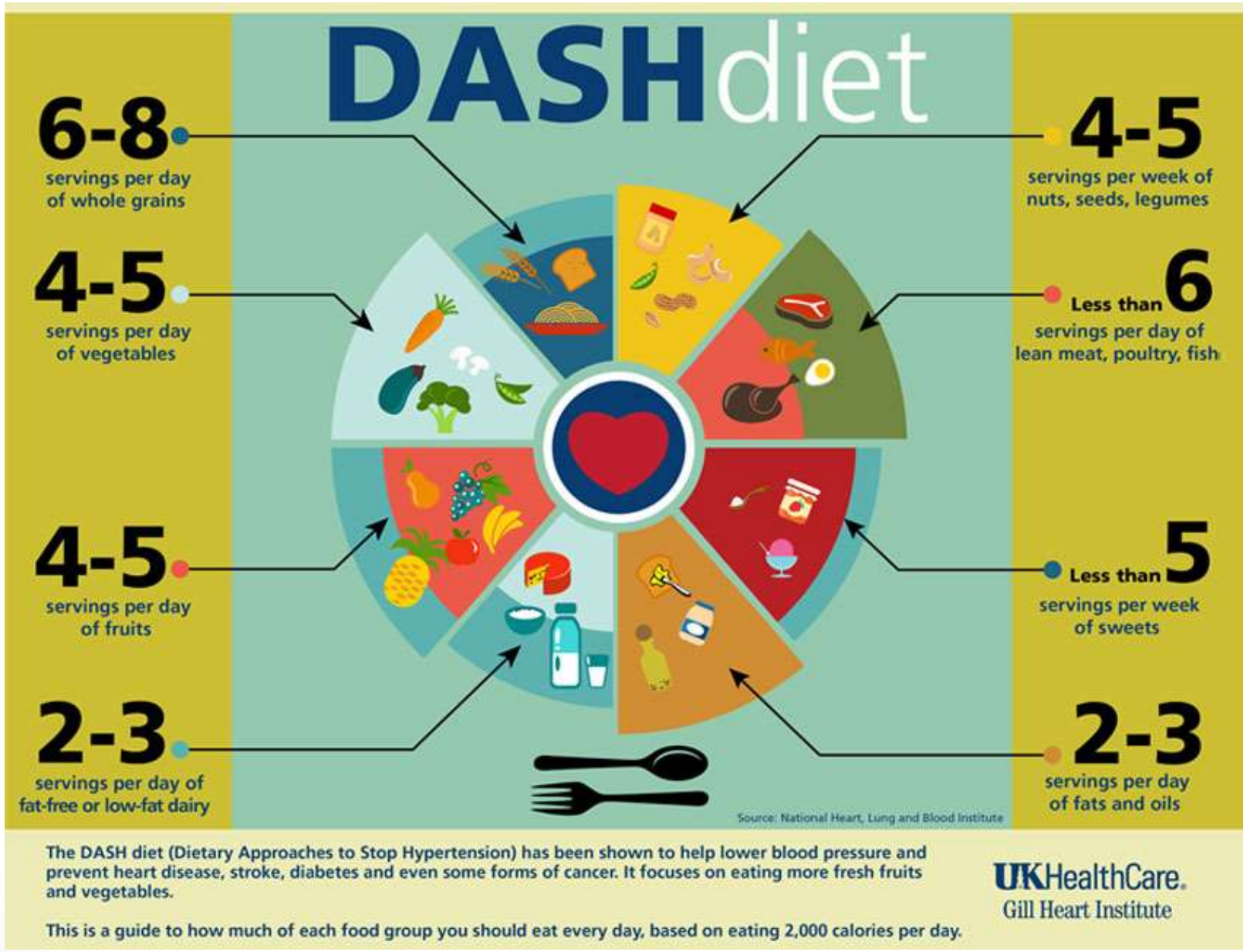
- Grains: 7
- Vegetables: 5
- Fruits: 4
- Dairy foods: 3
- Meat, poultry & fish: 3
- Nuts, seeds & dry beans: 2
- Fats & Oils: 3
- Sweets: 1

www.mayoclinic.org

Factors RDN Considers with Each Patient

- Cooking habits
- Culture
- Cognitive function
- Other health issues that may require dietary intervention
- Shopping/cooking budget
- Habits/frequency for eating out

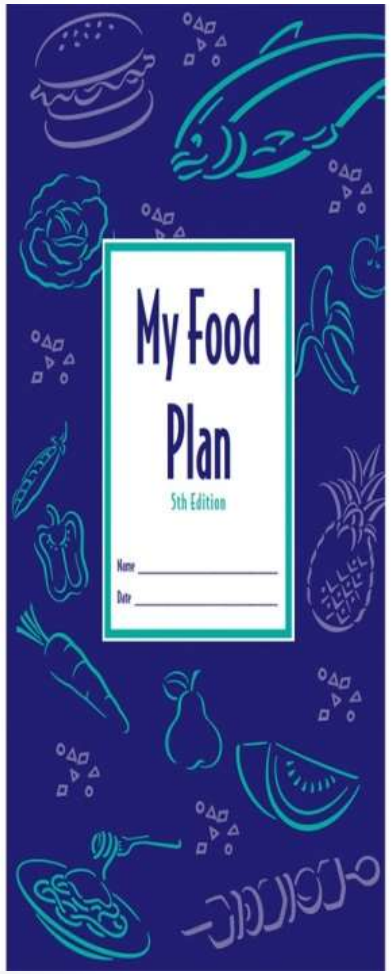
Visual Approach – DASH



The Plate Method to teach DASH

- Half plate as fruits/veggies, emphasize whole grains, low fat protein and low fat dairy
- Works well for “visual learner”
- Works well for low literacy clients

My Food Plan to teach DASH



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1) 1/2 cup Egg Beaters With your choice of vegie's added. 2) Slices of Turkey Bacon 3) 2 Slices of whole wheat bread 4) 1 cup cantaloupe	1) 2 low carb Wheat bread French toast 2) 1 tbls. Margarine 3) 1 cup strawberries 4) 3 slices bacon	1) 2 Whole wheat slices of toast 2) 2 tbls. Peanut butter (for toast) 3) 1 small banana	1) 2 Whole wheat slices of toast 2) 1 tbls margarine 3) low or reduced sugar jam 4) 8 oz glass 2% milk 5) 1 sausage link	1) 1 cup cooked oatmeal 2) raisins, dark, seedless 2 tbls 3) 1 cup 2% milk 4) 3 slices bacon	1) 1/2 cup egg beaters with choice of vegie's 2) 1/4 cup salsa 3) whole wheat muffin 4) 1 tbls margarine 5) 1/2 cup orange juice 6) 1 sausage link	1) 1 cup Cheerios 2) 1/2 cup skim milk 3) 8 halves of dried Apricots 4) 6 almonds 5) 1 slice whole wheat toast 6) 1 tbls margarine
1) tossed green salad with 2 tbls of low fat dressing 2) 1 hard boiled egg 3) 8 Saltines 4) 1 1/2 cups of strawberries 5) 1 cup 2% milk	1) 2 slices whole wheat bread 2) 4 oz roast left over from Sunday for roast beef sandwhich 3) 1 small apple with peel	1) 1 Pita bread whole wheat 2) 1 oz Roasted low sodium ham 3) 1 oz reduce fat Monterey Jack cheese 5) Tomato, cucumber, 6) 1/4 cup	1) grilled cheese sandwich with 2 slices whole wheat bread. 1 slice skim milk American cheese. using 1 tbls margarine 2) 1/2 cup tomato soup with water added & fresh veg.	1) 1/2 low fat cottage cheese 2) Whole wheat crackers 3) 17 grapes, seedless, small 4) 3 slices of tomato	1) 1/2 cup tuna 2) 2 slices whole wheat bread 3) 2 slices of tomato 4) small apple with peel	1) 2 oz of chicken 2) 2 slices whole wheat bread 3) lettuce, tomato 4) Hard boiled egg 5) 1 orange
1) 4 oz of Roast 2) 1 cup Carrots 3) 1/2 potato plain	1) Balsamic Roast Chicken 2) 1 cup mashed potatoes 3) Tossed green salad with 2 tbls low fat Italian dressing	1) Roasted Salmon Fillet 2) Avocado Bean Salad 3) 1 cup 2% milk	1) Pork Chops 2) Wild Rice 3) Steamed Broccoli	1) Hearty Beef Stew 2) Vegie of choice steamed 3) Pillsbury Grands Jr Buttermilk Biscuits	1) Slow Cooker Enchiladas	1) Steak 2) vegie of choice, steamed 3) Baked Potatoes

Heart Health & DASH

Mediterranean Diet to teach DASH

Beyond DASH Eating Plan

- Maintain a healthy weight
- Be physically active (at least 150 minutes per week)
- Limit alcohol consumption
- Reduce sodium intake
- Don’t smoke tobacco
- Take blood pressure medication if needed

Dining Out with DASH

- Tips for incorporating DASH with restaurant eating
  - Cut back on salt – limit condiments, don't add salt, request food be prepared without salt, watch out for words like pickled, cured, smoked. Some menus indicate low-sodium choices will a symbol.
  - DASH promotes healthy fat choices – trim visible fat from meat; keep meat portion to size of deck of cards; looked for words like grilled, poached, broiled; get in fruit and veggies
  - Remember DASH principles from beverage to dessert choices. Consider whole grain bread, fruit for dessert, oil based dressing for salad, keep alcohol in moderation
  - As a minimum keep portions in check

Starting/Transitioning to DASH

- Add a serving of vegetables to two meals a day
- Choose whole grains when possible
- Include three servings of fat free/low-fat dairy a day
- Limit lean meats to 6 ounces a day
- Two or more meatless meals a week
- Start reading nutrition facts

In Conclusion

- DASH diet is an effective approach to lifestyle modification for management of hypertension.
- DASH diet concepts can also be applied to help manage other chronic health issues – obesity, CVD etc.
- Lifestyle changes for DASH diet should be tailored to fit the patient - LRD is a key member of the health care team for management of hypertension.

Resources

- www.nhlbi.nih.gov/health
- www.americanheart.org
- www.eatright.org
- www.choosemyplate.gov

Questions?

Blood Pressure Protocol

Patricia Spier, RN-BC, PCMH-CCE, Barb Rice, RN-BC
Blue Cross Blue Shield of North Dakota

Robin Iszler, RN
Administrator, Central Valley Health District

BP Protocol Training

Hypertension Summit

March 16, 2017

Disclosure Statement

Sponsorship or commercial support

- No commercial support or sponsorship is being provided in support of this presentation.

Conflict of Interest

- We do not have any conflicts of interest related to this presentation

Objectives

- Discuss North Dakota work and collaborations in management of hypertension
- Identify key learnings from state hypertension education
- Identify some lifestyle basics for hypertension management
- Review alternate sites for taking blood pressure and discuss proper sizing of BP cuff
- Review resources available

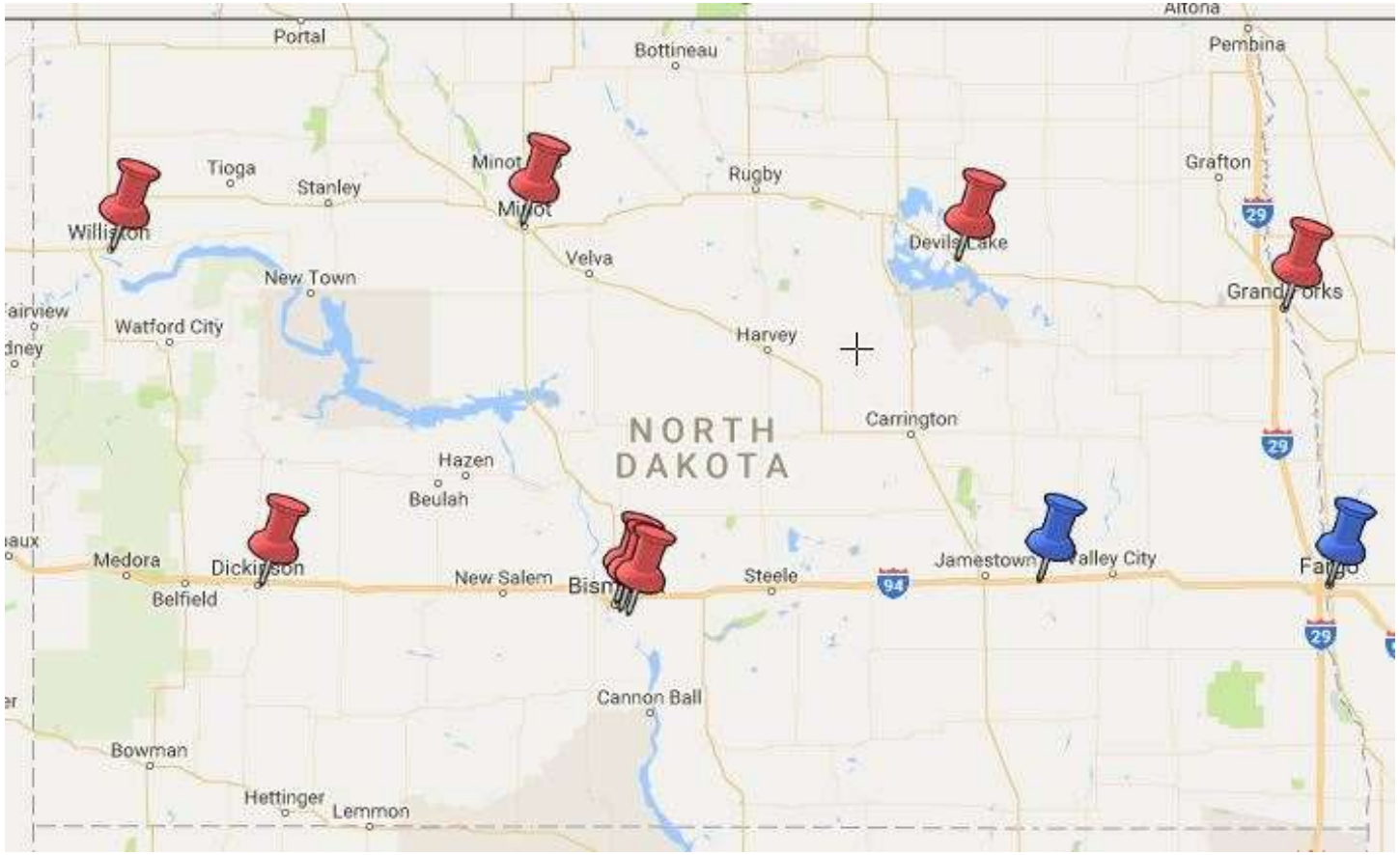
BCBSND partnership

- BCBSND partnership started with the MediQHome program
- MediQHome quality program was designed for primary care in 2009. Incentive payments paid to assist with resources needed and time spent in care coordination outside of office visits.
- Program redesign to BlueAlliance in July 2016
- Maintains focus on quality outcomes and payment to support care management
- Hypertension tool kit designed for participating clinics and used as training tool within this program
- Resource made available in conjunction with trainings

Statewide Hypertension training

- Wide variety of attendees
- Six regions and dental conference
- Basic review but found to be effective
- Accuracy in measurement primary focus

Trainings so far



Training evaluations

- Over 300 people attended
- 109 out of 116 comments on plans to change practice
- Comments made during sessions related to BP training variances
- Attendees identified workflow changes they were going to make
- Many discussions regarding alternate sites for taking BP
- Comments on not seeing this done at their own appointments where BP was taken

Key take aways from evaluations

- Importance of accurate-size BP cuff
- Impact of inaccurate technique
- Taking pulse before checking BP
- Manual vs. automatic cuff use
- Alternate locations for taking BP
- Adequate equipment needs
- Proper positioning

Factors affecting blood pressure

Education session highlighted key areas that can drastically alter accuracy in BP measurement

- Taking blood pressure over clothing
  - This may alter BP by 5/50 mmHG in accuracy
- Talking or being talked to while taking BP
  - This can alter BP by 10/10mmHG
- Cuff size and having varied-size cuffs
  - BP cuff too small 10/2-8mmHG elevate
  - BP cuff too large may give false low readings

Lifestyle Modification

Weight Reduction	Reduction in Dietary Sodium	DASH Diet	Physical Activity	Alcohol	Other
• Lowering weight by 5% can reduce BP 5-20 mmHG	• Lowering sodium to 1500-2400 mg daily can reduce BP by 2-8 mmHG	• Increasing fruits and vegetables and reducing saturated fats can reduce BP by 8-14 mmHG	• Regular aerobic activity for 30 minutes per day can reduce BP by 4-9 mmHG • Can be broken down to 10 minute intervals	• Limit alcohol use to 2 drinks per day for men and 1 drink for women	• Emotions, stress, caffeine intake, drug (both prescription and non prescription) and family history all contribute to BP

Blood pressure sites

- Upper arm
  - For over 100 years, upper arm has been considered the gold standard
  - Most common site
  - Recommended by American Heart Association and the European Society of Hypertension
- Forearm
  - May be used if unable to get accurate upper-arm reading
  - Suitable for patients with obese, conical-shaped arms
- Thigh
  - Typically used when upper arms are contradicted
  - When taken accurately, normally the systolic BP in legs run approximately 10-20% higher than upper arm

Blood pressure sites (continued)

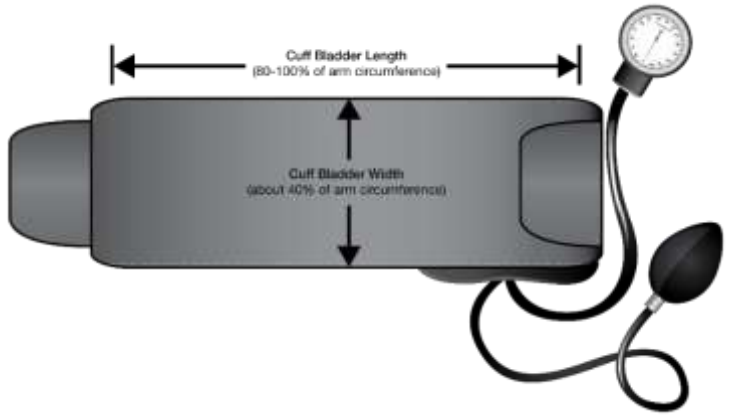
- Wrist
  - Has become popular site for home self-BP monitoring
  - Extremely sensitive to body positioning for accuracy
  - Usually higher than upper-arm readings
- Finger
  - Never the recommended site at this time due to inaccuracies

Blood pressure cuff sizing

The most frequent error in measuring BP is miscuffing. Undercuffing large arms accounts for approximately 84% of miscuffings.

