

FROM GUIDELINES TO JUSTICE: HYPERTENSION REIMAGINED

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May 15, 2026



OHHSU

DISCLOSURES

- Dexcom
- Not discussing CGM today

CPD

PROVIDENCE HEALTH EQUITY FELLOWSHIP



Health Equity Fellowship Program

Empowering Caregivers. Advancing Equity. Transforming Communities.

The Providence Health Equity Fellowship Program is a 12-month clinical and operational fellowship designed for caregivers of diverse backgrounds and lived experiences. Fellows receive advanced training in health equity integration, quality improvement, and leadership development, with a focus on creating real-world solutions for health disparities in their communities.

Why Apply?

- **Specialized Training:** Fellows gain expertise in social determinants of health, performance improvement science, and strategies to dismantle systemic inequities.
- **Leadership Development:** The program builds individual leadership skills, preparing fellows to lead change and inspire a culture of equitable outcomes across Providence.
- **Hands-On Impact:** Each fellow designs and implements a health equity project, driving measurable improvements in access, quality, and outcomes for marginalized populations.
- **Professional Growth:** Fellows benefit from mentorship, networking, and opportunities to consult on improvement efforts beyond their reporting structure.

[Health equity fellowship](#)

A screenshot of the Providence Health Equity Fellowship Program website. The page features a blue header with a search bar and navigation links: Home, Initiatives, CHW Programs, Medicaid Strategy, Health Equity Funding, Learning Collaborative + Fellowship, Resources, and Education. Below the header is a large image of books with the text "Health Equity Fellowship Program". A green banner announces "Application for 2026-2027 is Open!" with a button labeled "Link to HE Fellowship Application". Below this is a section titled "Learn More About the Fellowship:" which contains two video thumbnails. The first video is titled "Providence Health Equity Fellowship Program" and the second is titled "HEALTH EQUITY 01". Both videos show a woman sitting in a blue chair outdoors.

PARTNERSHIP
AND
GRATITUDE



Haggerson, Whit...

VP Health Equity and Medicaid
4015 Ss Cao Health Equity



Franklin, Anna (she/her/hers)

Executive Director Health Equity and Environmental... • 4007 Ss Cntrl Div Pop H...

Call [dropdown] [envelope] [message] ...



Frye, Abby (she/her)

Clinical Pharmacy Specialist • 5011 PMG N Pharmacy Admin

Call [dropdown] [envelope] [message] ...



Diversity is a fact.
Equity is a choice.
Inclusion is an
action.
Belonging is an
outcome.

- Arthur Chan

LEARNING OBJECTIVES



Demonstrate general principles in health equity through the lens of **the new hypertension guidelines**



Underscore the association between hypertension and chronic brain, heart, and kidney disease specifically in vulnerable populations



Identify failed and effective strategies to mitigate disparities



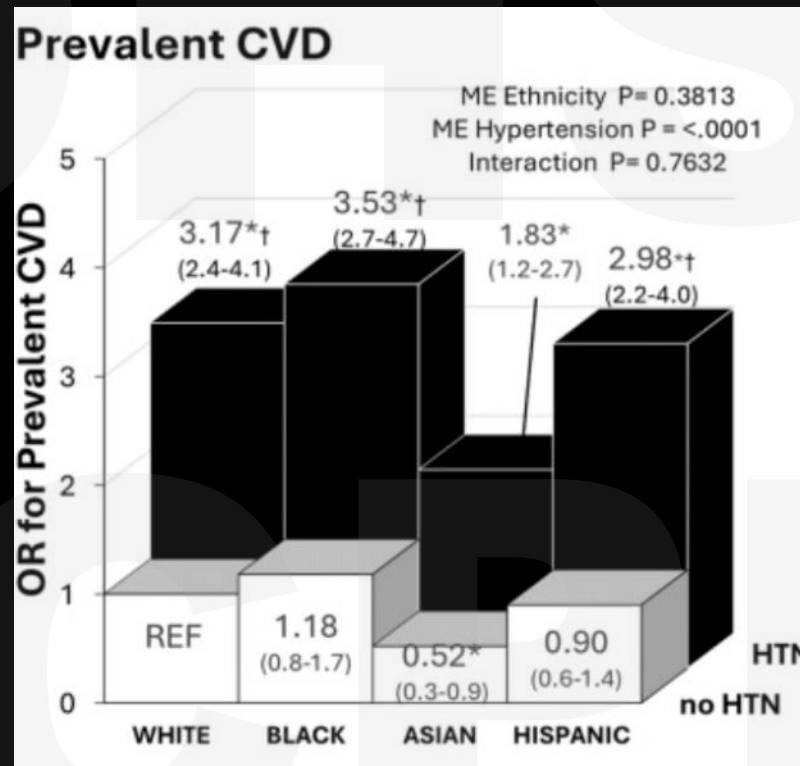
Apply 4 key aspects of the latest hypertension guidelines to real world cases



Inspire equity work

WHY HTN

- Common, morbid, and costly
- Key modifiable driver of CVD and CKD
- More prevalent and less well managed in many vulnerable populations, especially black



Ethnic variations in cardiovascular disease (CVD) risk factors and associations with prevalent CVD and CVD mortality in the United States. PLoS One. 2025 Mar 26;20(3)

Digital Health Interventions for Hypertension Management in US Populations Experiencing Health Disparities: A Systematic Review and Meta-Analysis. JAMA Netw Open. 2024;7(2)



UNSEEN

**STRONG HEARTS,
STRONG NATIONS**
COMBATING HIGH BLOOD PRESSURE
IN NATIVE COMMUNITIES



- Know your blood pressure
- Get screened regularly
- Eat healthy and stay active
- Reduce stress

NEW YORK INDIAN COUNCIL



Hypertensive
disorders of
pregnancy



Early onset
dementia

Bridging the Gap in Racial/Ethnic Disparities: Perspectives from the 2025 American Heart Association/American College of Cardiology High Blood Pressure Guideline. *Curr Hypertens Rep* 28, 13 (2026).

CLINICAL PRACTICE GUIDELINES



2025 AHA/ACC/AANP/AAPA/ABC/ACCP/
ACPM/AGS/AMA/ASPC/NMA/PCNA/
SGIM Guideline for the Prevention, Detection,
Evaluation and Management of High Blood
Pressure in Adults: A Report of the American
College of Cardiology/American Heart
Association Joint Committee on Clinical Practice
Guidelines

Developed in Collaboration With and Endorsed by American Academy of Physician Associates; American Association of Nurse Practitioners; American College of Clinical Pharmacy; American College of Preventive Medicine; American Geriatrics Society; American Medical Association; American Society of Preventive Cardiology; Association of Black Cardiologists; National Medical Association; Preventive Cardiovascular Nurses Association; and the Society of General Internal Medicine.

CASE 1



- 51 yo F (she/her) who moved to PDX from Fresno w her 10 yo and male partner in June 2025
- Visit #1: Long personal and fam hx of HTN, BP 170/111 on lisinopril 40 mg
- BTW "chronic cough" since Nov 2024, when she was dx'd and Rx for "pna" -- on review nl CXR

WHAT NEXT STEPS DO YOU RECOMMEND?

- A. Stop lisinopril, start amlodipine and hctz
- B. Stop lisinopril, start amlodipine/olmesartan
- C. Stop lisinopril, start olmesartan + amlodipine + HCTZ 20/5/12.5 mg

ACC GUIDELINES

2017

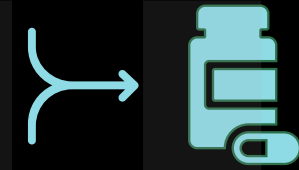
- Race specific

CCB or diuretic for black patients

2025

- Race agnostic

Start 2 drugs, "Single Pill Combination" preferred

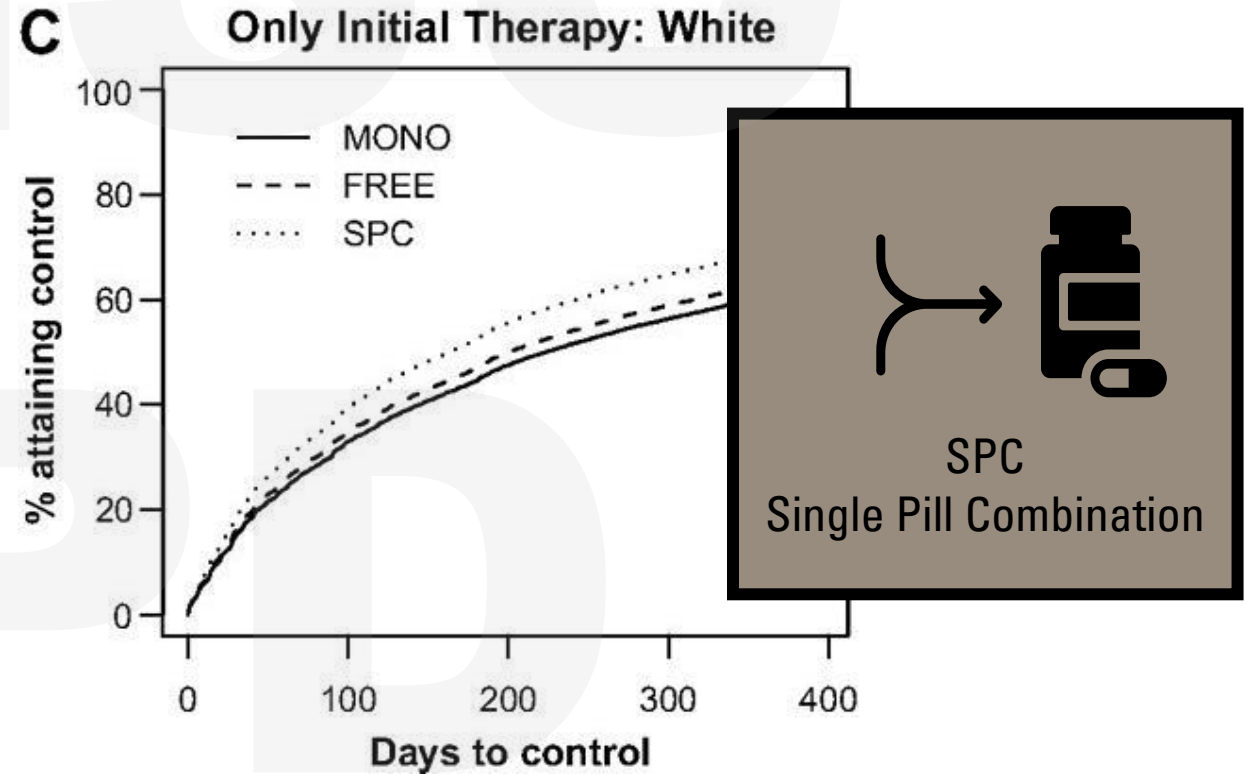
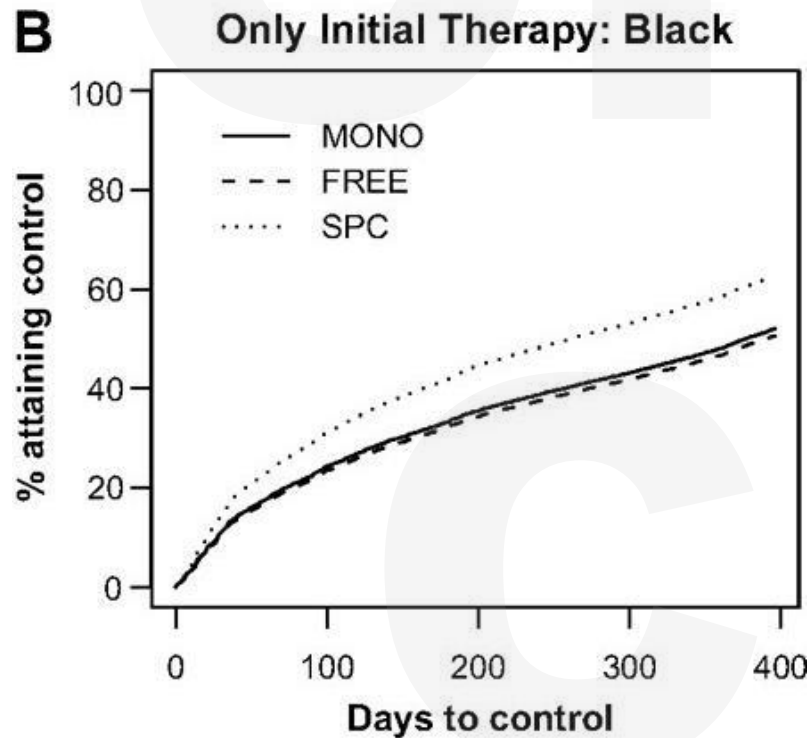


CCPD

Hypertension. 82.10. Oct 2025: e212 - e316

Tajeu GS, et al. Antihypertensive Medication Nonpersistence and Low Adherence for Adults <65 Years Initiating Treatment in 2007-2014. Hypertension. 2019 Jul;74(1):35-46.

