

# Adult and Elderly Hypertension

Jen Brull, MD, FAAFP



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The logo for FMX, consisting of the letters 'FMX' in a bold, white, sans-serif font, set against a dark orange background with diagonal white stripes.

## Jen Brull, MD, FAAFP

*CEO and Physician Owner, Prairie Star Family Practice, PA, Plainville, Kansas; Performance Improvement Director, Post Rock Family Medicine, Kansas; Medical Director, Aledade, Kansas*

Dr. Brull lives and practices full-scope rural family medicine in Plainville, Kansas. She sees patients in office, hospital (critical access), emergency room, nursing home, hospice, and home settings. Her patients range in age from birth to more than 100 years old. Dr. Brull has volunteered as a clinical faculty member for the University of Kansas School of Medicine since 2002 and has been teaching at conferences for 12 years. Her areas of specialty include quality/performance improvement, electronic health record (EHR)/health information exchange (HIE), social media, and the patient-centered medical home (PCMH). In 2014, Dr. Brull received the University of Kansas School of Medicine's Student Assembly Ad Astra Outstanding Volunteer Award, and the Centers for Disease Control and Prevention (CDC) named her a Million Hearts Hypertension Control Challenge Champion.

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# Learning Objectives

1. Evaluate current management of hypertension in adult and elderly patients, as compared to current JNC 8 guidelines, AAFP/USPSTF screening recommendations, and AAFP/ACP treatment guidelines.
2. Apply current evidence regarding more accurate methods of blood pressure monitoring.
3. Recognize how therapeutic inertia presents a barrier to blood pressure control.
4. Prepare treatment regimens of antihypertensive medications and tools with an emphasis on patient adherence.


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# Audience Engagement System

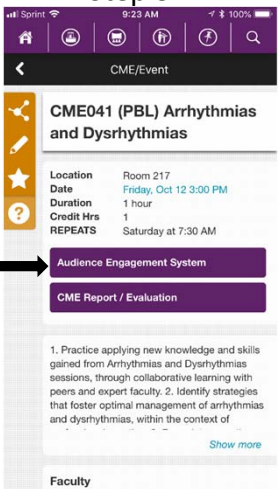
Step 1



Step 2



Step 3



CME041 (PBL) Arrhythmias and Dysrhythmias

Location Room 217  
Date Friday, Oct 12 3:00 PM  
Duration 1 hour  
Credit Hrs 1  
REPEATS Saturday at 7:30 AM

Audience Engagement System

CME Report / Evaluation

1. Practice applying new knowledge and skills gained from Arrhythmias and Dysrhythmias sessions, through collaborative learning with peers and expert faculty. 2. Identify strategies that foster optimal management of arrhythmias and dysrhythmias, within the context of

Show more

Faculty

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“Hypertension is the **most common condition** seen in primary care and leads to **myocardial infarction, stroke, renal failure, and death** if not detected early and treated appropriately.”

{JNC8}

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## STATS: BP control in the US

- About **75 million** American adults (32%) have **high blood pressure**.
- About **1 in 3** American adults has **prehypertension**.
- Only about half (**54%**) of people with high blood pressure have their condition **under control**.
- High blood pressure was a primary or contributing **cause of death** for more than **410,000** Americans in 2014 (more than 1,100 deaths each day).

Kochaneck KD National vital statistics reports 2011; Roger VL Circulation 2012; CDC MMWR 2011

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# AES Question #1

What is the target blood pressure for a 75 year old male patient with diabetes?

- A. <120/90
- B. <130/80
- C. <140/80
- D. <140/90
- E. <140/85
- F. <150/90

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## Current Published Guidelines