Recommendations for proper cuff size for accuracy

- BP bladder cuff should encircle 80% of the patient's arm circumference
- The width of the cuff should be 40% of the width of the arm



Resources and Partnerships

- North Dakota Department of Health resources
- Statewide protocol
- Hypertension tool kits from BCBSND
- Future trainings - two more trainings on eastern side of state. Contact Tiffany, Barb or Pat if you are interested in having us come to you

References

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- “The Importance of Accurate Blood Pressure Measurement,” Joel Handler, M.D., The Permanente Journal, summer 2009
- “Ten Factors That Can Temporarily Elevate Blood Pressure Readings,” Stephanie Monk, biomedical engineering B.S., M.S., SunTech Medical, 2010

Contact information

Questions?

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Pat Spier: patricia.spier@bcbsnd.com

Blood Pressure Protocol

Patricia Spier, RN-BC, PCMH-CCE, Barb Rice, RN-BC
Blue Cross Blue Shield of North Dakota

Robin Iszler, RN
Administrator, Central Valley Health District

Public Health
Prevent. Promote. Protect.

Central Valley Health District

BP Improvement
Local Public Health

Robin Iszler, RN
Unit Administrator

Disclosures

Commercial Support – None

Conflicts of Interest – None

Plan Do Study Act

By December 31, 2014 increase and review the number of best practices for blood pressure monitoring at Central Valley Health.

- Evaluate equipment
- Provide Staff Training on best practice
- Revise local Policy
- Conducted community clinics and note environment and techniques (gather data)
- Adjust environment and techniques at community clinics.
- Review data
- Adjust and update current policy and review best practice literature.

Why is this Important?

- Hypertension increases one's risk of heart disease, stroke, kidney disease, and early death.
- Hypertension caused or contributed to nearly 1,000 deaths per day in 2009 (Million Hearts).
- 1 in 3 US adults have high blood pressure and only half have their condition under control.
- Inaccurate Blood pressure measurement can lead to misdiagnosis of hypertension.

The Cost of Making Small Measurement Errors

Small errors may result in either:

- undiagnosed cases of hypertension (undertreated)
- misdiagnosed cases of hypertension in patients who are really prehypertensive (overtreatment)

BP Classification

Normal BP	Systolic: < 120 mmHg Diastolic: < 80 mmHg
Prehypertension (at risk)	Systolic: 120-139 mmHg Diastolic: 80 –89 mmHg
Hypertension	Systolic: 140 mmHg or > Diastolic: 90 mm hg or >

BP Goals for People with Diabetes*: 140/80. Lower systolic targets, such as 130 mmHg, may be appropriate for certain individuals, such as younger patients, if it can be achieved without undue treatment burden.

*Reference:
Standards of Medical Care in Diabetes – 2014
Diabetes Care Volume 37, Supplement 1, January 2014

Revisions to Policy

- Complete client record and appropriate documentation per policy.
- Ask about factors affecting blood pressure (coffee, exercise, anxiety, smoke in last 30 minutes)
- Wait 5 minutes prior to reading blood pressure.
- Midpoint of cuff at heart level to bare arm whenever possible.
- Determine appropriate blood pressure cuff size and assure proper placement. Lower edge should be at least 1 inch above bend of elbow.
- Client will be requested to sit with feet flat on floor and forearm supported at heart level on a flat surface.
- Using bell of stethoscope, when possible, place stethoscope on brachial pulse.
- Deflate cuff slowly 2 to 3 mmHg/sec.
- Deflate completely before re-inflation.
- See attached blood pressure reading guidelines for age appropriate readings.

Revisions to Policy Cont.

- If initial reading is elevated, have the client rest for 1 minute and recheck blood pressure.
- If second blood pressure reading remains elevated, client will be requested to return for blood pressure recheck within one week or may be referred to client's primary medical provider for evaluation.
- After 2 consecutive elevated blood pressures within one week or at subsequent visits, client will be referred to the client's primary medical provider for evaluation. Clients who are known diabetics refer to their medical provider following one elevated blood pressure reading.
- Offer a blood pressure log.
- General education on blood pressure control:
  - Weight loss and exercise
  - Decrease Alcohol and avoid stimulants
  - Reduce Stress
  - Reduce sodium intake
  - Smoking cessation

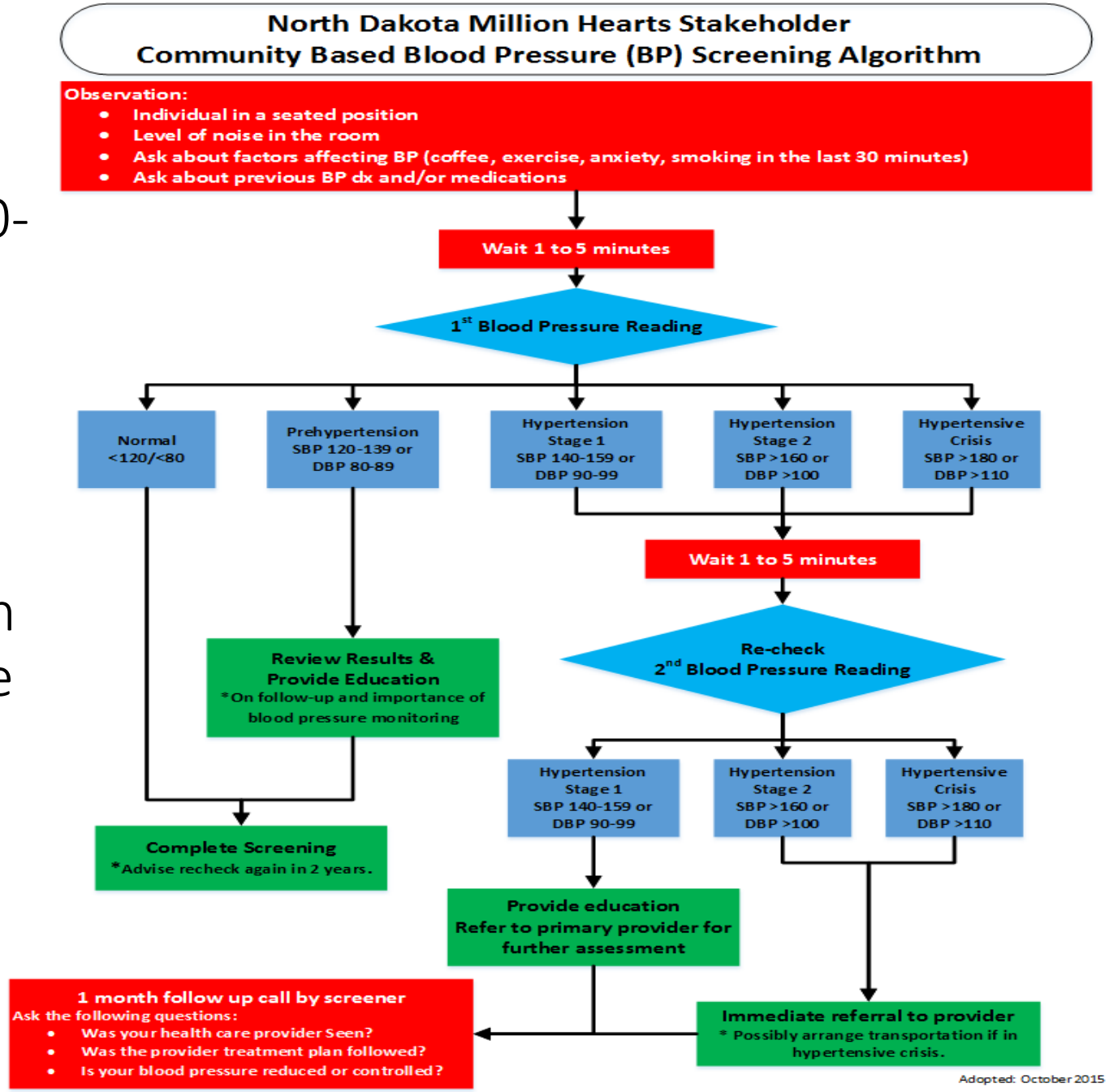
Statewide Algorithm

If the first BP reading is 140-150/90-99:

1. Wait 1-5 minutes
2. Recheck.

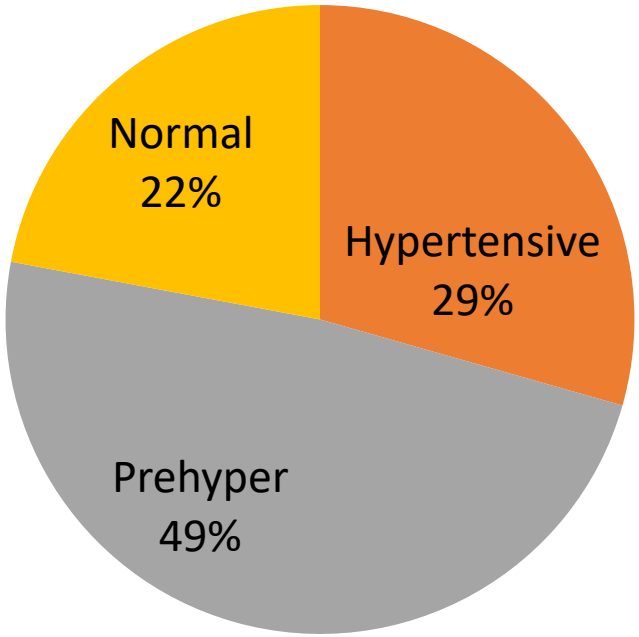
If still elevated:

- 140-150/90-99: Education and referral to primary care
- Greater than 160/100: Immediate referral to provider



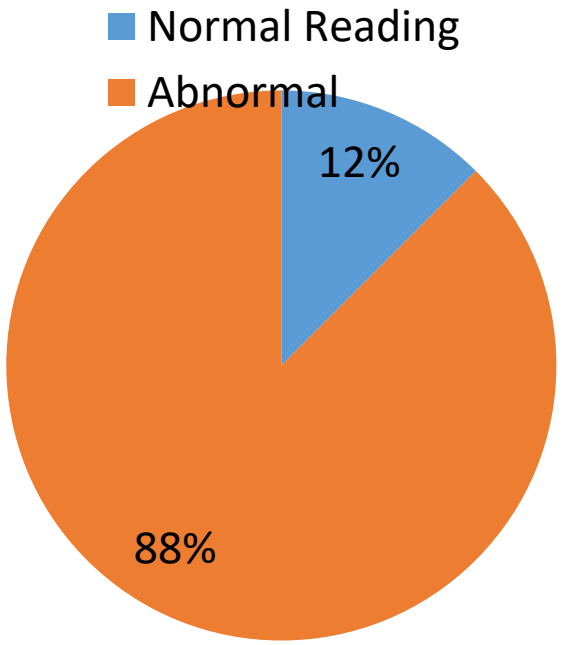
Gather Data – First Screening

68 BP completed community screening
November 2014

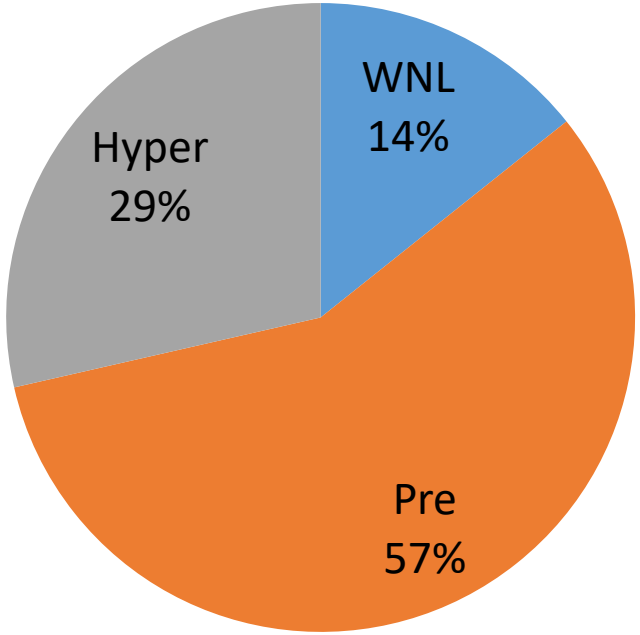


Recheck blood pressures

Reckecked Blood Pressures First Reading

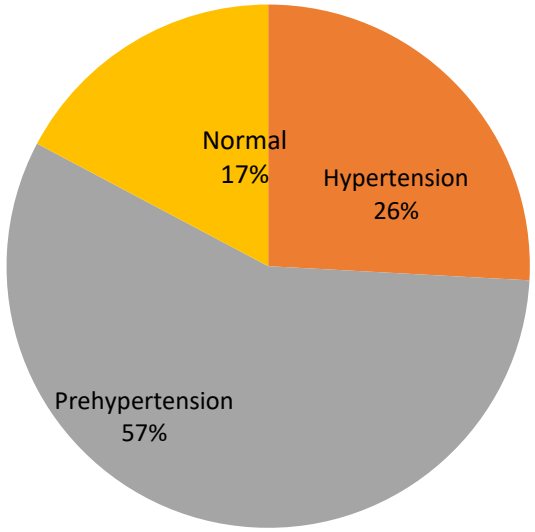


Rechecked Blood Pressure Second Reading

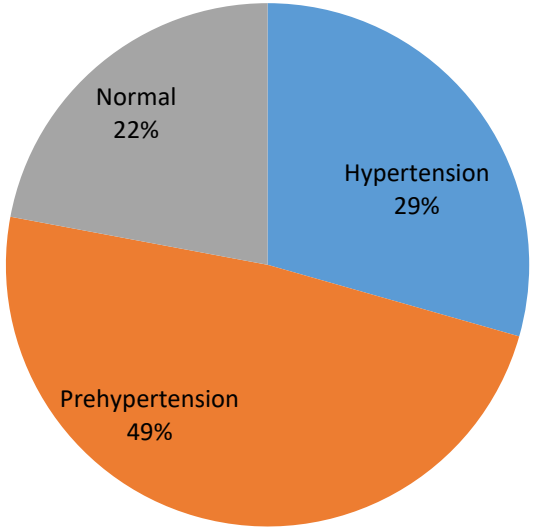


Gather Data – community screenings

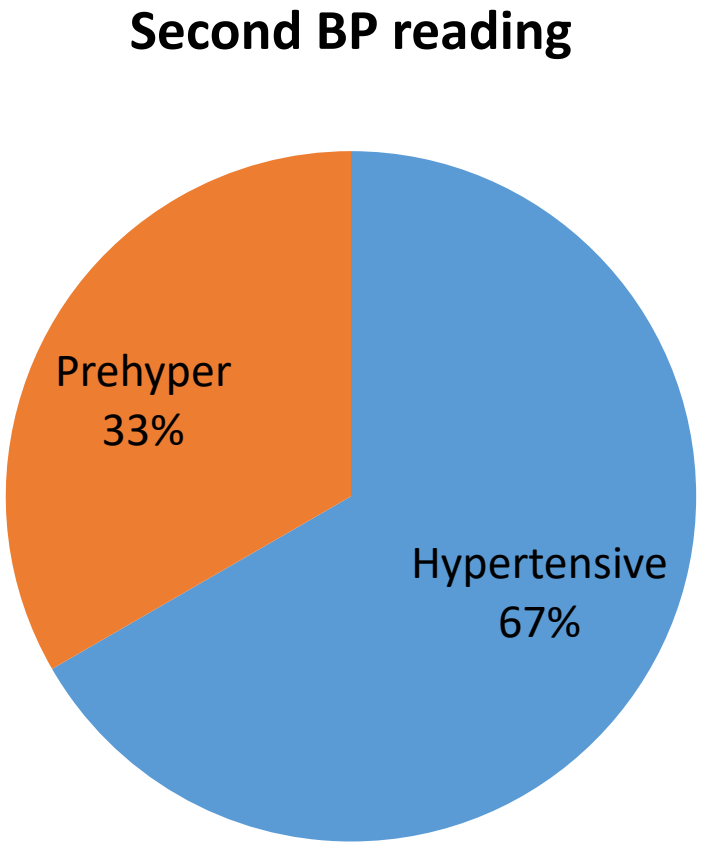
Community Screening
58 BP Screenings
December 2014