In a retrospective study of >100,000 adults with hypertension, individuals who began treatment with single-pill combinations were more likely to achieve BP control compared to those who started on free combinations or monotherapy



Frye, Abby (she/her)

Clinical Pharmacy Specialist • 5011 PMG N Pharmacy Admin



COULD INCREASED USE OF SINGLE-PILL COMBINATION THERAPY REDUCE RACIAL DISPARITIES?



Racial differences in BP response to ACEi monotherapy can be ameliorated with the addition of a diuretic or calcium channel blocker



Single-pill combinations improve adherence, reduce clinical inertia, and have the potential to reduce medication cost



Frye, Abby (she/her)

Clinical Pharmacy Specialist • 5011 PMG N Pharmacy Admin



OHHSU

HOW MANY PILLS WILL YOU GIVE?

VISIT 1

- A. #30, 0 refills – needs labs before more
 - B. #90, 0 refills – needs labs, but I don't want her to run out
 - C. #90, 3 refills – needs labs, but, I really don't want her to run out
- # CPRD



ACC GUIDELINES

2017

- Race specific
CCB or diuretic for black patients



2025

- Race agnostic
Start 2 drugs, "Single Pill Combination" preferred

90 day supply improves adherence in pts <65 RR for nonpersistence or low adherence 0.67, 95% CI 0.66-0.68

53% of pts on meds remain above goal



#90

Tajeu GS, et al. Antihypertensive Medication Nonpersistence and Low Adherence for Adults <65 Years Initiating Treatment in 2007-2014. Hypertension. 2019 Jul;74(1):35-46.

HOW MANY PILLS WILL YOU GIVE?

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VISIT 2, 6 MOS LATER

- BP was 196/136. Repeat 166/69
- Missed the 1 mon f/u appt, ran out
- Was in 140's during the 30 days
- Restarted, linked to 2 wk PharmD covisit, added indapamide, incr indapamide, worked on sodium/exercise
- She is now well controlled



SPEAKING OF “CONTROL”

WHAT IS OUR TARGET BP?

- 2017

- 2025

< 130/80

ACC GUIDELINES

2017

- Race specific
CCB or diuretic for black patients
- SBP goal <130

2025

- Race agnostic
Start 2 drugs
- SBP goal <130



CASE 2

- A 53 yo woman who owns her own jewelry store, smokes cigarettes, and has a hx of complete thyroidectomy comes to clinic for TCM after a hospitalization for peritonsillar abscess I&D. She hasn't seen our clinic in >2 years.
- BP in hospital, at home and in clinic is **220/110** despite restarting CCB, thiazide, ARB and hydralazine. She's having episodes of chest tightness at rest, so you send an ASK CARDS. They recommend:

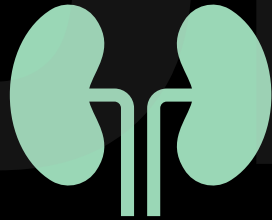
- A) Add hydralazine
- B) Workup for hyperaldosteronism
- C) Add clonidine
- D) Admit



ACC HTN GUIDELINE

ENDO PRIMARY ALDOSTERONISM (PA) GUIDELINE

End Organ Damage



2026

Why screen for PA?

Increased risk of CVA, CAD, a fib, HF, albuminuria, CKD within 8.8 years after dx, c/w those with primary HTN

Curable

Common: ~10% of htn pts, ~20% of resistant htn pts

Who to screen?

Endo: All

HTN Guideline:

- Resistant hypertension
- Low K⁺
- OSA
- Adrenal nodules
- Early stroke (age <40)

WHAT TESTS TO ORDER?

- Potassium
 - If low, also suppressed (appropriately)
 - Must replete K⁺ and repeat test
- Plasma renin activity (PRA)
 - <1
- Aldosterone
 - >10 ng/dL abnormal, unless K is low

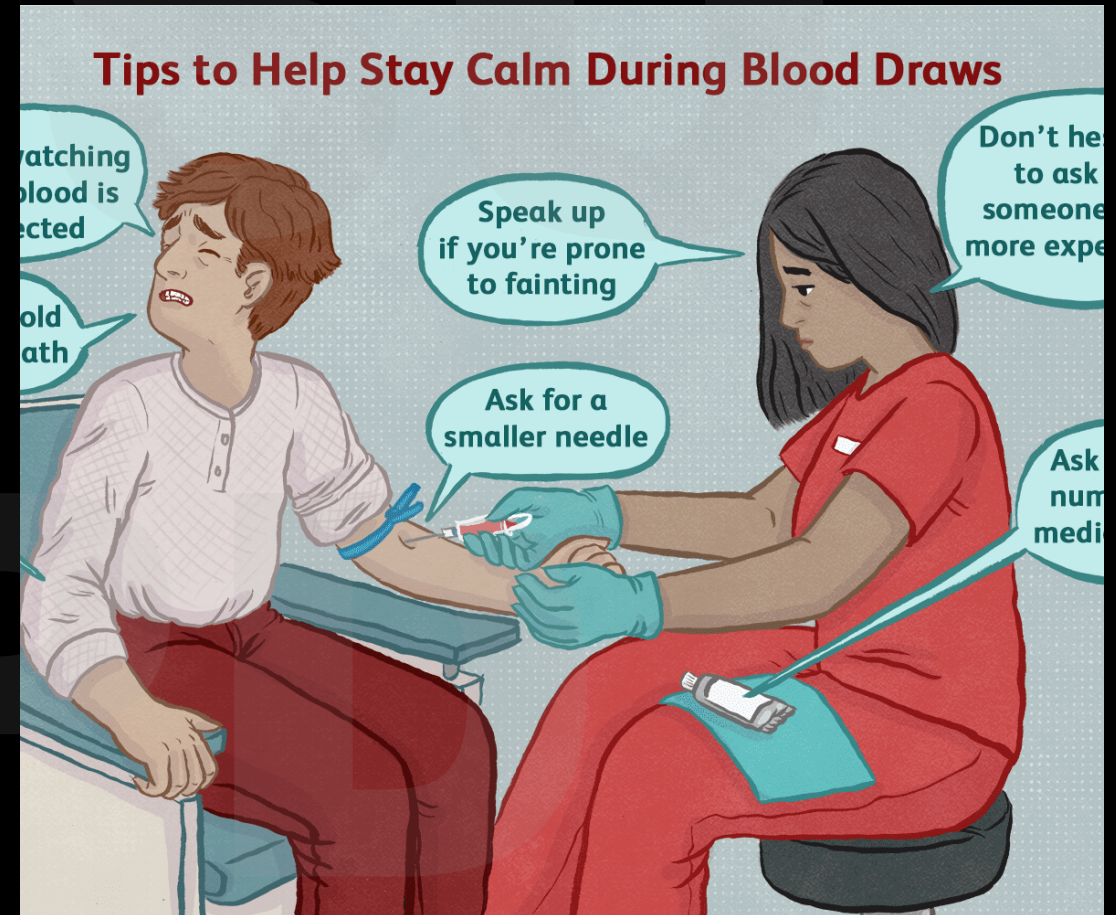
False +: β B

"3 tier strat" - endo

Hold MRA, all others ok

"Regular sodium diet" for 48 hrs

Upright



ADDITIONAL WORKUP



CT adrenal protocol. The timing of contrast helps radiology determine if uptake and washout are consistent with an adenoma.