Guideline	Population	BP Goal	Initial Treatment Options
ADA (2013)	Patients with diabetes	< 140/80	ACE-I or ARB
American + International Society of HTN (2014)	General ≥ 80 years	< 150/90	Nonblacks: thiazide diuretic, ACE-I, ARB or CCB
	General < 80 years	< 140/90	Blacks: thiazide diuretic or CCB
JNC8 (2014)	General ≥ 60 years	< 150/90	Nonblacks: thiazide diuretic, ACE-I, ARB or CCB
	General < 60 years	< 140/90	Blacks: thiazide diuretic or CCB
	Patients with diabetes	< 140/90	
	Patients with CKD	< 140/90	ACE-I or ARB
European Society of HTN + Society of Cardiology (2013)	General ≥ 80 years	< 150/90	Thiazide diuretic, beta blocker, CCB, ACE-I or ARB
	General < 80 years	< 140/90	
	Patients with diabetes	< 140/85	ACE-I or ARB
	Patients with CKD without proteinuria	< 140/90	ACE-I or ARB
Kidney Disease: IGO (2012)	Patients with CKD without proteinuria	≤ 140/90	ACE-I or ARB
	Patients with CKD with proteinuria	≤ 130/80	
AHA (2017)	All Patients	< 130/80	Thiazide diuretic, ACE-I, ARB or CCB



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# SPRINT

NIH-funded study to examine effect of more intensive BP treatment than currently recommended

- Population: **age 50+** with **HTN** AND 1(+) other **risk factor for heart disease**
- Trial stopped on August 20, 2015 due to significant differences between intensive and standard groups
- Findings: lowering **SBP to  $\leq 120$  mm Hg**
  - reduced composite of **MI, ACS, HF** and **Stroke** by **25%**
  - reduced **death** from **any cause** by **27%**

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## SPRINT: Older Adults

Among **ambulatory adults aged 75 years or older**, treating to an **SBP target of less than 120 mm Hg** compared with an SBP target of less than 140 mm Hg resulted in **significantly lower rates of fatal and nonfatal major cardiovascular events and death from any cause.**

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## Alzheimer's Research Center

Aggressively lowering blood pressure (**SBP goal 120**) in **people at high risk for heart attacks and stroke** also **reduced** their likelihood of developing **mild cognitive impairment** and **cerebrovascular bleed**.



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- B. <130/80
- C. <140/80
- D. <140/90
- E. <140/85
- F. <150/90

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Let's Start at the Very Beginning...

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## Screening for Hypertension

- All **adults over age 18** years should be screened for hypertension [Level A] {USPSTF}
- Screening interval: **1-5 years** based on risk factors (age, weight, race) and blood pressure at most recent screening [Level C] {USPSTF, JNC7}
- Screening test: **office measurement** using **sphygmomanometer**; two elevated measurements over two(+) visits over one(+) week(s), **confirmed with measurements outside the clinical setting** {USPSTF}

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## Office v. Home v. Ambulatory

- Office: **readily available** tool; **variable accuracy** in predicting true hypertension
- Home: **less evidence** available; potential reasonable confirmatory method
- Ambulatory: **best confirmatory test**; potential for increased **cost** and **access challenges**

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## Using that Sphygmomanometer

- Ensure proper **cuff size** and **fit** (measure if needed).
- Ask about **elevating factors** (tobacco, caffeine, recent exercise).
- Seat patient in a chair, **feet flat** on the floor, **arm supported** with upper arm at heart level.
- Allow patient to **sit quietly for five minutes** before taking blood pressure.
- Repeat blood pressure in 5-10 minutes if **abnormal** on first check.

{AHA}

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**7 SIMPLE TIPS TO GET AN ACCURATE BLOOD PRESSURE READING**

The common positioning errors can result in inaccurate blood pressure measurement. Figures shown are estimates of how improper positioning can potentially impact blood pressure readings.

Sources:  
 1. Pickering, et al. Recommendations for Blood Pressure Measurement in Humans and Experimental Animals Part 1: Blood Pressure Measurement in Humans. *Circulation*. 2005;111: 697-716.  
 2. Handberg J. The importance of accurate blood pressure measurement. *The Permanente Journal*/Summer 2009; Volume 13 No. 3 31.

This 7 simple tips to get an accurate blood pressure reading was adapted with permission of the American Medical Association and The Johns Hopkins University. The original copyrighted content can be found at <https://www.ama-assn.org/ama-johns-hopkins-blood-pressure-resources>.

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TARGET:BP | |

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## AES Question #2

Which patient can be diagnosed with hypertension based on the information?