Community Screening
68 BP Screenings
November 2014



Rechecked Blood Pressure



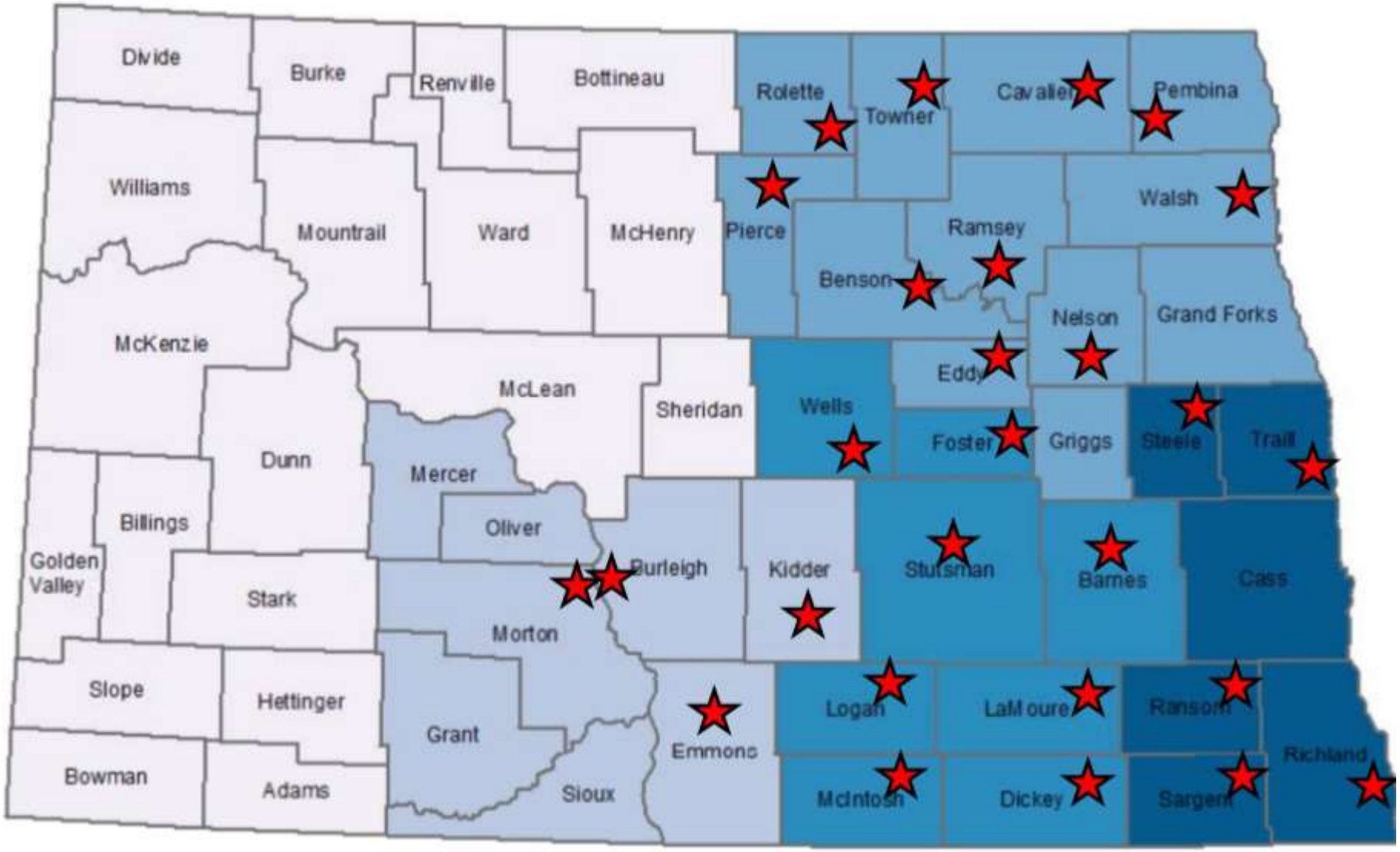
Conclusions

- Increased confidence level of nurse improved by monitoring technique, changing practice, equipment, training and policy changes.
- Modified our technique in the field – quiet setting
- Target those needing provider referral vs. those who could benefit from lifestyle modifications – potential health care savings.
- Workplace or community screenings can identify those with elevated blood pressures.

Sustaining these changes

- Where are we now as an agency?
  - Policy changes are in place to help ensure correct blood pressure monitoring at our agency.
  - We offer screenings in our office daily and we offer free screenings on Friday.
    - In 2016 we did 1240 blood pressures for clients
  - We train new staff in the correct procedures for blood pressure monitoring
  - We are more confident in our referrals back to local health care providers
- What can you do?
  - Look at facility policy
  - Train staff - yearly

Follow-Up BP Checks



Questions?

2017 Hypertension Summit

BREAK TIME!

Snacks, Networking and Self-Care

NORTH DAKOTA DEPARTMENT of HEALTH

Essentia Health
Here with you

2nd Annual Hypertension Summit
March 16th, 2017
Fargo, North Dakota

Hypertension Overview

Vincent J. Canzanello, M.D.
Consultant, Division of Nephrology and Hypertension
Professor or Medicine
College of Medicine, Mayo Clinic

DISCLOSURES

Relevant Financial Relationship(s)

None

Off Label Usage

None

Learning Objectives

- Understand potential new blood pressure goals that may change clinical practice
- Understand the concepts of “white coat” and “masked” hypertension
- An initial approach to treatment of the patient with hypertension
- Approach to the patient who does not reach his/her blood pressure goal despite treatment

Potential new blood pressure goals that may change clinical practice

Blood Pressure Classification

Category	Systolic mm Hg		Diastolic mm Hg
Normal	<120	and	<80
Prehypertension	120-139	or	80-89
Hypertension			
Stage 1	140-159	or	90-99
Stage 2	≥160	or	≥100

High Blood Pressure

- Prevalence: 58 million in United States
  - 62% of cerebrovascular disease
  - 49% of ischemic heart disease
  - Most important attributable risk for mortality
  - Second most common cause of ESRD

Benefits of Treating HTN

	Reduction (%)
Stroke incidence	35-45
Myocardial Infarction	20-25
Heart Failure	50

Benefits of Treating HTN

You're never too old

Treatment of Hypertension in Patients 80 Years of Age or Older

Nigel S. Beckett, M.B., Ch.B., Ruth Peters, Ph.D., Astrid E. Fletcher, Ph.D., Jan A. Staessen, M.D., Ph.D., Lisheng Liu, M.D., Dan Dumitrascu, M.D., Vassil Stoyanovsky, M.D., Riitta L. Antikainen, M.D., Ph.D., Yuri Nikitin, M.D., Craig Anderson, M.D., Ph.D., Alli Belhani, M.D., Françoise Forette, M.D., Chakravarthi Rajkumar, M.D., Ph.D., Lutgarde Thijs, M.Sc., Winston Banya, M.Sc., and Christopher J. Bulpitt, M.D., for the HYVET Study Group*

ABSTRACT

BACKGROUND

Whether the treatment of patients with hypertension who are 80 years of age or older is beneficial is unclear. It has been suggested that antihypertensive therapy may reduce the risk of stroke, despite possibly increasing the risk of death.

METHODS

We randomly assigned 3845 patients from Europe, China, Australasia, and Tunisia who were 80 years of age or older and had a sustained systolic blood pressure of 160 mm Hg or more to receive either the diuretic indapamide (sustained release, 1.5 mg) or matching placebo. The angiotensin-converting–enzyme inhibitor perindopril (2 or 4 mg), or matching placebo, was added if necessary to achieve the target blood pressure of 150/80 mm Hg. The primary end point was fatal or nonfatal stroke.

RESULTS

The active-treatment group (1933 patients) and the placebo group (1912 patients) were well matched (mean age, 83.6 years; mean blood pressure while sitting, 173.0/90.8 mm Hg); 11.8% had a history of cardiovascular disease. Median follow-up was 1.8 years. At 2 years, the mean blood pressure while sitting was 15.0/6.1 mm Hg lower in the active-treatment group than in the placebo group. In an intention-to-treat analysis, active treatment was associated with a 30% reduction in the rate of fatal or nonfatal stroke (95% confidence interval [CI], −1 to 51; P=0.06), a 39% reduction in the rate of death from stroke (95% CI, 1 to 62; P=0.05), a 21% reduction in the rate of death from any cause (95% CI, 4 to 35; P=0.02), a 23% reduction in the rate of death from cardiovascular causes (95% CI, −1 to 40; P=0.06), and a 64% reduction in the rate of heart failure (95% CI, 42 to 78; P<0.001). Fewer serious adverse events were reported in the active-treatment group (358, vs. 448 in the placebo group; P=0.001).

CONCLUSIONS

The results provide evidence that antihypertensive treatment with indapamide (sustained release), with or without perindopril, in persons 80 years of age or older is beneficial. (ClinicalTrials.gov number, NCT00122811.)

From Imperial College London (N.S.B., R.P., R.L.A., W.B., C.J.B.) and the London School of Hygiene and Tropical Medicine (A.E.F.) — both in London; the University of Leuven, Leuven, Belgium (J.A.S., L.T.); the Beijing Hypertension League Institute, Beijing (L.L.); Spitalul Judetean Cluj, Clinica Medicală 2, Cluj, Romania (D.D.); the National Transport Multi-Profile Hospital, Sofia, Bulgaria (V.S.); the University of Oulu, Oulu, Finland (R.L.A.); the State Scientific Research Institute of Internal Medicine, Novosibirsk, Russia (Y.N.); the George Institute for International Health, Sydney (C.A.); L'Etablissement Public de Santé Charles Nicolle, Service de Cardiologie, Tunis, Tunisia (A.B.); Hôpital Broca, University Paris V, Paris (F.F.); and the Brighton and Sussex Medical School, Brighton, United Kingdom (C.R.). Address reprint requests to Dr. Beckett at Care of the Elderly, Division of Medicine, Imperial College London, Du Cane Rd., London W12 ONN, United Kingdom.

*The committee members and investigators for the Hypertension in the Very Elderly Trial (HYVET) are listed in the Appendix.

This article (10.1056/NEJMoa0801369) was published at www.nejm.org on March 31, 2008.

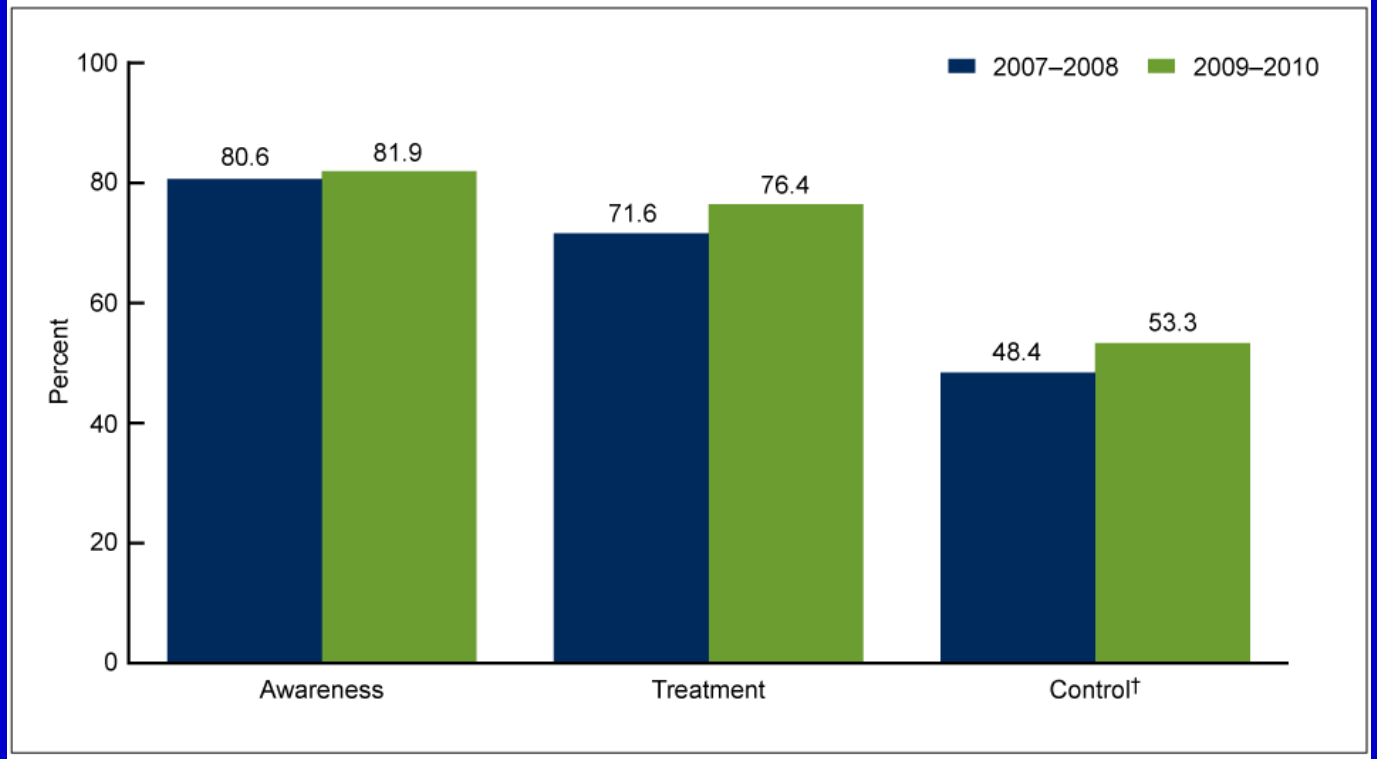
N Engl J Med 2008;358:1887-98.

JNC 8
New/key recommendations
(2014)

- In patients < 60 years
  - Initiate Rx at BP 140/90 or higher
  - Goal BP < 140/90 for all, regardless of presence/absence of diabetes or chronic kidney disease
- In patients 60 years or older
  - Initiate Rx at BP 150/90 or higher
  - Goal < 150/90
  - If Rx results in lower BP, eg <140, continue if tolerated
- Specific first-line drug classes recommended (not including a beta blocker or alpha blocker)

Blood pressure control rates using current guidelines

Figure 2. Age-adjusted awareness, treatment, and control of hypertension among adults with hypertension: United States, 2007–2010



† Significant difference between the two time periods.
NOTE: Access data table for Figure 2 at: http://www.cdc.gov/nchs/data/databriefs/db107_tables.pdf#2.
SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey.