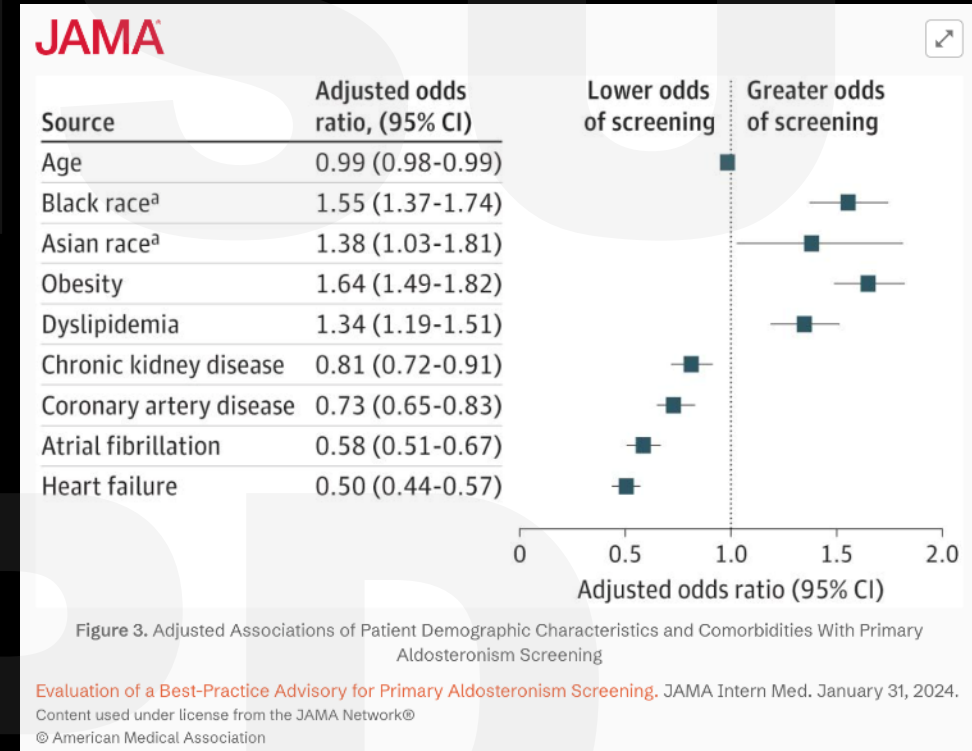


Adrenal venous sampling for unilateral disease

HYPERALDOSTERONISM: STAY TUNED

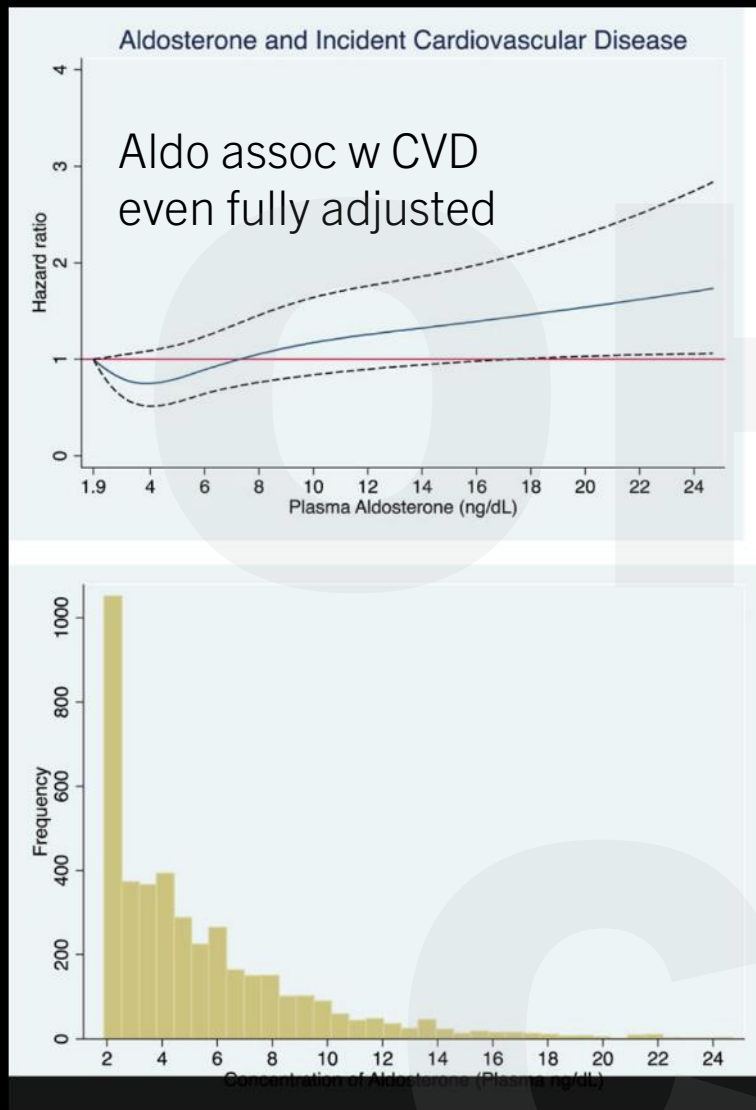
More Likely to Test Positive

- Female
- Black
- Older



Impact of Age, Sex, and Race on Primary Aldosteronism Test Interpretations. Hypertension. 2025 Dec 10. doi: 10.1161/HYPERTENSIONAHA.125.25855. Epub ahead of print. PMID: 41368696.

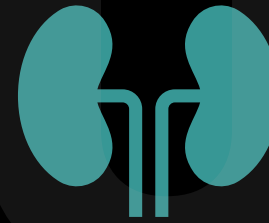
Charoensri S, Bashaw L, Dehmlow C, Ellies T, Wyckoff J, Turcu AF. Evaluation of a Best-Practice Advisory for Primary Aldosteronism Screening. JAMA Intern Med. 2024;184(2):174–182. doi:10.1001/jamainternmed.2023.7389



↓ See this image and copyright information in PMC

Figure 1. Associations of Aldosterone, Examined as a Continuous Variable, with Cardiovascular Events The cubic spline regression with 4 knots (referent 1.9) estimates the hazard ratio of serum aldosterone up to 99th percentile with incident CVD. Dotted lines represent 95% confidence intervals. Below each spline is the histogram of the distribution of serum aldosterone concentration. A) unadjusted B) fully adjusted (age, sex, education, current occupation status, smoking, physical activity, dietary intake, alcohol use and body mass index, systolic blood pressure, low-density lipoprotein, HbA1c and eGFR).

JACKSON HEART STUDY



Black 4x odds cw White



HR 1.13 for every 1-U incr in log aldo

NaCl



Aldosterone, Renin, Cardiovascular Events, and All-Cause Mortality Among African Americans: The Jackson Heart Study. JACC Heart Fail. August 31, 2017.

.Role of Ethnicity and Sex in Hypertension-Mediated Organ Damage in a Dual-Ethnic Cohort of Individuals With Hypertension. Hypertension. 2025. Hernandez-Rubio A, McNally R, Pedrós Barnils N, et al.

ACC GUIDELINES

2017

- Race specific
CCB or diuretic for black patients
- SBP goal <130
- Pooled Cohort Equations
Threshold 10%

2025

- Race agnostic
Start 2 drugs
- SBP goal <130
- PREVENT
Rx if risk $\geq 7.5\%$



The American Heart Association PREVENT™ Online Calculator

[About PREVENT Calculator](#)

[About the PREVENT Equations](#) | [Online Calculator](#)

Recalculate or Pick another Calculator

CVD | ASCVD | Heart Failure

Sex*
 Male Female

Current Smoking
Any cigarette use within the last 30 days
 No Yes

Lipid-lowering medication
Current use of statin medication to lower cholesterol
 No Yes

Age (years)*
30-79

HDL Cholesterol (mg/dL)*
20-100

BMI (kg/m²)*
18.5-39.9

Total Cholesterol (mg/dL)*
130-320

SBP (mmHg)*
90-200

eGFR (mL/min/1.73m²)*
15-140

Diabetes
Any history of diabetes.
 No Yes

Anti-hypertensive medication
Current use of any medication for hypertension
 No Yes

The following three predictors are optional for further personalization of risk assessment. When they are clinically indicated or available,

If available or indicated, enter the value.

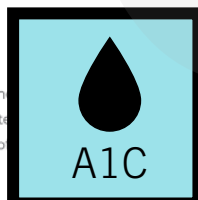
UACR (mg/g)

UACR is clinically indicated in those with chronic kidney disease and hypertension.
 No Yes



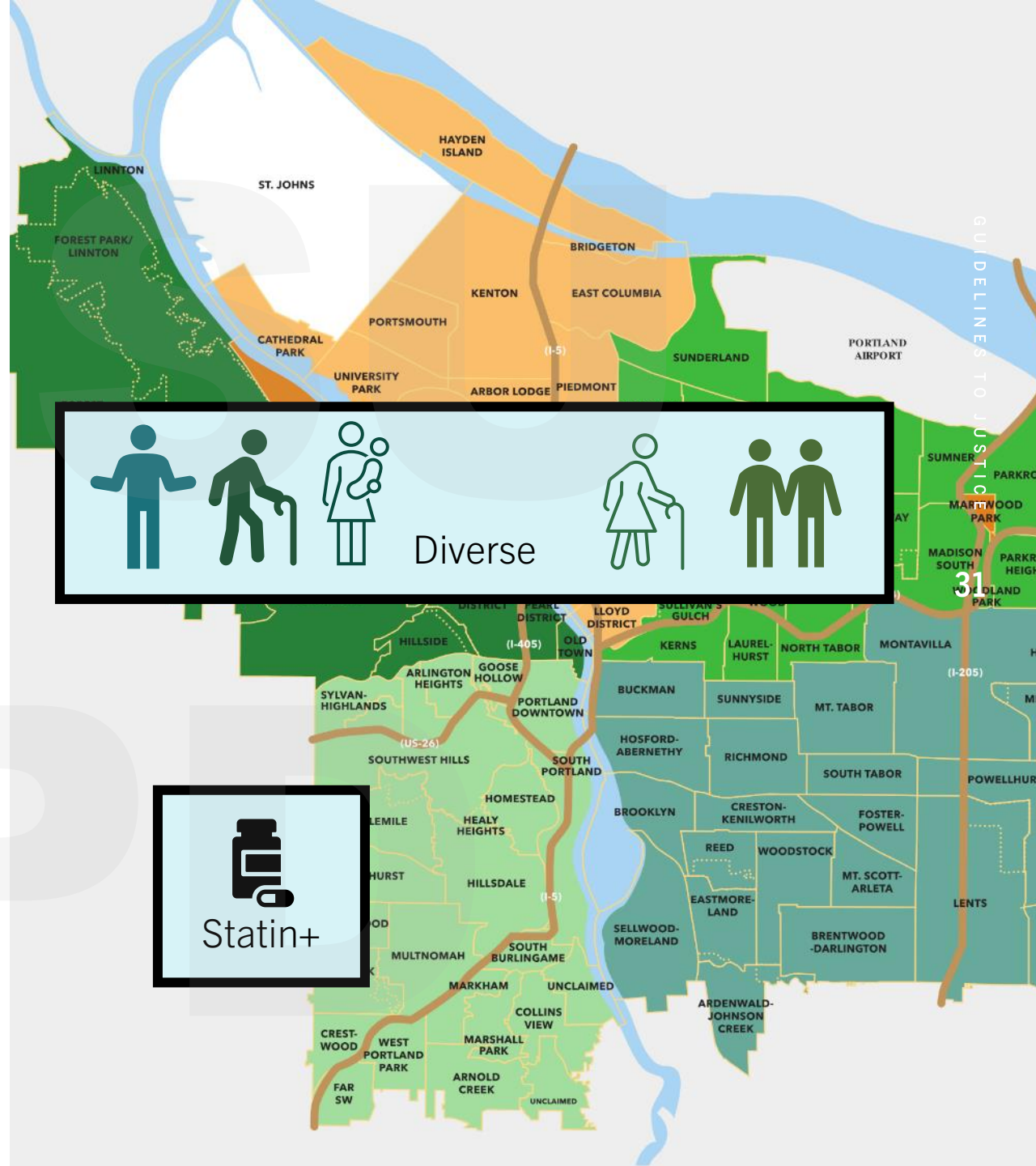
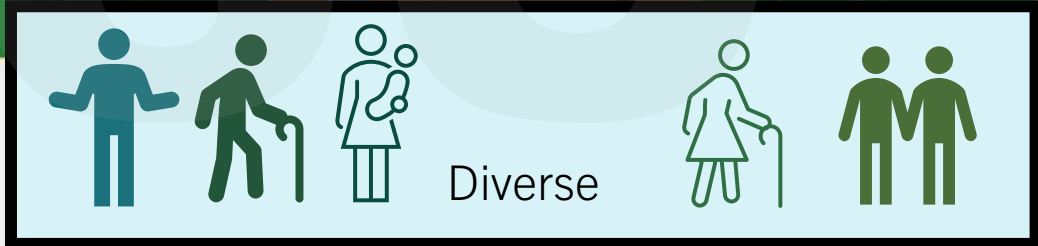
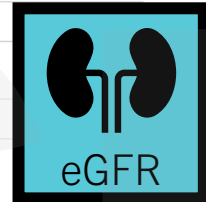
HbA1c

HbA1c is clinically indicated in those with diabetes, prediabetes, or those with history of hypertension.
 No Yes