- A. 62 year old African American male establishing care for diabetes with blood pressure of 146/82; home readings from the last two weeks are 110-128/68-74
- B. 22 year old white female seen for annual well exam, no history of chronic disease, with blood pressure of 154/92; no home readings available
- C. 54 year old white male seen for BP recheck due to elevated value of 146/94 last week in office; blood pressure today is 142/82; interval home readings are 134-158/76-92
- D. 48 year old African American female in for follow up on diabetes with blood pressure of 138/76; home readings are 120-132/64-70

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# DX: Hypertension

## Option 1 (more patients treated)

Patients $\geq 80$	<150/90	{Am/IntSH}
Patients <80	<140/90	{Am/IntSH}
Diabetes	<140/80	{ADA}
CKD + Proteinuria	$\leq 130/80$	{KD:IGO}
CKD <u>no</u> Proteinuria	<140/90	{All}

## Option 2 (fewer patients treated)

Patients $\geq 60$	<150/90	{JNC8}
Patients <60	<140/90	{JNC8}
Diabetes	<140/90	{JNC8}
CKD + Proteinuria	<140/90	{JNC8}
CKD no Proteinuria	<140/90	{All}



So Now You Have Hypertension...



## AES Question #3

What testing does not need to be routinely performed in a new hypertension patient?

- A. EKG
- B. TSH
- C. Serum Calcium
- D. Hematocrit
- E. Fasting Lipid Panel

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## New Hypertension Baseline Evaluation

- EKG (12-lead)
- Blood glucose level
- Fasting cholesterol panel
- Glomerular filtration rate
- Hematocrit level
- Serum calcium level
- Serum potassium level
- Urinalysis

{JNC7}

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# Lifestyle Recommendations

- Consume a diet that emphasizes intake of vegetables, fruits, and whole grains; includes low-fat dairy products, poultry, fish, legumes, nontropical vegetable oils, and nuts; and limits intake of sweets, sugar-sweetened beverages, and red meat. Examples: DASH diet, USDA Food Patterns, or AHA diet.
- Limit daily diet to 2400mg of sodium. Reduction of intake to 1500mg of sodium per day is associated with even greater reduction in blood pressure. Reducing intake by 1000mg per day will lower blood pressure, even if the desired daily intake is not achieved.
- Combine the DASH diet with low sodium to increase effect.
- Engage in aerobic physical activity to lower blood pressure (three or four 40-minute sessions of moderate to vigorous activity per week).

{Eckel RH, et al. 2013 AHA/ACC guideline on lifestyle management to reduce cardiovascular risk. *Circulation*. 2014;129(25 suppl 2):S76-S99.}

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# What Good Does it Do?

Intervention	Reduction in mm Hg	
	SBP	DBP
DASH diet plus sodium restriction	11.5	5.7
Sodium restriction (< 1,500 mg per day)	7	3
DASH diet	5.5	3
Weight loss (approximately 9 lb)	4.5	3.2
Exercise	4	3
Restriction of alcohol consumption	3	2

{See Reference Slide}

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## AES Question #4

Which agent(s) would be the best choice for a 56 year old hypertensive black male without diabetes?

- A. Chlorthalidone
- B. Enalapril
- C. Amlodipine
- D. Losartan

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## Medication Initiation

Population	First Line Recommendations
Nonblacks, no DM or CKD	Thiazide Diuretic, ACE, ARB or CCB
African Americans	Thiazide Diuretic or CCB
Diabetes or Chronic Kidney Disease	ACE or ARB

{JNC8}

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## AES Question #5

Which agent(s) would be the best choice for a 71 year old hypertensive white female without diabetes?

- A. HCTZ
- B. Lisinopril
- C. Amlodipine
- D. Losartan

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## Treating “Elderly” HTN Patients

GUIDELINE	DATE	DEFINITION OF		PRIMARY DRUGS FOR "ELDERLY"	SECONDARY DRUGS FOR "ELDERLY"
		ELDERLY (YRS)	SBP THRESHOLD (MM HG)		
NICE (United Kingdom)	2011	≥ 55	140	Thiazide, CCB	ACEi, ARB, BB
ASH-IntSH Writing Group	2013	≥ 60	150	Thiazide, CCB	ACEi, ARB, BB
ESH/ECC (Europe)	2013	≥ 80	160; target 150	Diuretic, CCB, ACEi, ARB, BB; thiazide or CCB for ISH	Same as primary
JNC 8	2013	≥ 60	150	Thiazide, CCB	ACEi, ARB, BB, spironolactone
CHEP (Canada)	2015	None	140	Thiazide, CCB, ACEi, ARB	Add among primary, include BB