Prevalence of hypertension and controlled hypertension-United States, 2007-2010

(MMWR, 2013 62:144-148)

- NHANES analysis
  - Overall adjusted prevalence of hypertension (≥ 140/90 or on Rx): 30%
  - Prevalence in DM: 59%
- Control rates (< 140/90)
  - Overall: 48%
  - DM vs nonDM: 45% vs 64%

Systolic Blood Pressure Intervention Trial (SPRINT) Research Group

Wright JT et al. NEJM 2015;373:2103-16.

Systolic Blood Pressure Intervention Trial (SPRINT)

- Randomized 9361 persons ≥ 50 y/o with SBP ≥130 mm Hg (most on medications) and increased CV risk* but no DM, to SBP target <120 mm Hg (intensive) or <140 mm Hg (standard treatment)
- Primary composite outcome – MI, other ACS, stroke, heart failure, death from CV cause

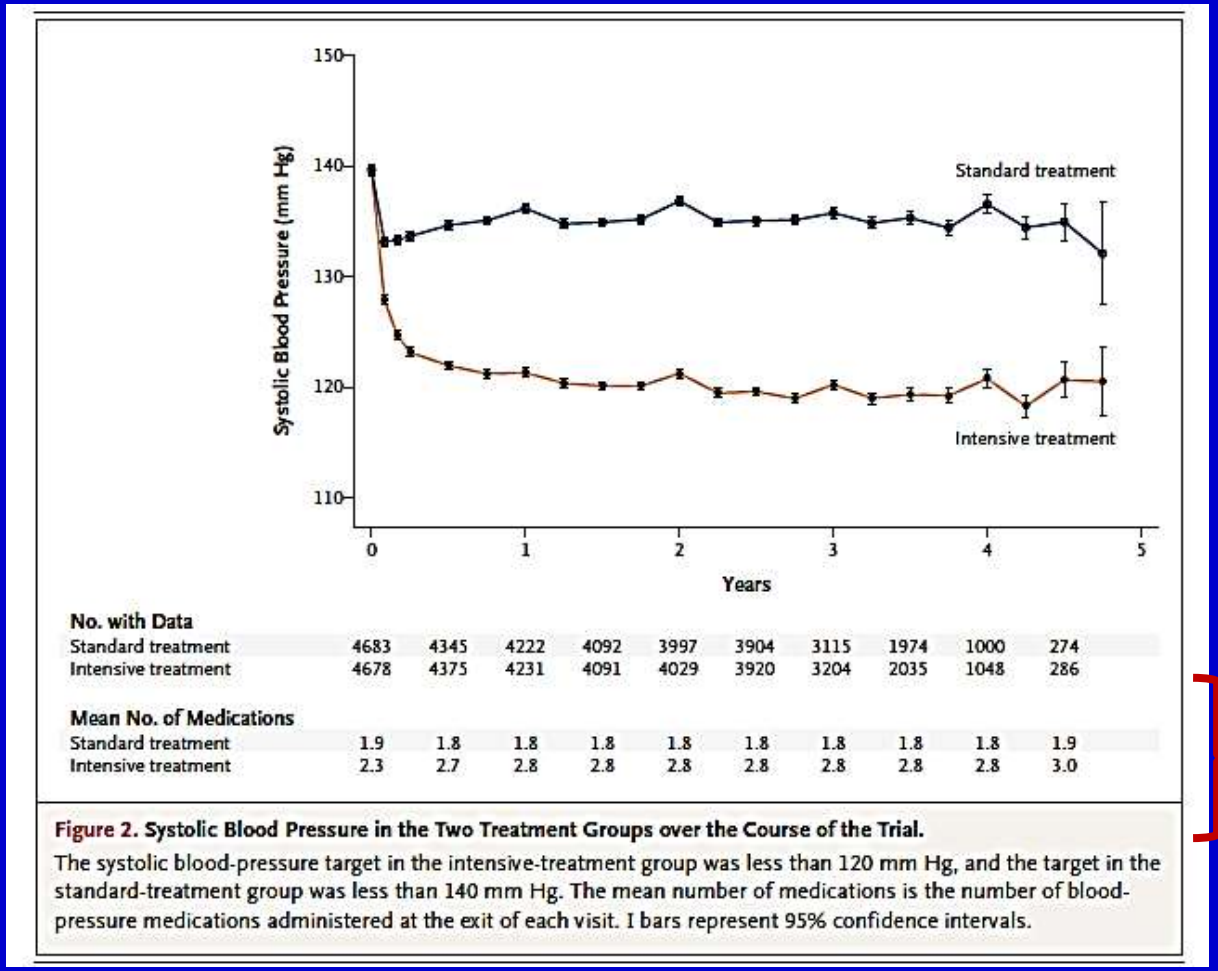
*One or more of the following: clinical or subclinical CVD other than stroke; CKD excluding PCKD with an eGFR 20 to <60 ml/min/1.73 m^2 (4v MDRD), a 10-year risk of CVD of ≥15% by Framingham risk score; or age ≥75 years. Patients with DM or prior stroke excluded.

Wright JT et al. NEJM 2015;373:2103-16.

Systolic Blood Pressure Intervention Trial (SPRINT)

Good separation in achieved systolic BP

Mean numbers of medications were 2.8 in intensive and 1.8 in standard treatment groups



No. with Data										
Standard treatment	4683	4345	4222	4092	3997	3904	3115	1974	1000	274
Intensive treatment	4678	4375	4231	4091	4029	3920	3204	2035	1048	286
Mean No. of Medications										
Standard treatment	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9
Intensive treatment	2.3	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.0

Figure 2. Systolic Blood Pressure in the Two Treatment Groups over the Course of the Trial.
The systolic blood-pressure target in the intensive-treatment group was less than 120 mm Hg, and the target in the standard-treatment group was less than 140 mm Hg. The mean number of medications is the number of blood-pressure medications administered at the exit of each visit. I bars represent 95% confidence intervals.

Wright JT et al. NEJM 2015;373:2103-16.

Systolic Blood Pressure Intervention Trial (SPRINT)

- Stopped early due to significantly lower rate of primary composite outcome of 1.65% per year in the intensive-treatment and 2.19% per year in standard-treatment group (HR with intensive treatment, 0.75; 95% confidence interval [CI], 0.64 to 0.89; P<0.001)
- All-cause mortality significantly lower in the intensive-treatment group (HR 0.73; 95% CI, 0.60 to 0.90; P = 0.003)

Wright JT et al. NEJM 2015;373:2103-16.

SPRINT results and adverse events

TABLE 2

SPRINT results at a glance

Outcome	Percent per year: Intensive therapy	Standard therapy	Hazard ratio
Primary outcome[a]	1.65	2.19	0.75[b]
Secondary outcomes			
Myocardial infarction	0.65	0.78	0.83
Other acute coronary syndromes	0.27	0.27	1.00
Stroke	0.41	0.47	0.89
Heart failure	0.41	0.67	0.62[b]
Cardiovascular mortality	0.25	0.43	0.57[b]
Other secondary outcomes			
All-cause mortality	1.03	1.40	0.73[b]
In patients with chronic kidney disease—decrease in eGFR of ≥ 50% or end-stage renal disease	0.33	0.36	0.89
In patients without chronic kidney disease—decrease in eGFR of ≥ 30% to < 60 mL/min/1.73 m^2	1.21	0.35	3.49[b]

Adverse events	Percent of patients: Intensive therapy	Standard therapy	Hazard ratio
Hypotension	3.4	2.0	1.70[b]
Syncope	3.5	2.4	1.44[b]
Hyponatremia	3.8	2.1	1.76[b]
Hypokalemia	2.4	1.6	1.50[b]
Injurious fall	7.1	7.1	1.00
Orthostatic hypotension without dizziness	16.6	18.3	0.88[b]
Orthostatic hypotension with dizziness	1.3	1.5	0.85
Acute kidney injury	4.4	2.6	1.71[b]

[a]The composite of myocardial infarction, acute coronary syndrome, stroke, heart failure, or death from cardiovascular causes.
[b]$P < .05$.
eGFR = estimated glomerular filtration rate, according to the Modification of Diet in Renal Disease study equation.

Information from SPRINT Research Group; Wright JT Jr, Williamson JD, Whelton PK, et al. A randomized trial of intensive versus standard blood-pressure control. N Engl J Med 2015; 373:2103–2116.

“White coat” and “Masked” Hypertension

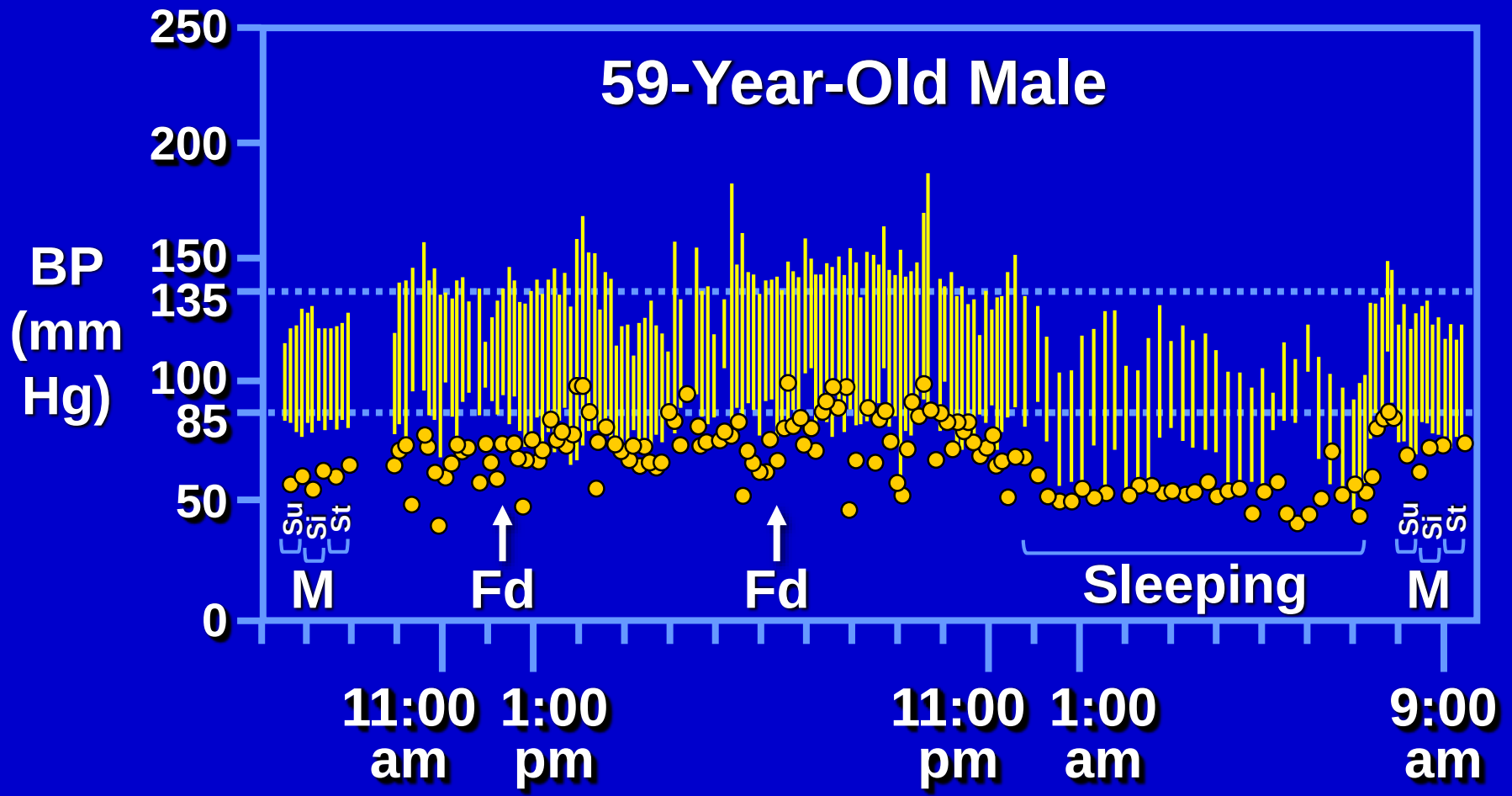
Ambulatory Blood Pressure Monitoring

Information provided by ABPM

- Estimates average or true BP (most likely responsible for most of the adverse effects of HBP)
- Diurnal variation (nighttime BPs normally 10-15% lower than average awake/active BPs)
- Short-term variability
- BPs during various activities

Ambulatory BP Monitoring

Normal Patients



Average changes in blood pressure associated with common activities

	Systolic	Diastolic
Meetings	+20	+15
Work	+16	+13
Transportation	+14	+9
Dressing	+12	+10
Telephone	+10	+7
Eating	+9	+10
Talking	+7	+7
Business (at home)	+2	+3
Relaxing	0	0
Sleeping	-10	-8

Clark et al, J Chron Dis, 1987

Office vs Ambulatory BP
Target organ damage

- Left ventricular mass
- Diastolic dysfunction
- Carotid intimal-medial thickness
- Urine albumin excretion
- Retinopathy

Office vs Ambulatory BP

Prognostic Information

- Verdecchia et al (1994)
  - CV event rate per 100 pts over 3 years:
  - -normal BP: 0.47
  - -WCH: 0.49
  - -sustained HBP: 1.79 (4.99 in nondippers)
- Khattar et al (1998)
  - LVH and carotid artery thickening after 9 years
  - -WCH: 11%
  - -sustained HBP: 38%
- Syst-Eur study
  - -lower CV event rate in WCH vs sustained HBP

Ambulatory BP Monitoring
Clinical Applications

- Suspected “white-coat” HTN
- Disproportionate target organ damage
- Resistant HTN
- Hypotensive symptoms with therapy
- Episodic hypertension
- Suspected autonomic dysfunction
- Guide to therapy

White Coat/Office Hypertension

- Definition
  - Office BP >140/90 with awake ABP <135/85
- Lack target organ injury
- Hypotensive symptoms with Rx
- Normal out-of-office readings

White Coat/Office Hypertension

- More common in women, age >65 year old, ISH
- Prevalence estimates 20-40%; 30% in pregnancy
- Prognosis correlates best with out-of-office measures
- May predict future HTN

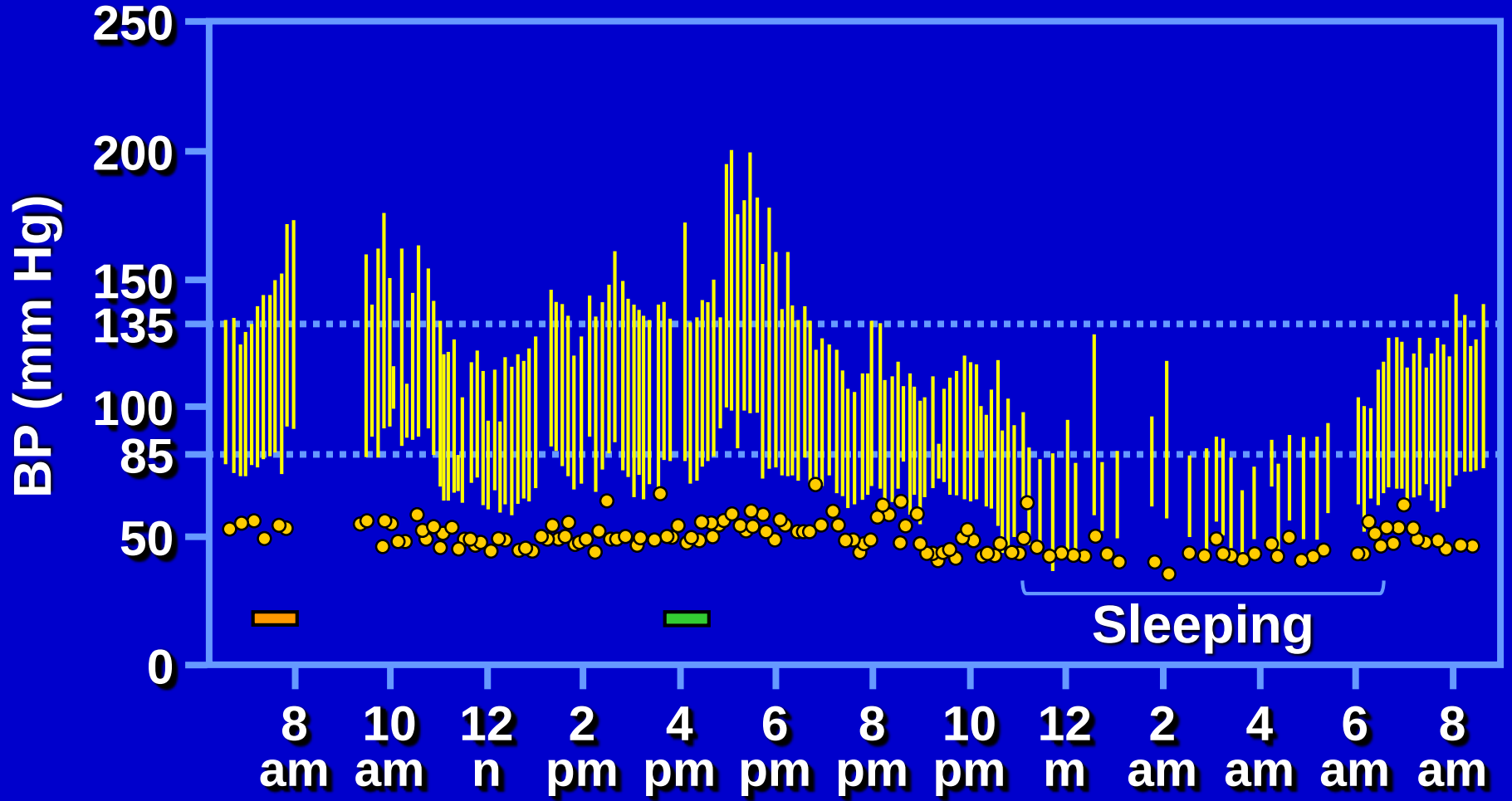
White Coat/Office Hypertension

Classification	CV event rate
HTN	1.79-4.99
"White-coat" HTN	0.49
Normal	0.47

Verdecchia et al: Hypertension 24(6):793, 2000

Ambulatory BP Monitoring

White Coat/Office Hypertension



Anxious while hooking up machine

Anxious while waiting for physician

Should physicians measure BPs?