Zip Code

valid 5-digit zip code is required for social deprivation index.
 No Yes



31

NHANES 1999 TO 2018

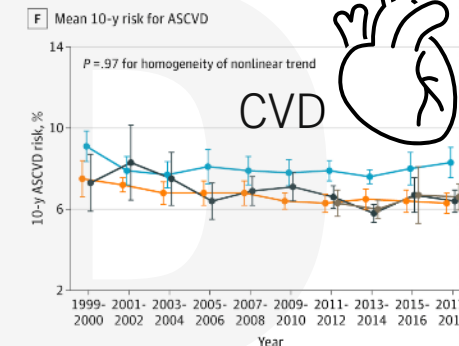
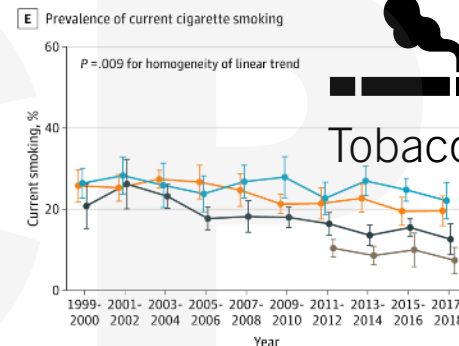
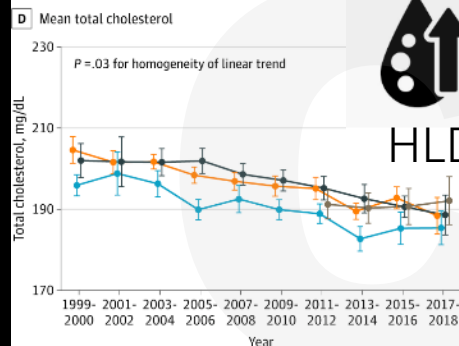
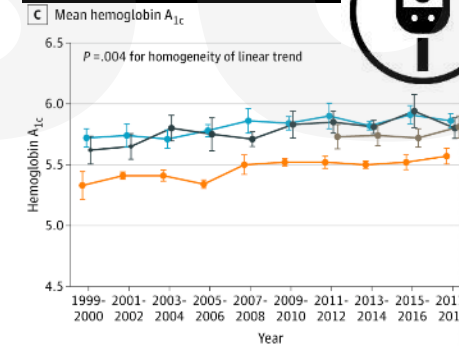
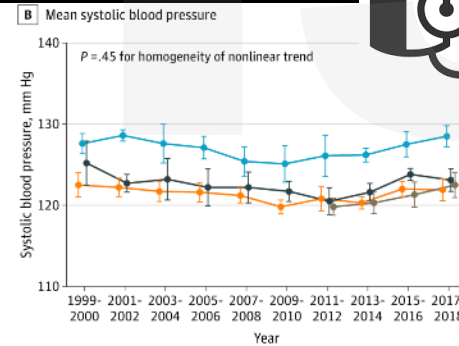
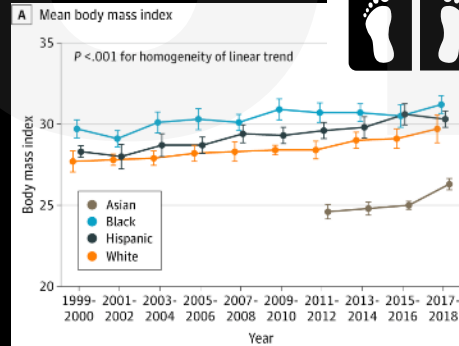
Obesity



HTN



Diabetes



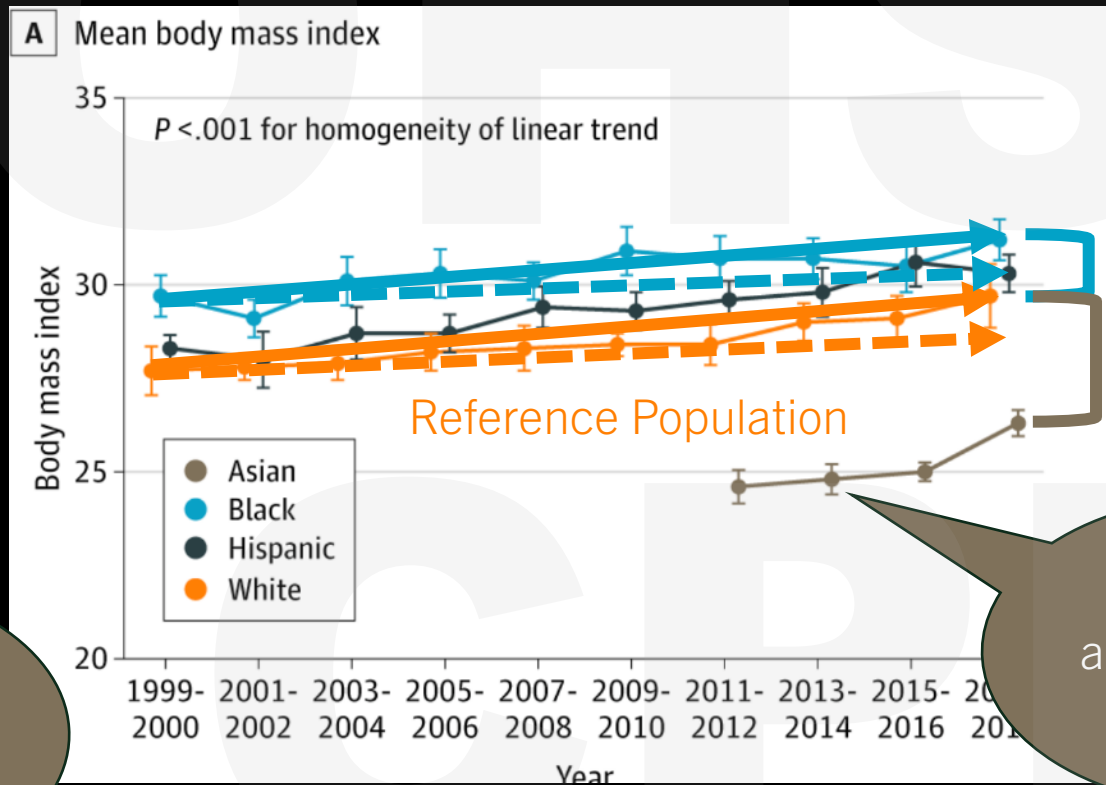
- Asian
- Black
- Hispanic
- White



NHANES 1999 TO 2018

Equity Pearls
 Confidence intervals
 Check the "n"

- Asian
- Black
- Hispanic
- White



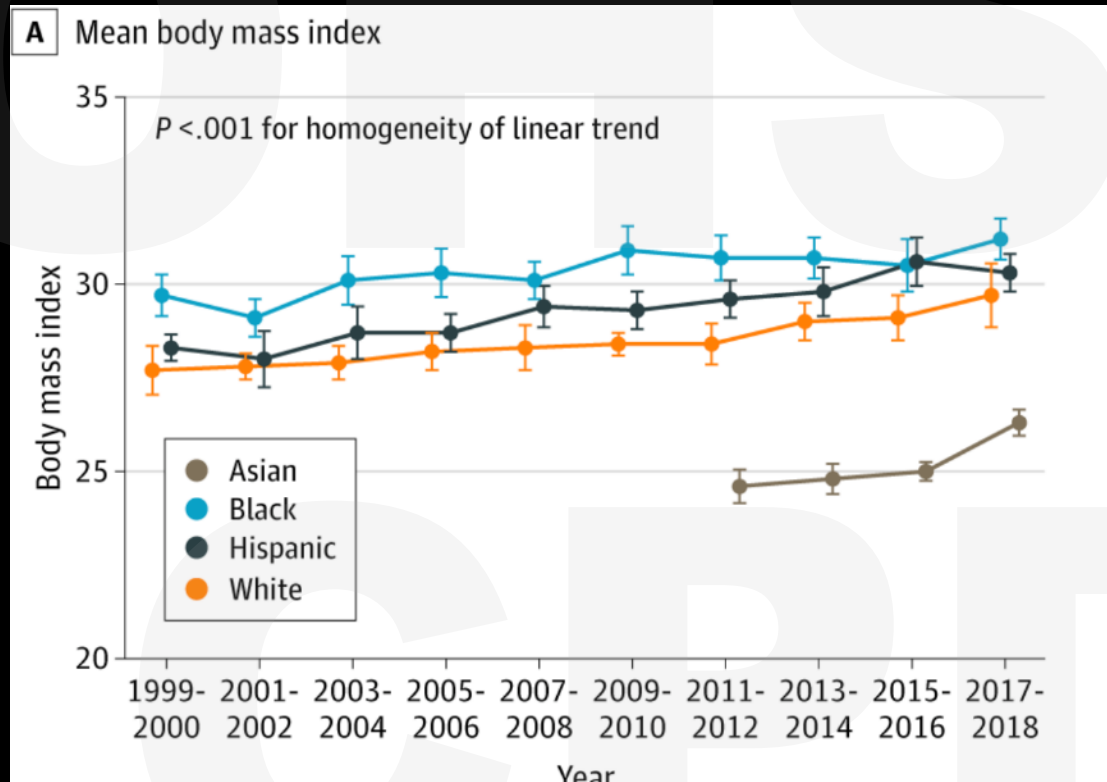
“Negative Disparity” aka “gap”

“Positive Disparity” aka “Bright Spot”

“Race is a construct without biological basis”

Emerging and/or shifting categories

NHANES 1999 TO 2018



- Asian
- Black
- Hispanic
- White

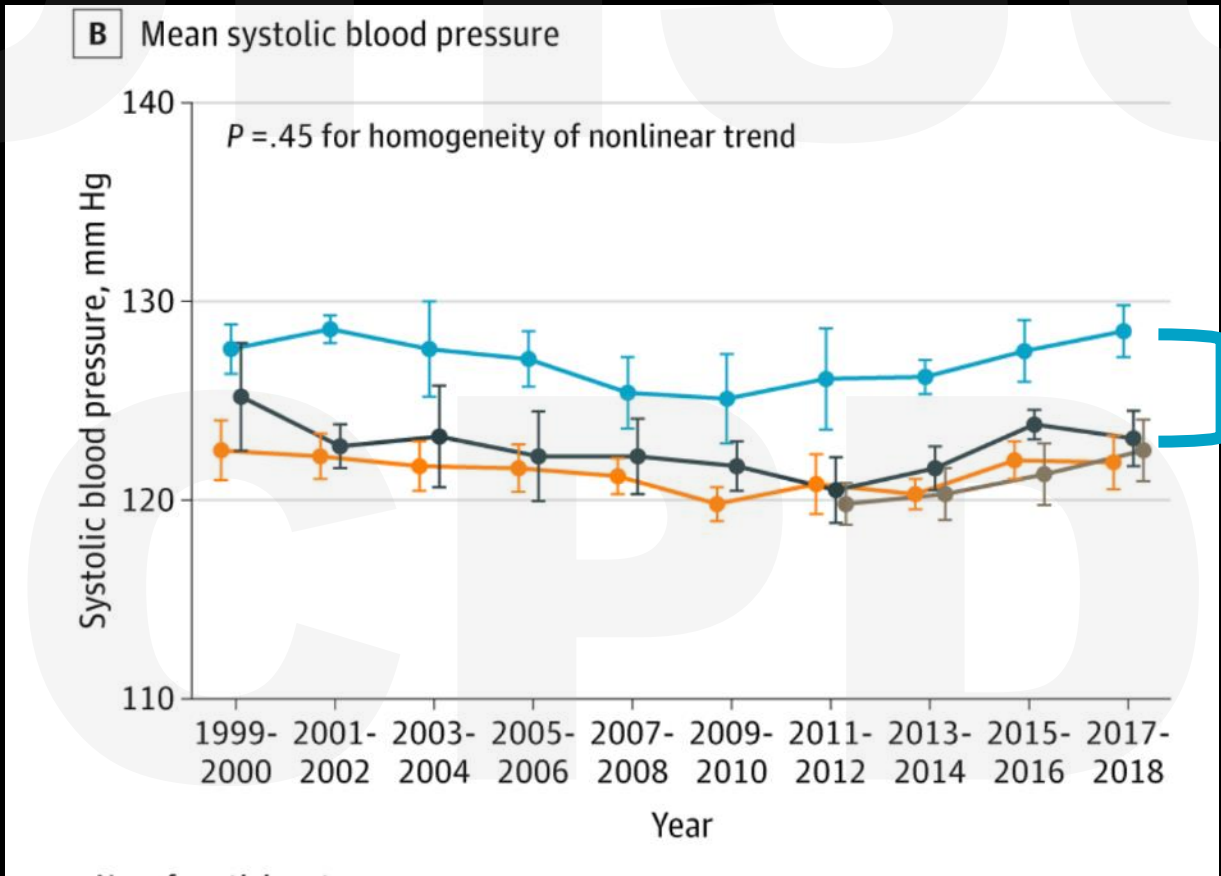
- Less than high school
- High school graduate
- Some college
- College graduate or higher