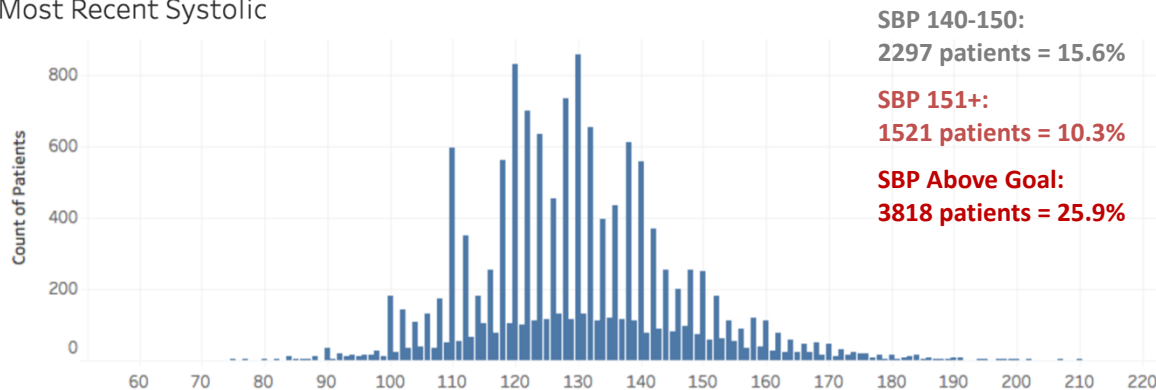
{See Reference Slide}

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# BP Distribution for an ACO

Total count of patients represented: 14,745

Most Recent Systolic



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## Treating to Goal

- Partner with your patients about **new/lower goals** set by some CV organizations (e.g., AHA).
- Validate **borderline** values!
- Address **abnormal** blood pressures – do something **every** time!
  - Lifestyle modification
  - Increase dose of current medication
  - Add a second (or third or fourth) medication
  - Enroll in CCM program with goal of reducing BP
- Follow up quickly (**2-4 weeks**) after an abnormal BP + change in therapy.

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# Chronic Care Management (CCM)

Patients with...

- multiple (two or more) **chronic conditions**,
- expected to last **at least 12 months** or until the death of the patient, and which
- place the patient at **significant risk** of death, acute exacerbation/decompensation, or functional decline

...are eligible for CCM services.

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## CCM Requirements

- Patient **seen in last 12 months** by office billing CCM
- Structured data recorded in **EHR**
- Provide **24/7 access** and continuity of care
- Comprehensive **care management**
- Ensure **care plan** in place
- Manage **transitions of care**
- Home + community based **care coordination**
- Allow for **enhanced communication** opportunities
- Patient **consent**
- Moderate or high complexity **medical decision making** (\*)

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## CCM Billing


- 99490: CCM at least 20 minutes/month + care plan established, implemented, revised or monitored
- 99487: CCM at least 60 minutes/month + care plan established or substantial revision + moderate or high complexity medical decision making
- 99489: CCM for each additional 30 minutes/month beyond meeting criteria for 99487

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Taking it Back Home...

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## SPRINT Recommendation

Treat **systolic** blood pressure to **less than 120 mm Hg** in **all patients** who tolerate that level without significant side effect, **including those patients ≥ age 75**.

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# Practice Recommendations

- Determine which **guideline** your office will utilize for **hypertension diagnosis and control**.
- Make a plan for monitoring **ambulatory blood pressures**.
- Educate **providers and staff** re: importance of BP control and treatment goals.
- Consider instituting or utilizing a **CCM program** to aid in BP control.
- Never ignore the **borderline blood pressure!**

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# Reference Slide

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- Williamson, JD, et al. Intensive vs Standard Blood Pressure Control and Cardiovascular Disease Outcomes in Adults Aged  $\geq 75$  Years. *JAMA*. 2016;315(24):2673-2682.
- [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov); Systolic Blood Pressure Intervention Trial (SPRINT) Overview

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# Questions



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# Contact Information

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