Table 3. McKay et al[9]: adherence ambulatory care physician to AHA guidelines

Guideline	% of Physicians Following
All guidelines	0
Arm at heart level	98
5th Korotkoff sound	78
Palpate SBP initially	38
BP taken both arms	23
Correct deflation rate	18
Patient correctly positioned	10
Rest interval given	4
Correct cuff size used	3

Graves, AJH, 2004

Current protocol for standardized BP measurement in the Mayo Clinic Division of Nephrology and Hypertension

- Clinical assistant rooms patient and applies automated oscillometric BP device (Bp Tru®)
- Bp Tru® accuracy = multiple RN readings
- Patient seated with arm/feet supported
- Patient left alone with device which obtains 6 readings 1 minute apart (1st reading discarded then average of remaining 5)
- Health care provider enters room

Disproportionate Target Organ Damage

- BP controlled or in normal range by office measurement
- New or worsening target organ injury
- Are office readings underestimating average BP level?

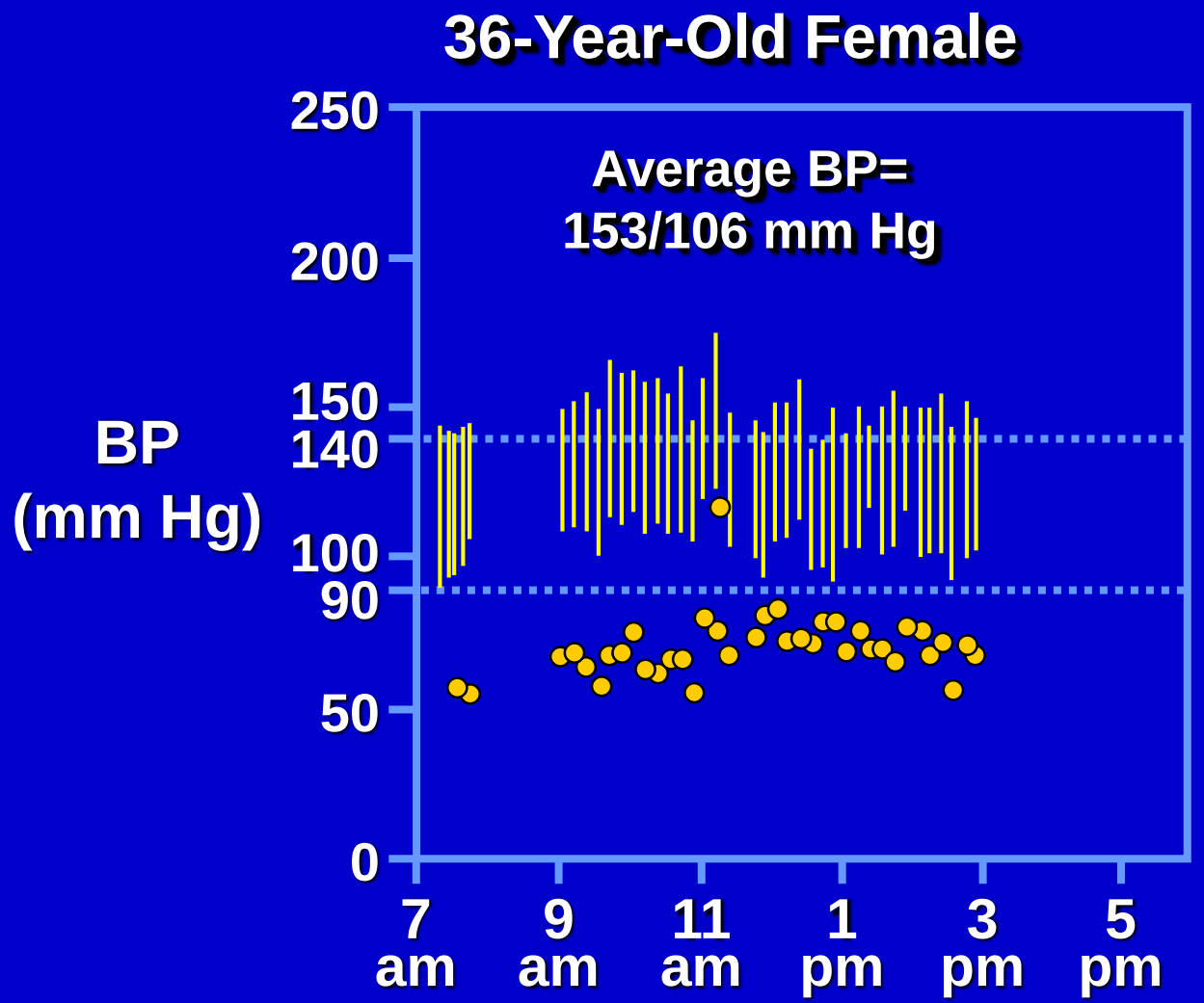
Disproportionate Target Organ Damage

Reverse white coat (masked) hypertension/Office normotension

Reverse white coat (masked) hypertension/Office Normotension

- BP controlled or in normal range by office measurement
- Prevalence: 9-23% (Pickering et al: Hypertension 2002;40:795-796)
- New or worsening target organ injury
- Office readings underestimate average BP level
- More common in smokers
- Same CV risk/prognosis as hypertension

Reverse white coat (masked) hypertension/Office Normotension



Disproportionate Target Organ Damage

Nocturnal Hypertension

Loss of Nocturnal Fall in BP

Secondary HTN

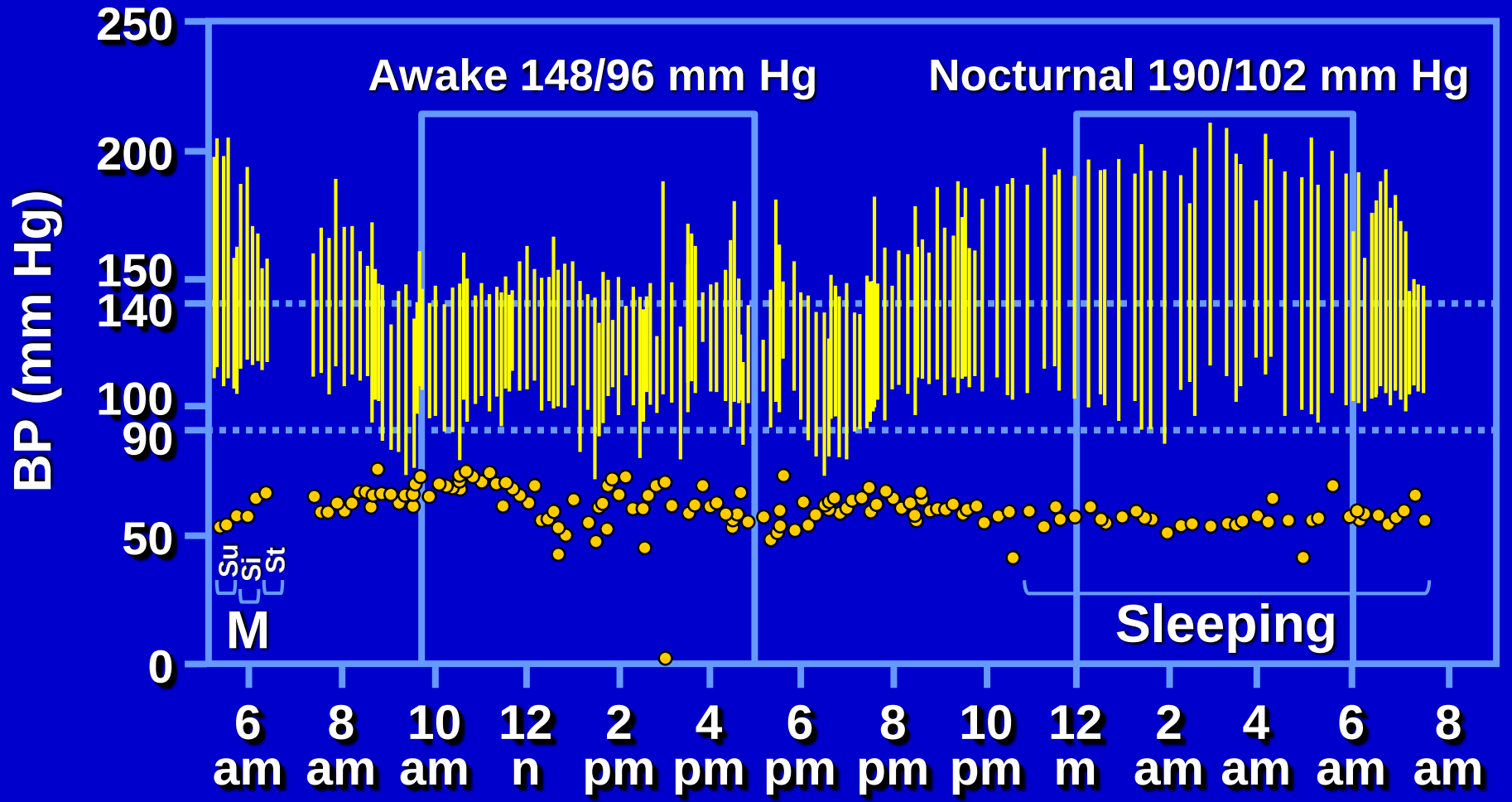
Renovascular disease
Pheochromocytoma
Primary aldosteronism
Cushing's disease (excess steroids)
Chronic Kidney Disease

Autonomic dysfunction

Idiopathic
Diabetic autonomic neuropathy

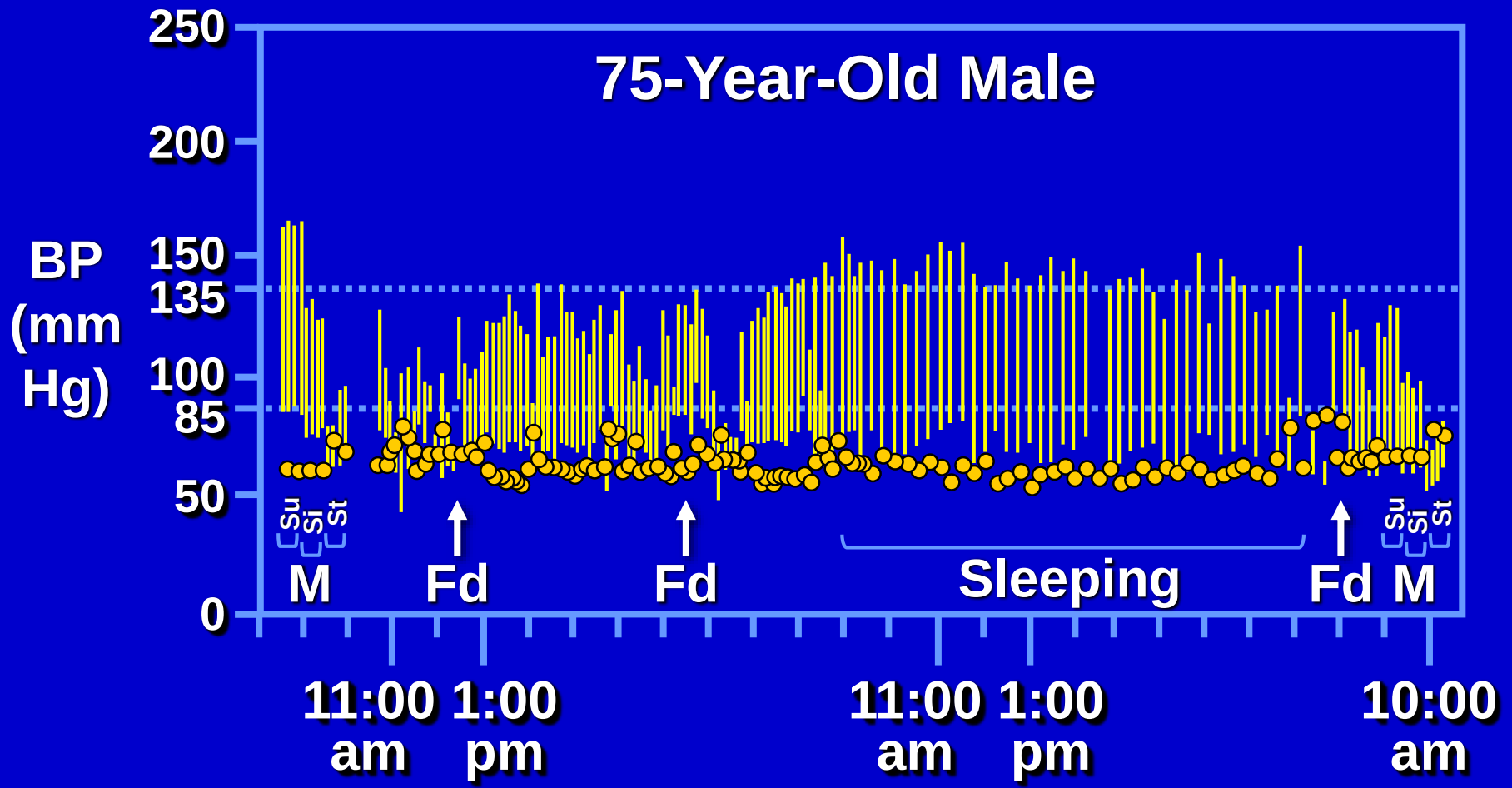
Aging (nondippers)

Nocturnal Hypertension



Ambulatory BP Monitoring

Autonomic Failure



Ambulatory BP Monitoring
Summary/Conclusions

- Benefits:
  - Better correlation with target organ damage and subsequent cardiovascular events
  - Identifies WCH, sleep-related changes, etc
- Disadvantages:

  Cost:

  -Mayo: 6 hr: $ 222, 24 hr: $ 545

  -Medicare payment (WCH only): $ 61

  Side effects:

  - Arm pain, bruising, sleep interruption

Automated Self-BP measurement

- Most devices use an oscillometric technique: detects the point of maximal oscillation ~ mean intra-arterial BP then calculates SBP and DBP
- Advantages:
  - no transducer so cuff placement not critical
  - less susceptible to external noise
  - can take and store multiple readings, downloadable and transmissible
- Disadvantages:
  - effected by arterial stiffness: may underestimate MABP in older stiff vessels
  - movement artifact
  - Algorithms used for BP calculations vary between manufactures
  - BP calculations usually requires a regular heart rate

Automated Self-BP measurement
Arm, wrist, or finger?

Automated Self-BP measurement
Arm, wrist, or finger?