- Income-to-poverty ratio
- ≤100%
 - 100%-299%
 - 300%-499%
 - ≥500%

Trends in Cardiovascular Risk Factors in US Adults by Race and Ethnicity and Socioeconomic Status, 1999-2018. JAMA. 2021;326(13)

NHANES SBP

- Asian
- Black
- Hispanic
- White



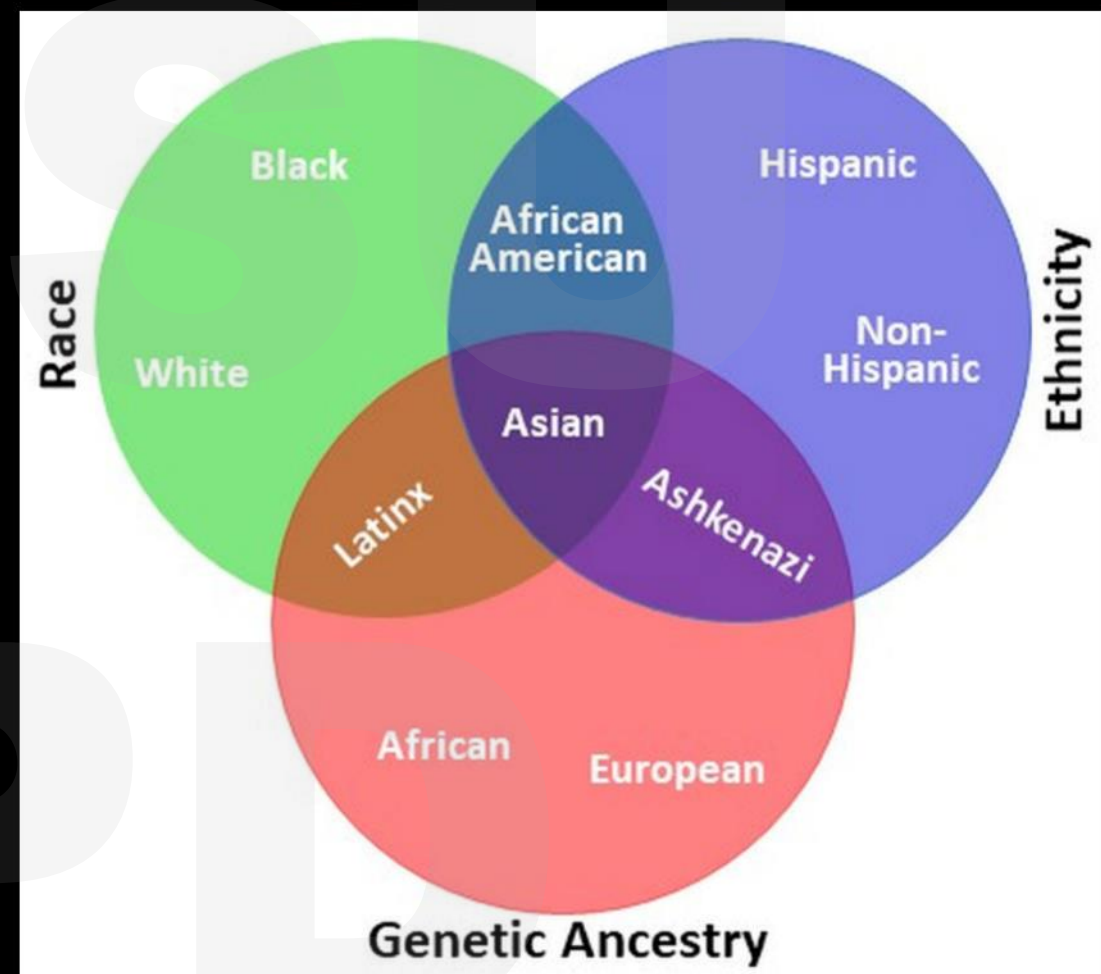
Negative Disparity

RACE, ETHNICITY, AND GENETIC ANCESTRY: SHOULD WE EVEN BE USING THESE LENSES?

- Asian
- Black
- Hispanic
- White

Race is a construct

We hope one day to be able to abandon . . . But cannot yet.



Mersha TB, Beck AF. The social, economic, political, and genetic value of race and ethnicity in 2020. Hum Genomics. 2020 Oct 15;14(1):37.
Awareness of Racial and Ethnic Bias and Potential Solutions to Address Bias With Use of Health Care Algorithms. JAMA Health Forum. 2023;4(6)

RACE AND ETHNICITY CONTINUE TO HAVE PURPOSE

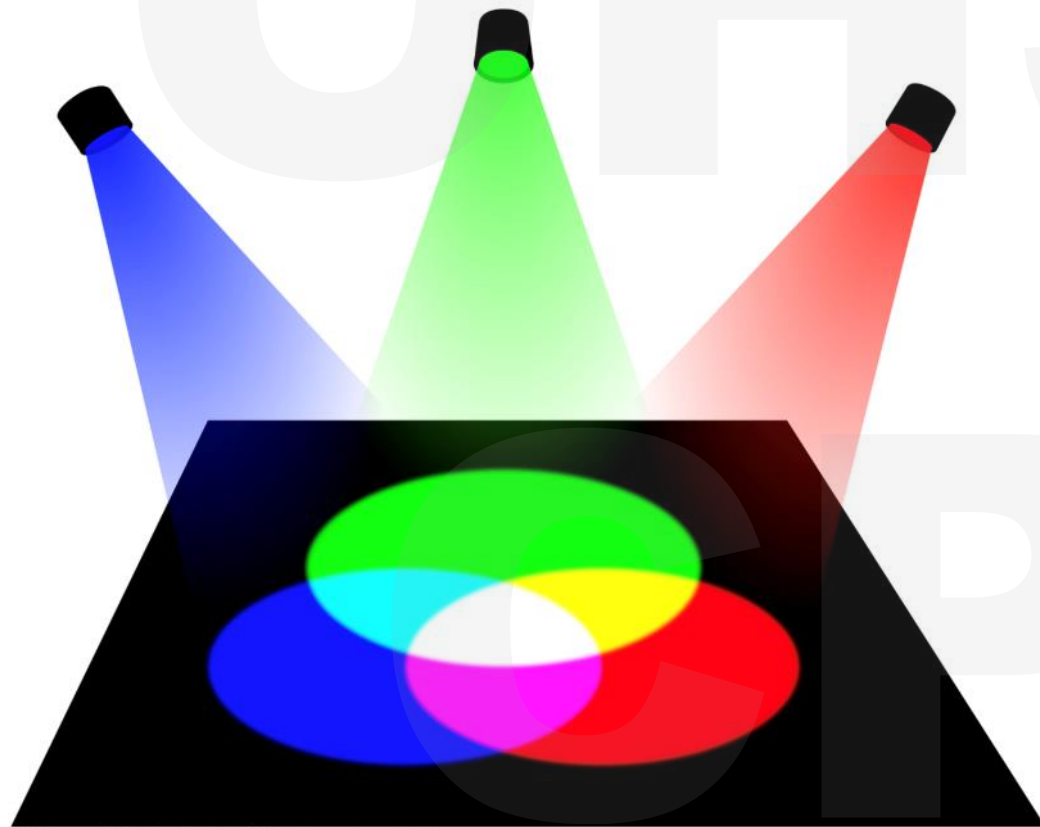
“Lenses through which to quantify and then close . . . disparities”

Mersha TB, Beck AF. The social, economic, political, and genetic value of race and ethnicity in 2020. Hum Genomics. 2020 Oct 15;14(1):37.

PCP LENS: WHOLE PERSON CARE



EQUITY LENS: INTERSECTIONALITY



This work is in the Public Domain, CC0

Table 1: Average Annual Earnings for Year-Round Full-Time Workers age 15 Years and Older by Race and Ethnicity, 2015

Racial/Ethnic Background*	Men (\$)	Women (\$)	Women's Earnings as % of White Male Earnings
All Racial/Ethnic Groups	51,212	40,742	-

EQUITY LENS: INTERSECTIONALITY

Figure 1.
Median Household Income in States by Householder Race/Hispanic Origin: 2020–2024
 (In 2024 inflation-adjusted U.S. dollars)

- ◆ All races
- White, Not Hispanic
- Black
- American Indian and Alaska Native
- Asian
- Native Hawaiian and Other Pacific Islander
- Hispanic (Any Race)



Table 1: Average Annual Earnings for Year-Round Full-Time Workers age 15 Years and Older by Race and Ethnicity, 2015

Racial/Ethnic Background*	Men (\$)	Women (\$)	Women's Earnings as % of White Male Earnings
All Racial/Ethnic Groups	51,212	40,742	-
White	57,204	43,063	75.3%
Black	41,094	36,212	63.3%
Asian American	61,672	48,313	84.5%
Hispanic or Latino	35,673	31,109	54.4%

*White alone, not Hispanic; Black alone or in combination (may include Hispanic); Asian American alone or in combination (may include Hispanic); and Hispanic/Latina/o (may be of any race).

Source: Institute for Women's Policy Research. Compilation of U.S. Census Bureau, Current Population Survey. 2016. "Historical Income Tables: Table P-38. Full-Time, Year Round Workers by Median Earnings and Sex: 1987 to 2015." <<https://www.census.gov/data/tables/time-series/demo/incomepoverty/historical-income-people.html>>

<https://openbooks.library.umass.edu/introwgss/chapter/intersectionality/>

[https://www.census.gov/library/stories/2026/01/household-income-by-race-and-state.html#:~:text=According%20to%20the%20latest%20ACS,to%20\\$55%2C157%20for%20Black%20households.](https://www.census.gov/library/stories/2026/01/household-income-by-race-and-state.html#:~:text=According%20to%20the%20latest%20ACS,to%20$55%2C157%20for%20Black%20households.)

e.g., Intersectionality

THE FIRST YEAR OF HTN TREATMENT

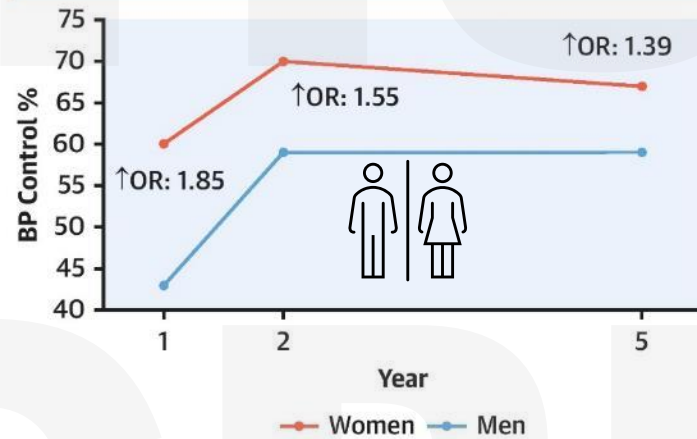
Blood Pressure Control and Maintenance in U.S.
Veterans: Roles of Sex, Race, Ethnicity, and
Deprivation. JACC Adv. 2025 Oct

CENTRAL ILLUSTRATION: Sociodemographic Differences in Blood Pressure Control Over 5 years

Sample: Post-9/11-era Veterans with VA healthcare, 2001-2023: N=1,280,441

Hypertension (HTN): ≥ 2 outpatient BP $\geq 140/90$ mm Hg, first diagnosis, or first antihypertensive fill
BP control: 140/90 mm Hg, 1, 2, and 5 years post-HTN onset
HTN prevalence: 31% (n = 398,732), median age: 37 y, 10% women, 63% non-Hispanic (NH) White

BP Control Rates Over Time by Sex and Year



Relative to men:

- Women had \uparrow BP control each year.
- Women from all race/ethnic groups generally had \uparrow control.