- Arm is preferable: need appropriately sized cuff, accuracy can be confirmed with simultaneous manual (aneroid) readings using Y-connector
- Some devices (eg Microlife®) can store and transmit via PC/internet up to 100 readings

Table 5. Validated automated blood pressure measuring devices

Device	AAMI	BHS Grade SBP/ DBP
Datascope Accutorr Plus	Passed	A/A
CAS Model 9010	Passed	NA
Colin Pilot 9200	Passed	B/A
VSM MedTech BpTRU (BPM 100)	Passed	A/A
Omron HEM 705C	Passed	B/A
Omron HEM 722C	Passed	A/A
Omron HEM 735C	Passed	B/A
Omron HEM 713C	Passed	B/B
Omron 737	Passed	B/B
Omron M4	Passed	A/A
UA 767		A/A
Welch-Allyn Vital Signs		A/A
Visomat OZ2	Passed	C/B

Grades A–D: A = best agreement with mercury standard; D = worst agreement with mercury standard and still "pass."
AAMI = American Association for the Advancement of Medical Instrumentation; BHS = British Hypertension Society.

Graves, AJH, 2004

Automated Self-BP measurement
Arm, wrist, or finger?

- **Wrist devices:**
  - May not be as accurate as arm cuff though improving
  - Accuracy very dependent on arm position via hydrostatic effect of blood column (crucial to have wrist at heart level), units with position sensor may help
  - Cannot be simultaneously compared to manual measurements
  - Convenient, especially useful in very large or funnel-shaped arm

Automated Self-BP measurement
Arm, wrist, or finger?

- **Finger devices**
  - Commercially available devices (Omron®, others) use standard oscillometric technology and are generally not recommended due to accuracy issues:
    - Effects of hand position
    - Peripheral digital vasoconstriction

What about the accuracy of automated BP devices in public places?

Advantages and Limitations of Public Blood Pressure Measurement

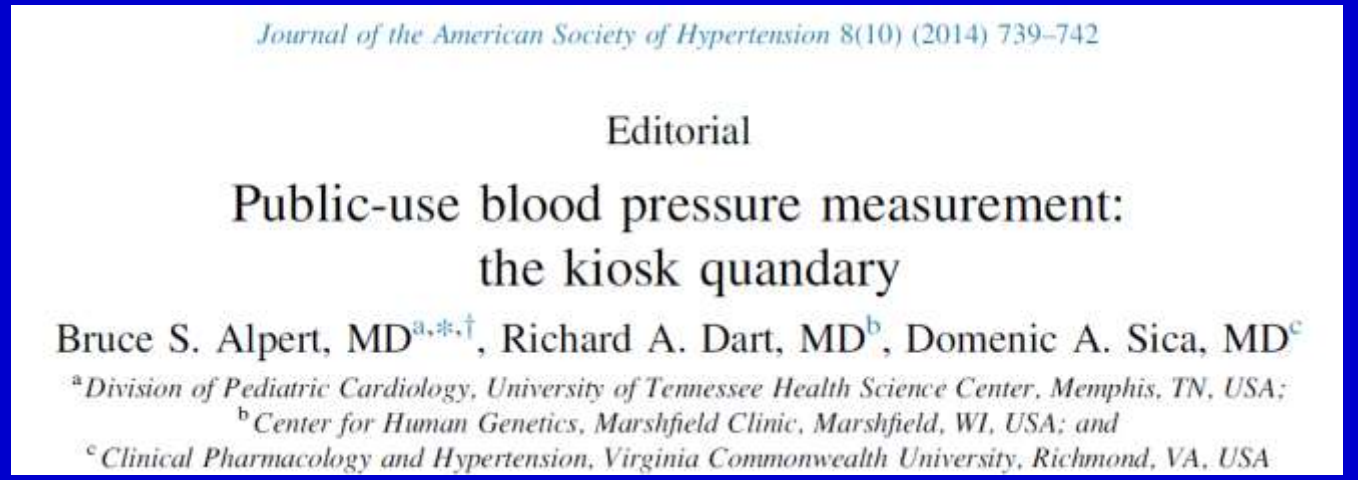
Potential advantages

- Increased screening for hypertension in persons without the resources to own a BP monitor or to see their physician frequently
- Increased patient involvement in hypertension care and enhanced adherence to therapy
- Demonstrated patient and physician interest in the use of public BP measurement devices for hypertension management

Potential disadvantages

- No validated public BP measurement devices
- Cuff size of current devices is too small for more than one half of hypertensive patients
- No established values for normal and abnormal BP taken in public places
- Lack of reliable mechanisms of referral to medical care for persons whose BP is elevated

Graves, AFP, 2005



Journal of the American Society of Hypertension 8(10) (2014) 739–742

Editorial

Public-use blood pressure measurement: the kiosk quandary

Bruce S. Alpert, MD[a,*,†], Richard A. Dart, MD[b], Domenic A. Sica, MD[c]

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[b] Center for Human Genetics, Marshfield Clinic, Marshfield, WI, USA; and
[c] Clinical Pharmacology and Hypertension, Virginia Commonwealth University, Richmond, VA, USA

Criteria that defines a clinically acceptable BP kiosk:

1. Proper validation testing to an accepted national standard
2. A cuff suitable for the particular arm circumference of the patient
   -most kiosks use a 33 cm circumference (std adult) which is too small for 37% of the general US population and too small of 50% of the hypertensive adult US population

Initial approach to the patient with hypertension

Lifestyle Modifications: appropriate for pre-hypertension, and all other stages

Modification	SBP Reduction
Weight Loss	5-20 mmHg/10 kg
DASH Diet	8-14 mm Hg
Sodium reduction	2-8 mm Hg
Physical activity	4-9 mm Hg
Reduce ethanol	2-4 mm Hg

Special Communication

2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults

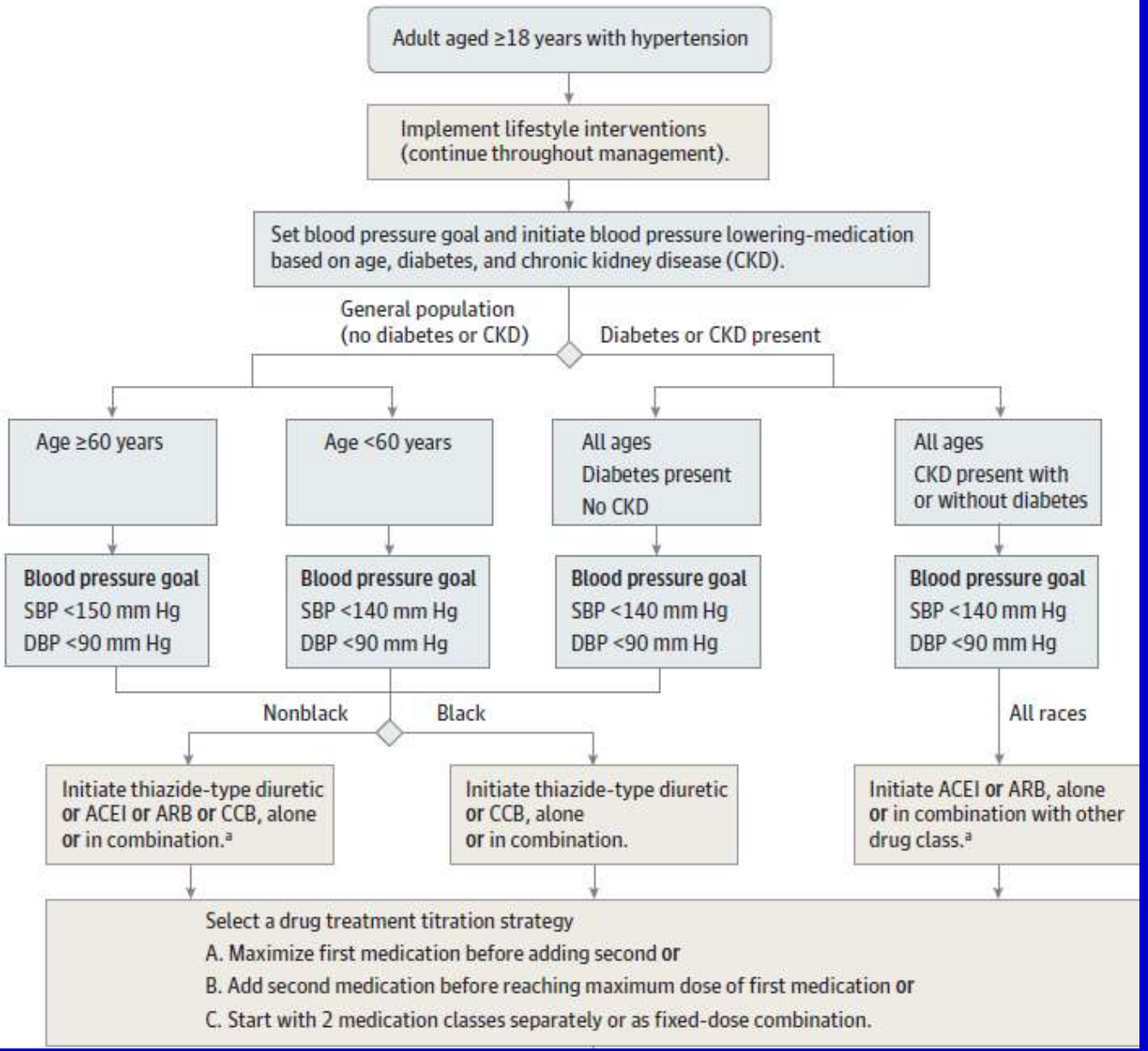
Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8)

JAMA. doi:10.1001/jama.2013.284427
Published online December 18, 2013.

JNC 8
New/key recommendations

- In patients < 60 years
  - Initiate Rx at BP 140/90 or higher
  - Goal BP < 140/90 for all, regardless of presence/absence of diabetes or chronic kidney disease
- In patients 60 years or older
  - Initiate Rx at BP 150/90 or higher
  - Goal < 150/90
  - If Rx results in lower BP, eg <140, continue if tolerated
- Specific first-line drug classes recommended (not including a beta blocker or alpha blocker)

Figure. 2014 Hypertension Guideline Management Algorithm



A few comments regarding drug therapy for hypertension

- The thiazide-type diuretic chlorthalidone may increase in popularity (over hydrochlorothiazide) because
  - It was the original outcome-associated diuretic
  - It provides longer antihypertensive activity (nighttime)
- Less beta blocker use in older patients (less effective, less stroke protection)
- Bedtime dosing of ACEI, ARB, or CCB may reduce CV events in CKD patients compared to daytime dosing (JASN 2011)

Follow-up and Monitoring

- Patients should return for regular follow-up (monthly) and adjustment of medications until the BP goal is reached.
- More frequent visits for stage 2 HTN or with complicating comorbid conditions.
- Serum potassium and creatinine monitored 1–2 times per year (depending on the drug).

Follow-up and Monitoring (continued)

- After BP at goal and stable:
  - follow-up visits at 3 to 6 month intervals.

- Comorbidities, such as heart failure, associated diseases, such as diabetes, and the need for laboratory tests influence the frequency of visits.

Improved Blood Pressure Control With a Physician-Nurse Team and Home Blood Pressure Measurement

VINCENT J. CANZANELLO, MD; PATRICIA L. JENSEN, RN; LORA L. SCHWARTZ, RN; JOEL B. WORRA, BS; AND LOIS K. KLEIN

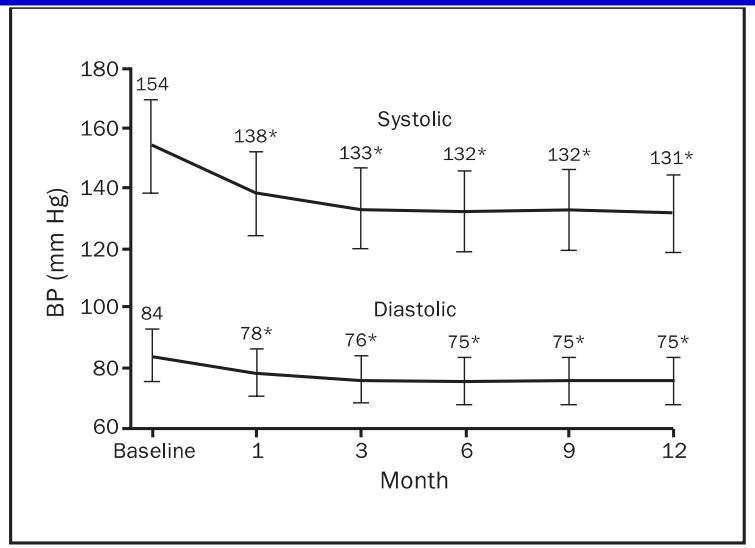


FIGURE 3. Blood pressures (BPs) for the cohort completing the entire 12-month study (n=78). Data are presented as mean ± SD. *P<.01 vs baseline.

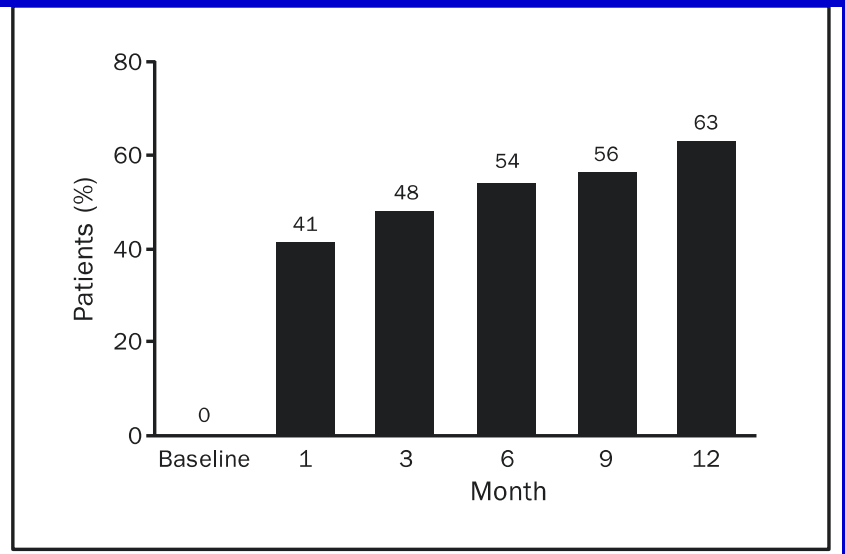


FIGURE 2. Rates of blood pressure control to less than 135/85 mm Hg after dismissal from the hypertension clinic.

N=106, 42 readings at 1,3,6,9,1 mos

Mayo Clin Proc. 2005;80(1):31-36

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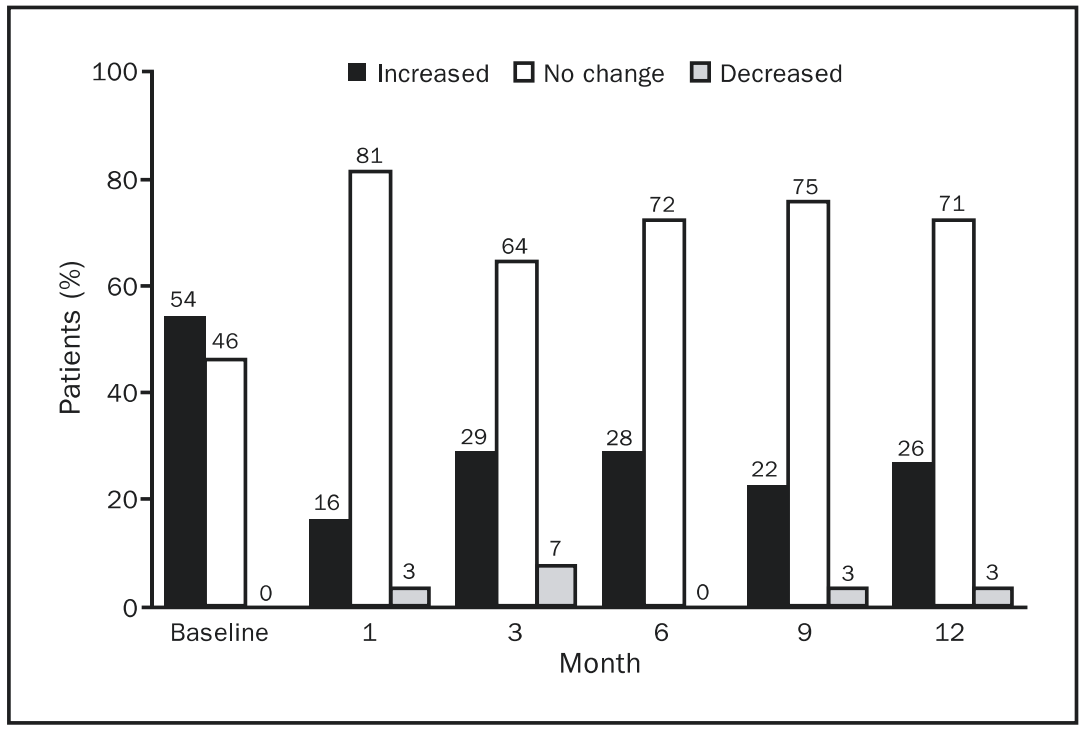


FIGURE 4. Medication interventions made between the initial and dismissal visit (baseline) and then in response to home blood pressure data after dismissal from the hypertension clinic. Medication increase refers to an increase in drug dose, addition of another medication, or both.