Gaffey AE, et al. JACC Adv. 2025;4(11):102267.

ADJUSTMENTS FOR SDOH ATTENUATE, BUT DO NOT ELIMINATE, DISPARITIES

Table 2. Differences in Cardiovascular Risk Factors by Race and Ethnicity, Adjusting for Social Determinants of Health, During 1999-2008 and 2009-2018^a

Cardiovascular risk factors	NHANES 1999-2008			NHANES 2009-2018		
	No. of participants	Age- and sex-adjusted difference	Age-, sex-, and SDOH-adjusted difference ^b	No. of participants	Age- and sex-adjusted difference	Age-, sex-, and SDOH-adjusted difference ^b
Black						
Mean body mass index ^c						
Black – White	4253/10 407	2.1 (1.8 to 2.4)	2.0 (1.7 to 2.4)	4801/9663	2.0 (1.7 to 2.4)	1.8 (1.5 to 2.1)
Hispanic – White	5280/10 407	0.7 (0.3 to 1.1)	0.9 (0.5 to 1.2)	5535/9663	1.2 (0.9 to 1.5)	1.2 (0.8 to 1.5)
Mean systolic blood pressure, mm Hg						
Black – White	3516/9100	5.5 (4.7 to 6.4)	4.6 (3.8 to 5.4)	4694/9571	6.4 (5.6 to 7.2)	5.3 (4.5 to 6.1)
Hispanic – White	4585/9100	1.7 (0.7 to 2.7)	0.2 (-0.8 to 0.4)	5493/9571	1.7 (1.0 to 2.4)	0.2 (-0.5 to 0.9)
Mean hemoglobin A _{1c} , %						
Black – White	3991/10 295	0.4 (0.3 to 0.4)	0.3 (0.3 to 0.4)	4801/9663	0.4 (0.3 to 0.4)	0.3 (0.3 to 0.4)
Hispanic – White	5207/10 295	0.3 (0.2 to 0.3)	0.2 (0.2 to 0.3)	5535/9663	0.3 (0.3 to 0.4)	0.3 (0.2 to 0.3)
Mean total cholesterol, mg/dL						
Black – White	3933/10 194	-5.6 (-7.3 to -3.9)	-4.4 (-6.3 to -2.5)	4694/9571	-5.9 (-7.8 to -4.1)	-4.3 (-6.0 to -2.5)
Hispanic – White	5167/10 194	0.1 (-1.7 to 1.9)	0.4 (-1.5 to 2.3)	5493/9571	0.5 (-1.8 to 2.8)	1.3 (-1.1 to 3.6)
Prevalence of current cigarette smoking, %						
Black – White	4388/10 697	-0.5 (-2.9 to 1.8)	-8.0 (-10.0 to -5.9)	5183/9973	3.8 (1.7 to 6.0)	-4.0 (-5.9 to -2.1)
Hispanic – White	5412/10 697	-6.1 (-9.1 to -3.1)	-17.5 (-20.6 to -14.4)	5740/9973	-6.1 (-8.3 to -3.9)	-16.6 (-18.9 to -14.3)
Mean 10-y risk of atherosclerotic cardiovascular disease, % ^d						
Black – White	2855/7633	1.4 (1.0 to 1.7)	-0.3 (-0.6 to 0.1)	3905/7828	2.0 (1.7 to 2.4)	0.7 (0.3 to 1.0)
Hispanic – White	4054/7633	0.8 (0.3 to 1.3)	-1.3 (-1.9 to -0.7)	4752/7828	0.7 (0.3 to 1.0)	-0.7 (-1.1 to -0.4)

Abbreviation: NHANES, National Health and Nutrition Examination Survey.

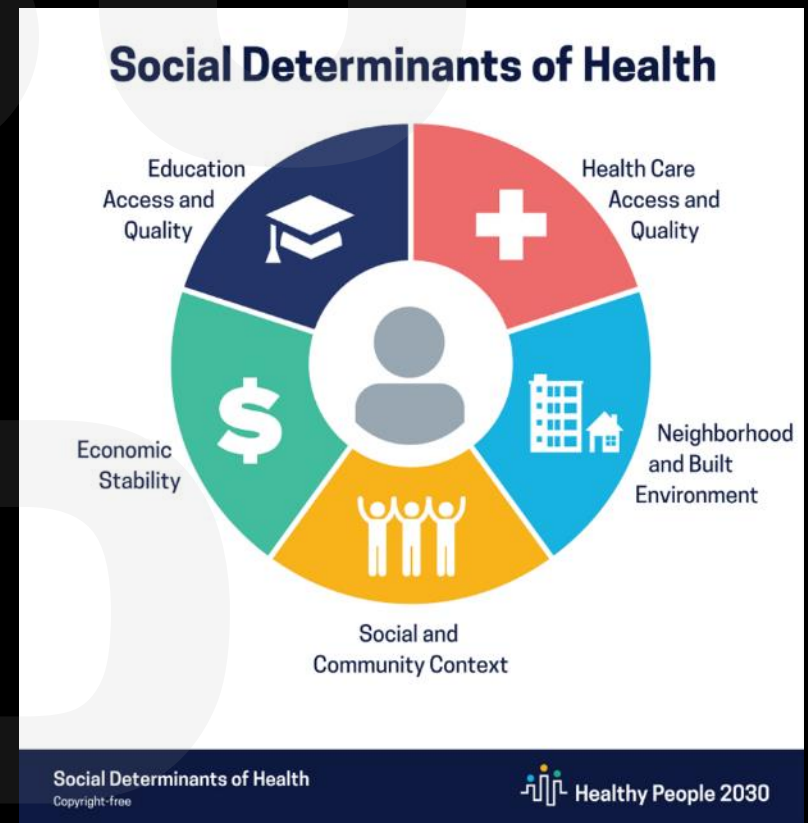
SI conversion factor: To convert total cholesterol to millimoles per liter, multiply by 0.0259.

^a Racial and ethnic differences in cardiovascular risk factors were defined as mean values in Black participants minus mean values in White participants or mean values in Hispanic participants minus mean values in White participants. NHANES participants with complete data for cardiovascular risk factors were included in the analysis. Absolute values on which this table is based can be found in eTable 5 in the Supplement. Additional data on obesity, hypertension, diabetes, high total cholesterol, and self-reported history of cardiovascular disease can be found in eTable 6 and eTable 7 in the Supplement.

^b Social determinants of health (SDOH) included education (less than high school, high school graduate, some college, or college graduate or higher), family income-to-poverty ratio, home ownership, employment (employed, student, retired, or unemployed), health insurance (private, government, or none), and regular access to health care facility.

^c Calculated as weight in kilograms divided by height in meters squared.

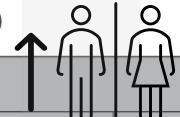
^d The 10-year risk of atherosclerotic cardiovascular disease was calculated using the Pooled Cohort Equations among individuals without a self-reported history of cardiovascular disease. The probability of developing atherosclerotic cardiovascular disease over 10 years ranged from 0% to 100%.



He J, Zhu Z, Bundy JD, Dorans KS, Chen J, Hamm LL. Trends in Cardiovascular Risk Factors in US Adults by Race and Ethnicity and Socioeconomic Status, 1999-2018. JAMA. 2021;326(13):1286–1298.

HYPERTENSION: COMMON, MORBID AND COSTLY

Table 5. Prevalence of Hypertension* Among US Adults Aged 18 to 80 Years, 2017 to 2020



Demographic group	Prevalence	
	Men	Women
Overall	49.5% (59.0 million)	43.9% (56.3 million)
Age groups, y		
18-29	20.3%	9.0%
30-44	40 39.6%	40% 23.7%
45-59	50 57.4%	50% 52.5%
60-74	70 70.7%	70% 71.4%
75-80	80 83.7%	80% 84.8%

HYPERTENSION: COMMON, MORBID AND COSTLY

2025
AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASP
C/NMA/PCNA/SGIM Guideline for the Prevention,
Detection, Evaluation and Management of High Blood
Pressure in Adults

Table 5. Prevalence of Hypertension* Among US Adults Aged 18 to 80 Years, 2017 to 2020

Demographic group	Prevalence	
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Overall	49.5% (59.0 million)	43.9% (56.3 million)
Age groups, y		
18-29	20.3%	9.0%
30-44	40	40%
45-59	50	50%
60-74	70	70%
75-80	80	80%
Racial and ethnic groups (age-adjusted)		
NH White	47.0%	39.0%
NH Black	56.8%	56.7%
NH Asian	49.8%	39.1%
Hispanic	50.4%	36.3%
Other	50.7%	47.9%

*Hypertension defined as diagnosed hypertension, BP \geq 130/80 mm Hg, or receiving antihypertensive therapy. Derived from NHANES.⁹

BP indicates blood pressure; and NH, non-Hispanic.

WHY IS HTN MORE PREVALENT IN BLACK PEOPLE?

- 6897 people without HTN, assessed median 9.4 yrs later for incident HTN.
- 26% black. 55% women.

45



Audience prediction:

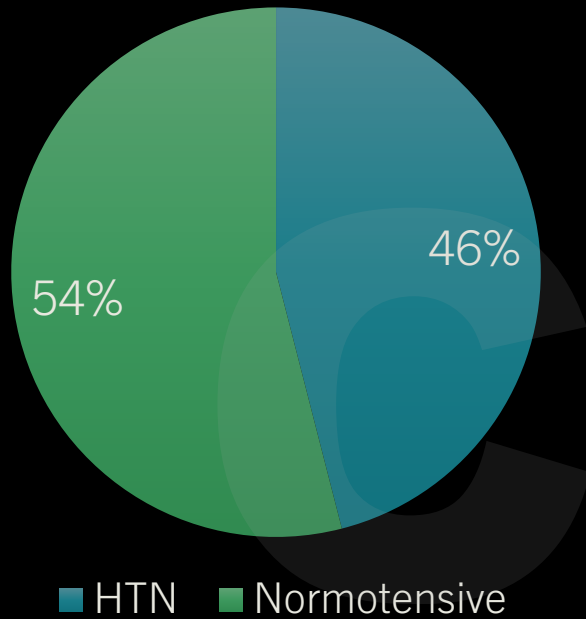
Did Black or White pts develop more HTN?