16/28 drop-outs contacted with mean bp 163/87 to 144/80 with 4 < 135/85

Approach to the patient who does not reach his/her blood pressure goal despite treatment

Definition of Resistant Hypertension:

Failure to achieve goal BP in patients who are adhering to full doses of an appropriate 3-drug regimen that includes a diuretic

JNC 7 2003

RESISTANT HYPERTENSION

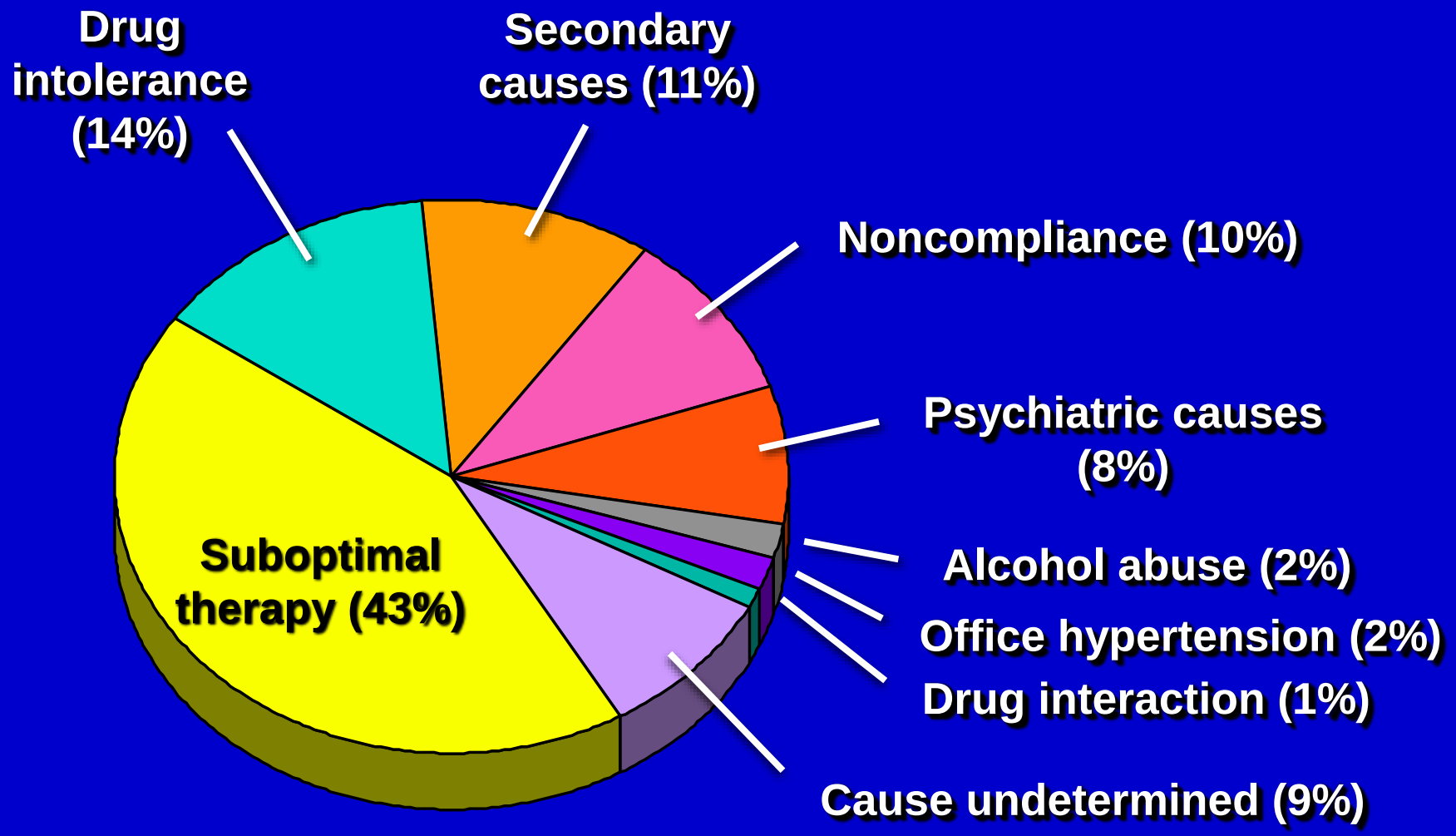
Prevalence

- Ranges from 3% in the unselected general hypertensive population to 20% in the population referred to specialized hypertension centers
- Only about 10% of patients with resistant hypertension are subsequently found to have a secondary cause of hypertension

RESISTANT HYPERTENSION

What are the more common causes of resistant hypertension that should be considered before embarking upon more detailed, expensive, and potentially invasive investigations?

Causes of Resistant Hypertension



Yakovlevitch et al: Arch Intern Med 151:1786-92, 1991

RESISTANT HYPERTENSION
Blood pressure measurement

- Has the office blood pressure been measured correctly?
  - Refrained from caffeine, cigarette smoking
  - Correct cuff size, patient position, etc
- White coat/office hypertension
- Pseudohypertension of the elderly
  - cuff BP higher than intra-arterial BP
  - reason: pressure needed to compress stiff calcified arterial walls
- Cuff-inflation hypertension

RESISTANT HYPERTENSION

Is the patient compliant with medications?

- Hypertensive patients taking prescribed drugs at
  - 1 year ~ 55%
  - 5 years ~ 17%
- Use of electronic bottle cap sensor: ~ 25% of patients failed to take their antihypertensive drugs within 6 hours of the prescribed time
- Regimens should be simple/tolerable/inexpensive (no more than twice daily), routine office visits and/or reports of home blood pressure readings encouraged

RESISTANT HYPERTENSION

Is the patient compliant with lifestyle measures?

OBESITY

- Framingham data: 70% of hypertension in men and 61% in women directly related to excess adiposity with a 5 mm Hg average increase in systolic BP for every 10 pound weight gain

- Mechanisms: sympathetic activation, impaired vasodilation, sodium retention (resistance to insulin and leptin?)

RESISTANT HYPERTENSION

SODIUM

- Dietary history not very reliable
- Can assess compliance via measurement of a 24-hour urinary sodium excretion regardless of whether or not on a diuretic (should be 75-100 meq/d)
- Use of plasma volume measurement or noninvasive hemodynamics

RESISTANT HYPERTENSION

CIGARETTE SMOKING

- Early studies suggested lower BP in smokers- probably related to lower weight and measurement several hours after refraining from smoking
- More recent studies using ambulatory BP measurements show ongoing pressor effect (this could lead to sustained hypertension for 3-4 hours/d in a 2 pack per day smoker)

RESISTANT HYPERTENSION

ALCOHOL

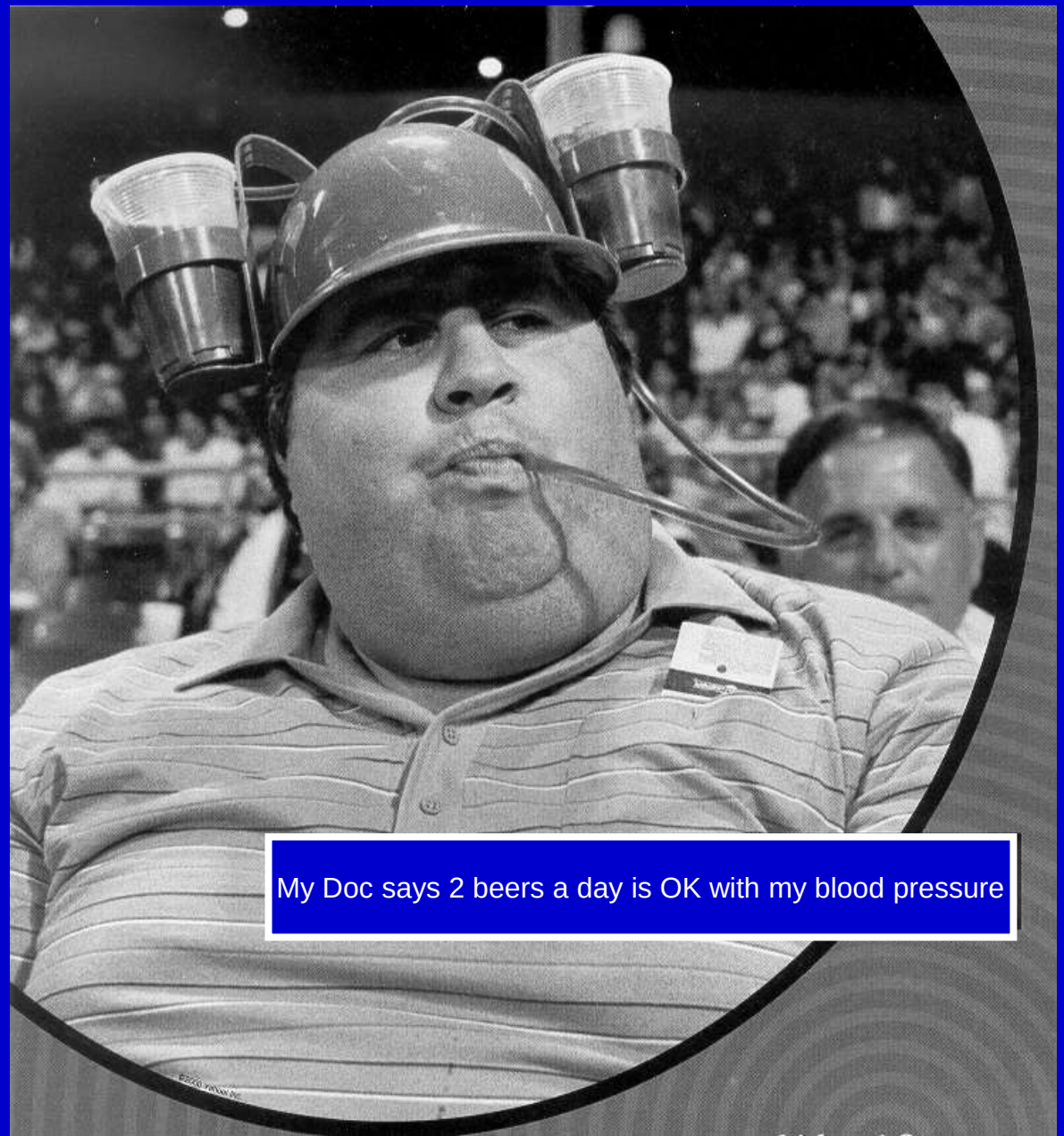
- Alcohol abuse may account for 2-10% of cases of resistant hypertension
- mechanism: centrally mediated sympathetic activation (Randin, NEJM, 1995)
- Current recommendations (JNC7)(lower in women)
  - one ounce (30ml) per day of 100% ethanol:

    beer: 24 ounces (720ml)

    wine: 10 ounces (300ml)

    100-proof whiskey: 2 ounces (60ml)

LIFE STYLE MODIFICATION IN MINNESOTA



LIFE STYLE MODIFICATION IN WISCONSIN

Drugs associated with HBP
(descending order of frequency)

- Nonsteroidal anti-inflammatory drugs (NSAIDS)
- Glucocorticoid hormones (prednisone)
- Immunosuppressive agents: cyclosporine, tacrolimus
- Erythropoietin therapy
- Sympathomimetic drugs
  - Over-the-counter: decongestants, appetite suppressants
  - Illicit: cocaine, amphetamines
- Oral contraceptive pills
  - Less effect with newer low-dose estrogen/progesterone agents
  - some combinations (Yasmin®) contain the aldosterone antagonist drospirenone (less HBP but can increase plasma K+)

Interfering Substances - Herbs

- Amica
- Bloodroot
- Blue cohosh
- Broad bean
- Scotch broom
- Cola nut
- Ephedra
- Foxglove
- Ginseng
- Goldenseal
- Grindelia
- Jimson weed
- Juniper
- Kava
- Yohimbe
- Gentain

WWW. Naturaldatabase.com

Resistant Hypertension
Sleep Apnea

- Definition of obstructive sleep apnea (OSA):
  - ≥ 5 periods/hr of respiratory cessation ≥10 sec
- Prevalence of OSA in general population 4-24% in men and 2-9% in women

Resistant Hypertension
Sleep Apnea and Blood Pressure

- 50% of patients with OSA are hypertensive
- 30% of hypertensive patients may have OSA
- Presence of OSA increases the risk of developing hypertension by 3-fold
- Obesity, alcohol intake, and other factors confound the relationship between HBP and OSA

Resistant Hypertension
Is OSA a reversible cause of HBP?

- Animal model: reversible changes in nocturnal and daytime BPs
- Humans (mostly men): tracheostomy, CPAP has improved nocturnal and daytime BPs (DBP>SBP)
- BP decreases occur independently of changes in weight, alcohol consumption, or sodium intake

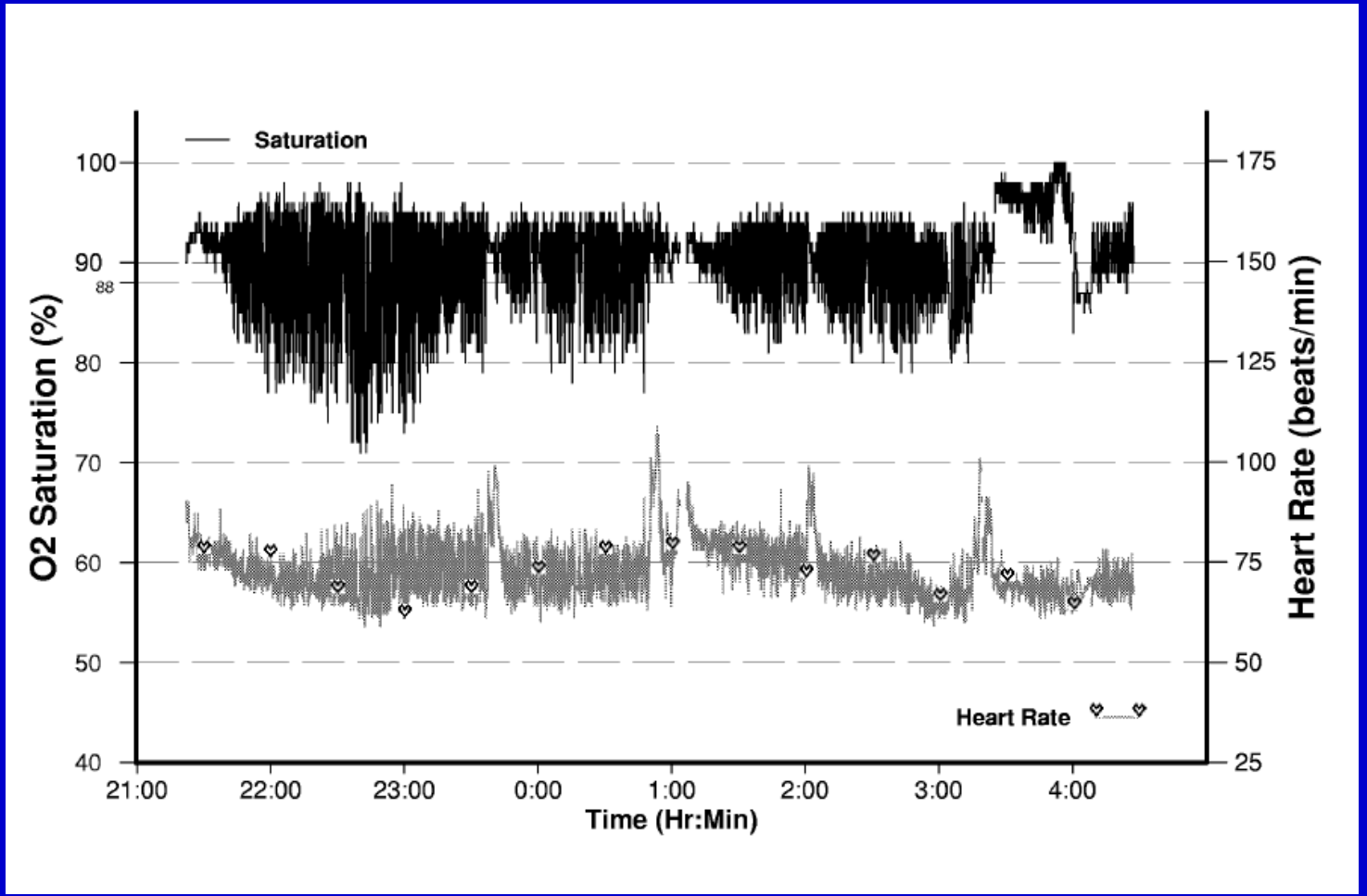
Resistant Hypertension
Signs and Symptoms of OSA