What was the single biggest factor of the 12 studied?

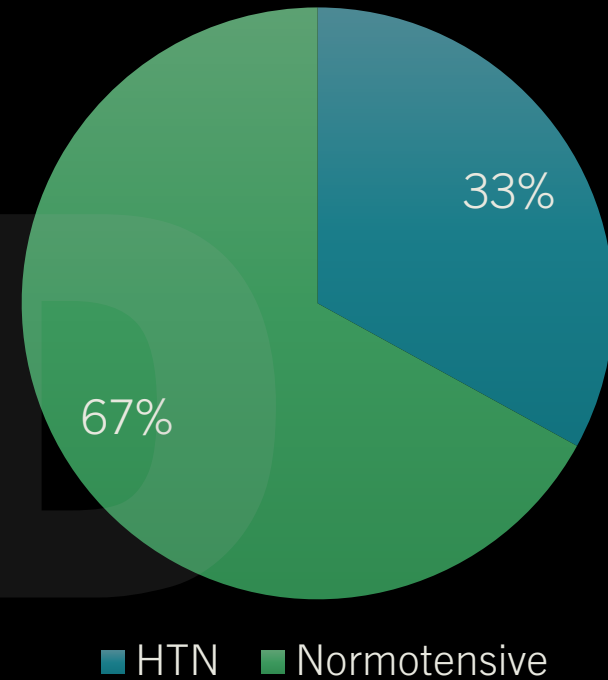
Association of Clinical and Social Factors With Excess Hypertension Risk in Black Compared With White US Adults. JAMA. 2018;320(13)

HEALTH DISPARITY: HTN

Black People Who Developed Hypertension



White People Who Developed Hypertension



**WHY IS HTN
MORE
PREVALENT
IN BLACK
PEOPLE?**

Factor	Attributable Risk c/w White	
	Black Men	Black Women
Southern Diet		
Higher sodium to potassium ratio		
High School or Less		
BMI		
Larger waist		
Less adherence to the DASH diet		
Income level of \$35,000 or less		
Post hoc – less mobility		
Post hoc – low-quality neighborhood		

Association of Clinical and Social Factors With Excess Hypertension Risk in Black Compared With White US Adults. JAMA. 2018;320(13):1338–1348

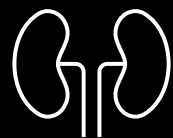
THE MEANING OF FOOD



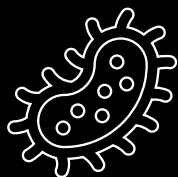
Stroke



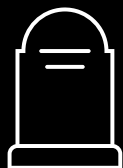
CVD



CKD and ESRD



Sepsis



Cancer mortality



Dementia



INTERESTING NON- MEDIATORS

Stress is associated w HTN, but no more so in black than white

Perceived Stress Scale

A more precise measure of personal stress can be determined by using a variety of instruments that have been designed to help measure individual stress levels. The first of these is called the **Perceived Stress Scale**.

The Perceived Stress Scale (PSS) is a classic stress assessment instrument. The tool, while originally developed in 1983, remains a popular choice for helping us understand how different situations affect our feelings and our perceived stress. The questions in this scale ask about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way; rather indicate the alternative that seems like a reasonable estimate.

For each question choose from the following alternatives:

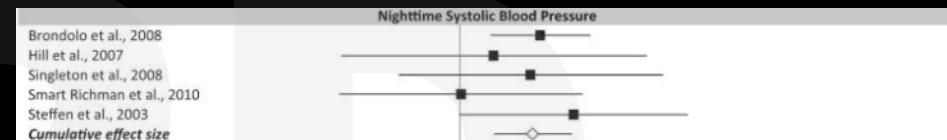
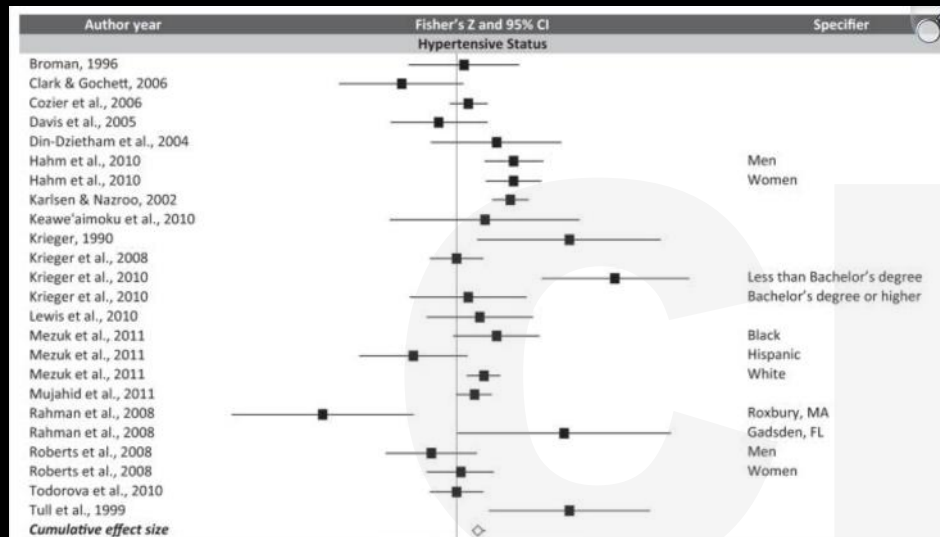
0 - never 1 - almost never 2 - sometimes 3 - fairly often 4 - very often

- _____ 1. In the last month, how often have you been upset because of something that happened unexpectedly?
- _____ 2. In the last month, how often have you felt that you were unable to control the important things in your life?
- _____ 3. In the last month, how often have you felt nervous and stressed?
- _____ 4. In the last month, how often have you felt confident about your ability to handle your personal problems?
- _____ 5. In the last month, how often have you felt that things were going your way?
- _____ 6. In the last month, how often have you found that you could not cope with all the things that you had to do?
- _____ 7. In the last month, how often have you been able to control irritations in your life?
- _____ 8. In the last month, how often have you felt that you were on top of things?
- _____ 9. In the last month, how often have you been angered because of things that happened that were outside of your control?
- _____ 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

EVERYDAY DISCRIMINATION CORRELATES WITH HTN

HYPERTENSIVE STATUS

NIGHTTIME BP



Perceived racial discrimination and hypertension: a comprehensive systematic review. *Health Psychol.* 2014 Jan;33(1):20-34.

From darkness, we come
to wait until our
eyes begin to see.

Source: "Be the Change: Poems, Prayers & Meditations
for Peacemakers and Justice Seekers"
By Stephen M. Shick



Circulation

Volume 146, Issue 19, 8 November 2022; Pages e260-e278

<https://doi.org/10.1161/CIR.0000000000001096>



AHA SCIENTIFIC STATEMENT

Leveraging Implementation Science for Cardiovascular Health Equity: A Scientific Statement From the American Heart Association

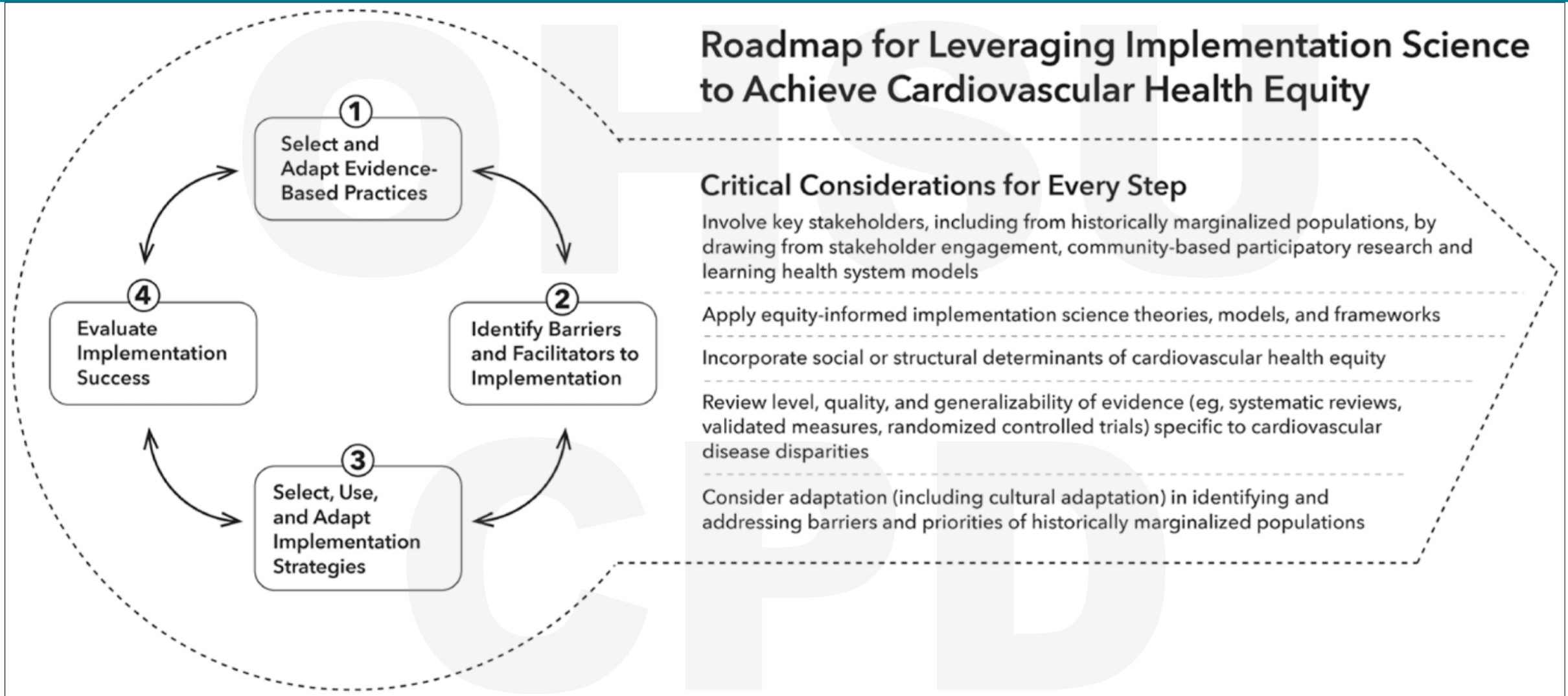


Figure. Roadmap for leveraging implementation science to achieve cardiovascular health equity and critical equity considerations for every step.