- Habitual sonorous snoring at night with witnessed pauses in respiration
- Uncontrolled sleepiness that interferes with life: at work, public and social gatherings, driving, operating machinery, etc
- Waking in the morning unrefreshed
- Obesity with neck size > 17 inches
- Small oropharnyx

Resistant Hypertension
Diagnosis of OSA

- Variable increases in urinary excretion of metanephrines and catecholamines
- Sleep questionnaire
- Overnight earlobe or finger oximetry
- Overnight polysomnographic study (definitive test)

70 year old man with uncontrolled hypertension on 4 drugs



539 saturation drops of at least 4%

Resistant Hypertension
Secondary Causes: Clinical Pearls

RENOVASCULAR HYPERTENSION

- When to suspect:
  - Sudden onset or acceleration of HBP in young or old
  - Recurrent unexplained episodes of heart failure
  - Unexplained deterioration in renal function (especially if during Rx with ACEI or ARB)
  - Presence of abdominal bruit or other ASVD
- How to diagnose
  - Renal artery duplex ultrasound (if not too obese)
  - Renal CT-angiography (uses IV contrast dye, risk of contrast nephropathy if renal function impaired)
  - Renal MR angiogram (most expensive, risk of nephrogenic sclerosing dermopathy if renal function impaired)
  - Confirm: selective renal arteriogram

Resistant Hypertension
Secondary Causes: Clinical Pearls

PRIMARY ALDOSTERONISM

- When to suspect:
  - Spontaneous or easily provoked hypokalemia (eg after low doses of diuretics)
  - Mild hypernatremia (especially if on thiazide diuretics which tend to cause mild hyponatremia)
- How to diagnose:
  - Screen: plasma renin activity and serum aldosterone (antihypertensive drugs can effect)
  - Confirm: 24-hour urinary aldosterone and sodium collection following 3 days of a high (>200 meq/d) sodium diet

Resistant Hypertension
Secondary Causes: Clinical Pearls

PHEOCHROMOCYTOMA

- When to suspect:
  - Over 90% of cases will have paroxysms of hypertension, headache, palpitations, and diaphoresis
  - In confirmed cases, the frequency of attacks is at least weekly in 75% and the duration of the attack is < one hour in 80%
  - 50% of patients have sustained hypertension
- How to diagnose:
  - Screen: plasma fractionated metanephrines (easiest, most sensitive, few interfering substances/drugs)
  - Confirm: adrenal/abdominal CT or MRI

Resistant Hypertension

What to do if the evaluation for reversible causes is negative?

- Treatment options include aldosterone antagonists (spironolactone, eplerenone), vasodilators (hydralazine, minoxidil) and potent diuretic regimens (thiazide/loop combinations) all of which may have significant side effects and require careful monitoring
- Consider referral

Take-home points

- Goal blood pressure for most patients is <140/90 but new guidelines may recommend a target in the 120s/80
- Ambulatory and/or home BP measurements are required to assess for white coat or masked hypertension which may avoid either over treatment or under treatment
- After a trial of lifestyle measures (I use 3 months), initial drug therapy will usually be a diuretic, angiotensin converting enzyme inhibitor (ACEI), angiotensin receptor blocker (ARB) or a calcium channel blocker (CCB)

Take-home points
(continued)

- In the patient who fails to reach goal blood pressures, consider dietary (weight/salt/alcohol) or medication compliance, interfering drugs (NSAIDs), and sleep apnea before launching an investigation for other secondary causes of resistant hypertension such as renal artery stenosis, primary aldosteronism, pheochromo-cytoma, etc.

The average, healthy, well-adjusted adult gets up at seven-thirty in the morning feeling just plain terrible.

-- Jean Kerr


Minnesota Happy Hour

On the other hand, consider the consequences of the unrestricted harvesting of trees…

Thank you

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Ambulatory BP Monitoring
Reference Values

Average BP levels, mm Hg (American Society of Hypertension):

Daytime:	135-140/85-90
Nighttime:	120-125/80-85
24 hour average:	130-135/80-85

Questions?

How to Engage Patients When They Can't Feel the Problem: An MI Approach to Hypertension

Jon C. Ulven, PhD, LP
Chair of Adult Psychology
Sanford Health Fargo

Disclosures

- I work for a not-for-profit health system (Sanford Health System)
- I have no competing interests to disclose

Why is a psychologist talking to me about hypertension?

- Practicing in Internal Medicine since 2008
- Clinical Skills Development Team Member for a $12 million innovation award from the Center for Medicare and Medicaid Services focused on improving primary care services (2012 to 2015) at Sanford Health
- Chronic Care Professional Certificate (2014) from Health Sciences Institute
- Certificate in Primary Care Behavioral Health (2011) from University of Massachusetts Medical Center

Learning Objectives

- Understand some about a Motivational Interviewing (MI) approach to care
- Demonstrate ways to effectively partner with patients
- Practice acceptance of ways our patients' values sometimes differ from ours
- Illustrate agenda setting
- Apply an MI approach to increasing readiness for change

Important MI Caveats

- Learning MI is challenging
- You will not become skillful from this presentation, but…
- Multiple studies have demonstrated that learning MI comes from observation and feedback over time (e.g., watching each other and giving structured feedback, learning communities)

Why Focus This Talk on Hypertension?

- Essential hypertension is the most common primary diagnosis in primary care settings (CDC, 2010)
- Starting at 115/75 mm Hg, risk of CVD doubles for every 20 mm Hg increase in Systolic and 10 mm Hg increase in Diastolic (Lewington, et al. 2002)
- Patients in Prehypertensive range (120-139 systolic & 80-89 diastolic) have a 90% greater risk of developing hypertension

Why Focus This Talk on Hypertension?

- Patients most often can't feel hypertension!
- This puts us in a bind. Patient feels fine and we (the medical professionals) are telling them that they are not
- We increase our potential to help patients take healthy action with our data when we have a helpful connection with our patients
- Motivational Interviewing (MI) can improve our patient connections

Engagement at its Finest?

Clinician: Your blood pressure is higher than it was last time.

Patient: Really? I feel fine.

Clinician: Well it is definitely up. Are you taking the medication I prescribed regularly?

Patient: Most of the time.

Clinician: Are you cutting down alcohol like we discussed?

Patient: [starting to look defensive] Yes, I'm trying.

Clinician: Are you sticking to the diet we gave you?

Patient: Trying to.

Challenging Interactions (Rosengren, 2009)

- Think about a patient interaction you struggle with. Someone you feel stuck or lost with (maybe even dread to see on your schedule)…
  - How do you feel in the exam room?
  - Where are you now in your work with him or her?
  - Where would you like to be?
  - What's getting in the way of that happening?

Challenging Interactions (Part 2)

- Now imagine that you are this patient. Really put yourself inside this person's skin.
  - How do you feel sitting in the exam room?
  - Where are you now in your work with your practitioner?
  - Where would you like to be?
  - What's getting in the way of that happening?

Assumptions that get us into trouble (Mason and Butler, 2010)

- This person OUGHT to change
- This person WANTS to change
- Health is the prime motivating factor for patients
- If a patient does not decide to change, the interaction is a failure
- Patients are either motivated or not
- A tough approach is often the best
- Now is the right time to change
- I'm the expert; patient should follow my advice or it's their loss

MI Assumptions (Miller and Rollnick, 2013)

- Patients have the ability to solve their own problems
- I work on empowering/activating more than advising/providing information
- It is the patient's body, their health, their choices. There is nothing they have to do
- People tend to move toward better health with good support
- Patients who look "unmotivated" are often ambivalent

Why Do People Change?

Patients change when they are convinced of the following 2 things:

1. Change is necessary
2. The proposed mechanism for change makes sense.

Motivational interviewing taps into what we know about why patients change.

The Spirit of MI = PACE

- Partnership
- Acceptance
- Compassion
- Evocation

Small Group Quiz #1

What is the best MI response when your patient says, "I tried exercise and diet change in the past but my blood pressure didn't change."

A. Exercise really does help – you just have to stick with it.
B. Exercise has many benefits for your health. It's important.
C. It can be hard. Tell me more about what you've been trying.
D. Can I share some info about the benefits of exercise?

ENGAGING

Establishing Rapport

- In your clinic or health setting, how often do you think about making a good connection with your patients?
  - What do I do to increase the likelihood of good connection?
  - What are your beliefs about the power differential?
- Are your patients offered the opportunity to talk about what they want?
- Has everyone in the room been introduced (e.g., nursing staff, students, family members)?
- Can the patient see your computer entries?
- Are you facing the patient?
- Is the patient in a gown at first contact? What might this communicate about power?

Understanding Ambivalence

- People are inherently ambivalent about change
  - We all want to be healthier, eat better, get more exercise, improve sleep, improve our social relationships, etc., but other factors are at play.
- We are creatures of habit and routine.
- There can be downsides to change.
- Ambivalence means being stuck.
  - Teeter totter
  - Our competing motivators cancel each other out and we are stuck with the status quo. We keep on keeping on.

Conflicting Motivators = Ambivalence

- “I need to loose weight, but I hate exercise.”
- “I should stop smoking, but I just can’t seem to do it.”
- “I mean to take my medicine, but I keep forgetting.”
- “I’m supposed to use my nebulizer a couple times each day. It just slips my mind.”
- The sign of ambivalence is the “but” in the sentence.

Ambivalence and Righting Reflex Don't Mix!

Patient: Presents as not ready to change (stuck)

Provider: Has a well-intentioned desire to help people

*Go back to previous slide and make righting reflex comments!

Resist the Righting Reflex!

- The least desirable situation is for the provider to argue for the change while the patient argues against it (Butterworth, 2014)
- Simply reducing discord increases the odds of a good clinic outcome (Miller & Rollnick, 2007)
- Use of righting reflex leads to discord which leads to the patient shutting down or becoming defensive

Instead of Engaging in the Righting Reflex, Validate

- Patient: “I know I should cut back on carbs but it’s really hard. Seems like all the foods I enjoy are carbs.
  - Response #1: “Excess carbs can lead to glucose intolerance, which can lead to many health problems.”
  - Response #2: “I understand, but what’s going to happen to you if you don’t cut back?”
  - Response #3: “It feels like you’re depriving yourself when you have to stop eating things you like.”

Validating

- Leads to the patient relaxing
- When patients are more relaxed, they are more receptive to discussing change

FOCUSING WITH AGENDA SETTING

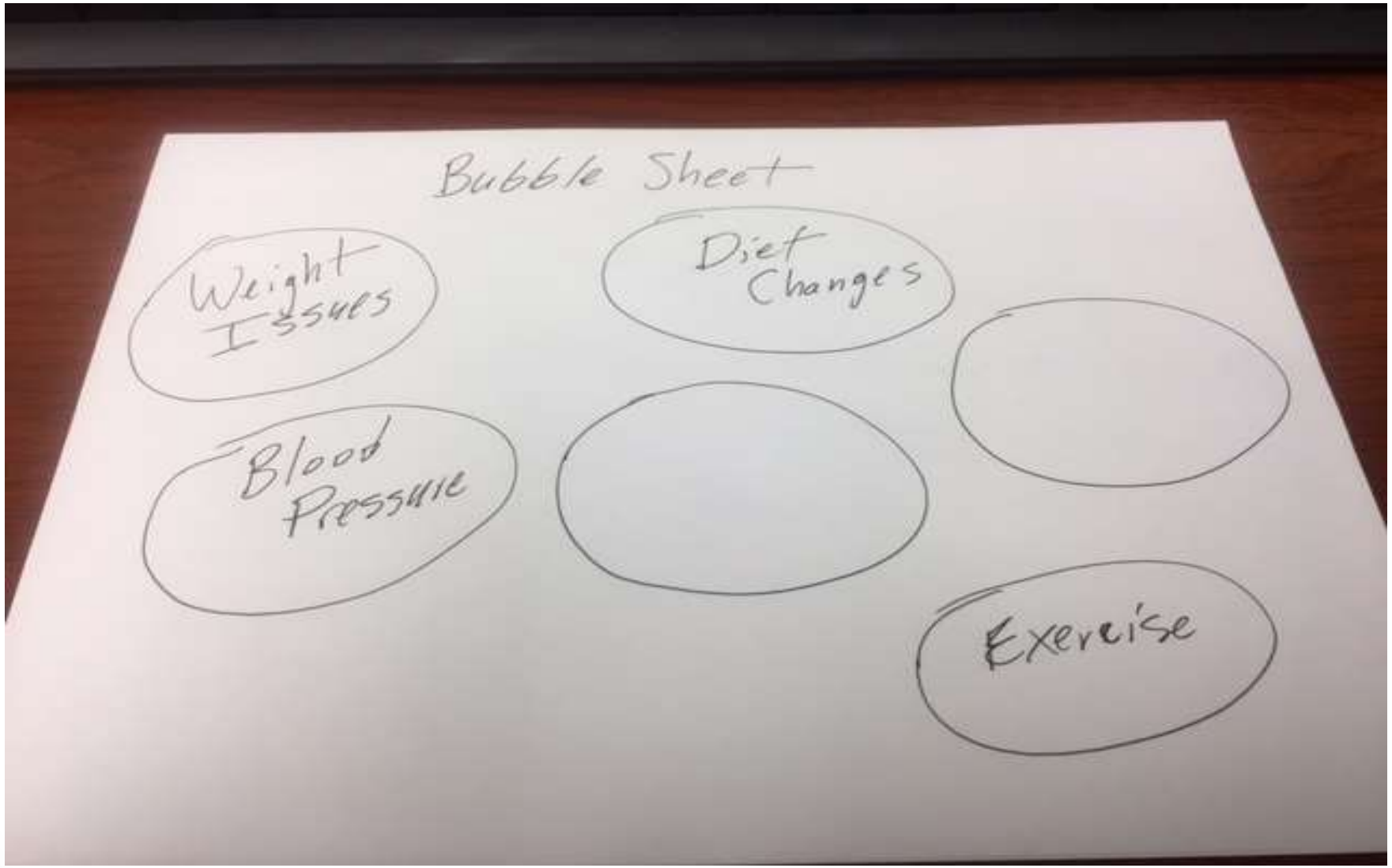
Agenda Setting

- A good guide first finds out where the person wants to go
- In agenda setting the patient is given as much freedom as possible to make decisions
- The health professional can inform the patient what she thinks the issues are but should not decide for the patient what the agenda will be

Steps to Setting Agenda

1. Prepare for the encounter
2. Engage and Explore
   - Agree on time frame
   - Evoke their agenda
   - Explore, listen, validate
3. Set the Agenda
   - Match up your agenda with theirs
   - Be open to switching topics
   - Use this framework to keep the focus productive

Bubble Sheet



Readiness for Change Ruler

- Rulers tell you about the patient's motivation and can elicit change talk.
- A 1 – 10 ruler can be used to ask about various motivational dimensions, including readiness, desire, or commitment.
- Ask the patient why they selected one number and not a lower number. Leads to change talk.

Assessing Importance and Confidence

- Ask about the importance of change and get a numerical rating.
- Ask about confidence in ability to change and get a numerical rating.
- Patients who are high on importance but low on confidence need encouragement that change is possible and ideas about how to change.
- The intervention is designed according to what the patient needs.

Summary

- Exposure to many aspects of MI. Lots of new terms and concepts
- I am paid to be curious, and so are you!
- Consider the perspective of MI to help you have PRODUCTIVE CURIOSITY

Questions/Comments?

MI Resources

- *Motivational Interviewing in Healthcare* (Rollnick, Miller, and Butler, 2008)
- *Motivational Interviewing (3rd Edition)* (Miller & Rollnick, 2013)
- *Building Motivational Interviewing Skills* (Rosengren, 2009)
- *www.motivationalinterview.net*

Thank you for attending the 2017 Hypertension Summit!

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