POLICY: MOVING TO OPPORTUNITY

An official website of the United States government [Here's how you know](#)

usa.gov Español

All topics and services The U.S. and its government Government benefits Immigration and U.S. citizenship Money and credit Taxes Travel

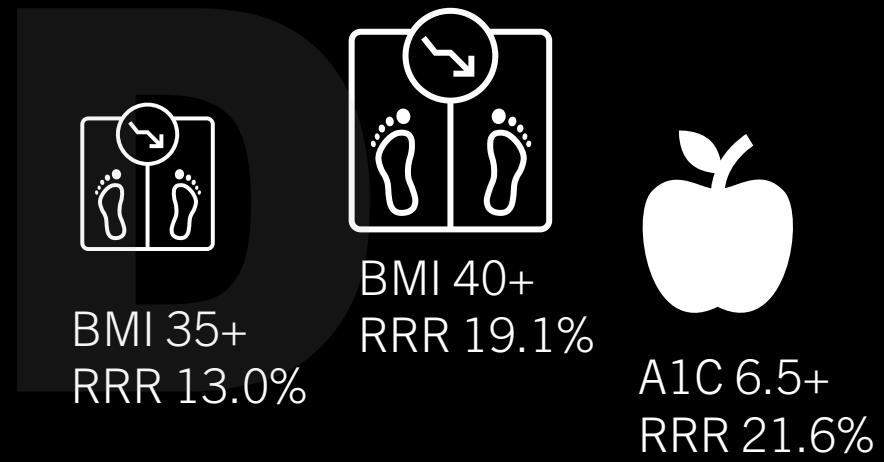
[Home](#) > [The U.S. and its government](#) > [A-Z index of U.S. government departments and agencies](#) >
U.S. Department of Housing and Urban Development

The U.S. and its government

- Buying from the U.S. government
- U.S. facts and figures
- A-Z index of U.S. government departments and agencies**

U.S. Department of Housing and Urban Development (HUD)

The Department of Housing and Urban Development (HUD) administers programs that provide housing and community development assistance. The Department also works to ensure fair and equal housing opportunity for all.



RCT: Voucher usable only in neighborhoods with <10% poverty rate

Association Between Rental Assistance Programs and Hemoglobin A1c Levels Among US Adults. JAMA Netw Open. 2022

Policy: Built Environment





Portland will begin enforcing its camping ban today. What does that mean? - OPB

[Visit >](#)



URBAN

RURAL





FINLAND OBSERVATIONAL STUDY



Stroke



OA

19



Diabetes

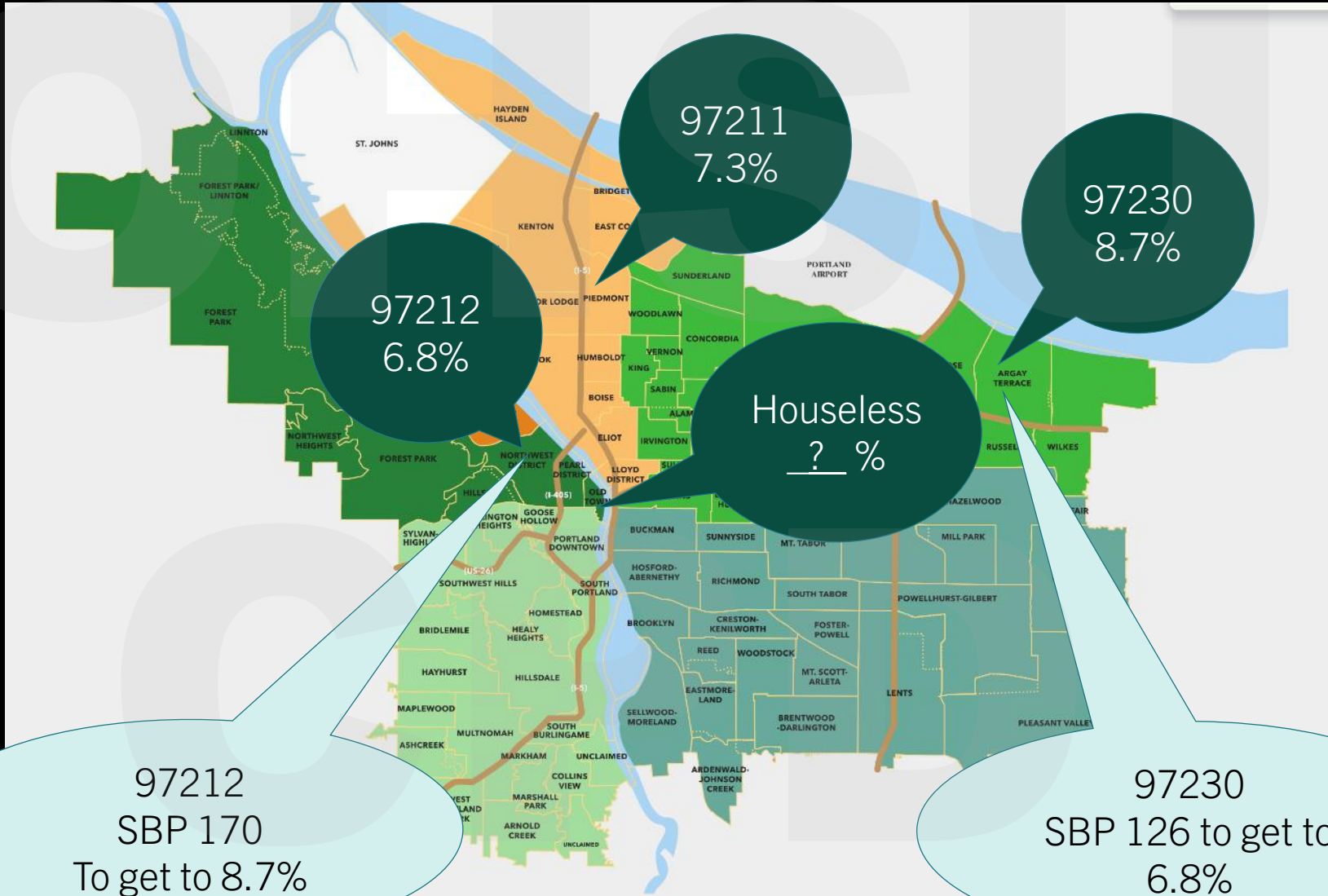
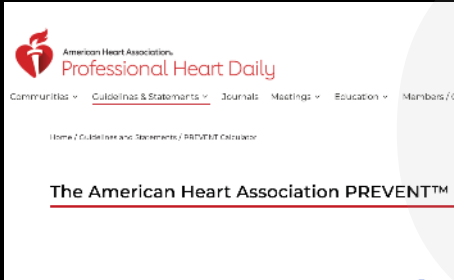
Modifications to residential neighbourhood characteristics and risk of 79 common health conditions: a prospective cohort study. *Lancet Public Health*. 2021 Jun;6(6)

PREVENT CASE STUDY

7.5%



60M TC 201, HDL 40 BMI 33



UACR NA

A1C 7.1

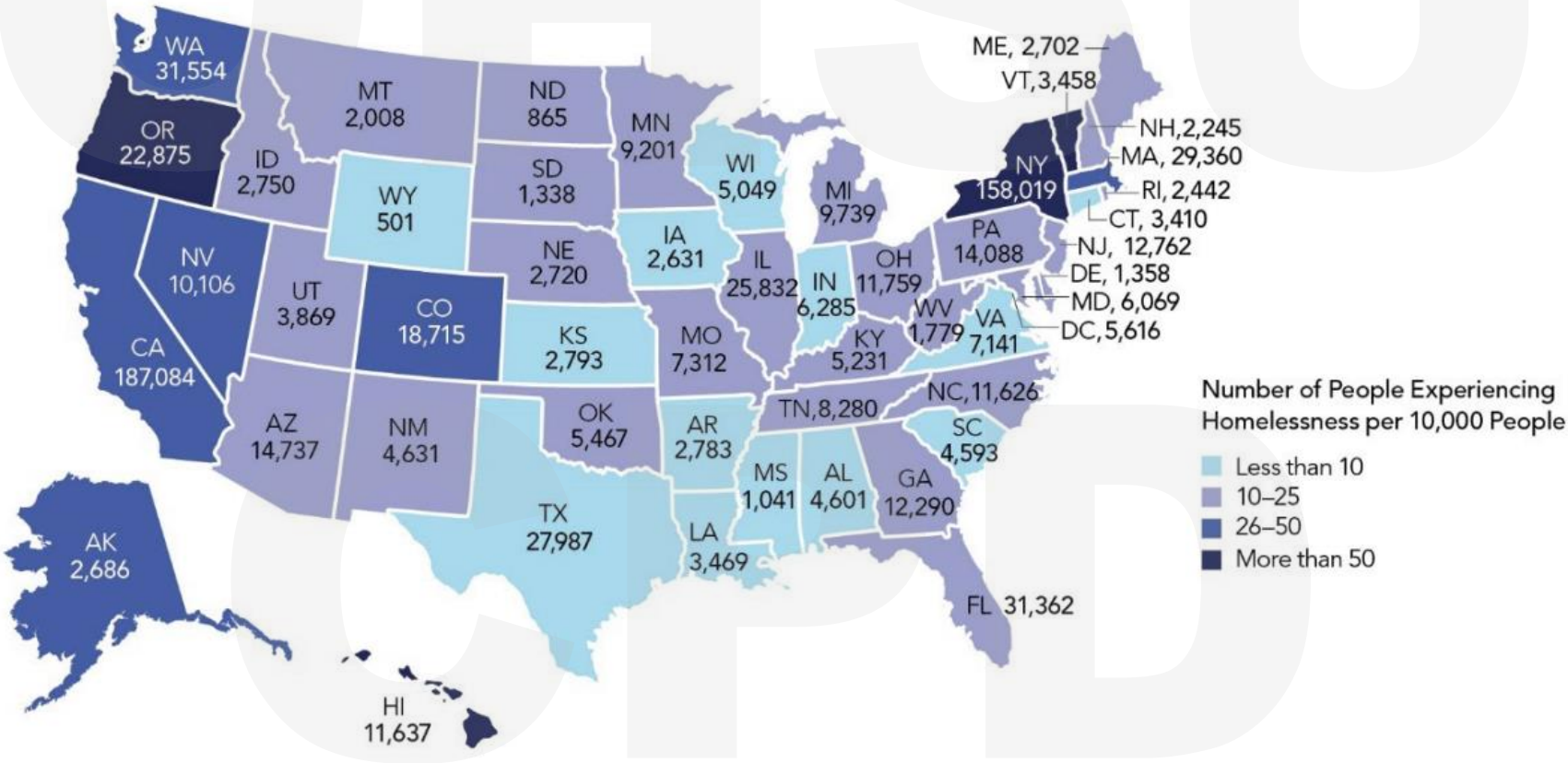
EGFR 80

SBP 148

Zip Code

1.2 State-Level Estimates of People Experiencing Homelessness

Exhibit 1-9: Estimates of People Experiencing Homelessness by State, 2024



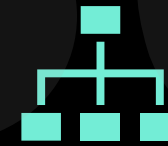
INTERVENTIONS FOR EQUITY



PROVIDER

- Recognize the factors contributing to htn
- Single Pill Combination, #90
- PREVENT
- Build relationship
- Shape system

SYSTEMS



- Built environment
- Microlearning
- Community leaders
- Place-based interventions
- Team-based care



2 MORE CASES


PMG Pt: 8 months
PharmD
Salt, exercise,
caffeine

Myth buster: "This
med is not good for
me bc I'm black"

Every med switch
costs something
(trust, time, \$\$)

Autonomy is the #1
factor in behavior
change models

Solution for rural
health care —
PharmD



CUT YOUR PRESSURE TOO

Smoking

Fried Food

Drinking

Exercise



Eric Muhammad (left) stands next to barbershop customer (seated) and a visiting pharmacist (right). The logo on the gray polo shirts shows a blood pressure cuff wrapped around a barber pole with the caption "Cut Your Pressure Too." *Photo credit: Smidt Heart Institute at Cedars-Sinai Medical Center*

OF

MICROLEARNING INTERVENTIONS

1 year outcomes

Intervention: 68% BP <130/80

Control barber shops: 11%

Circulation Volume 146, Number 19

<https://doi.org/10.1161/CIR.0000000000001096>



Eric Muhammad (left), owner of A New You Barbershop in Inglewood, Calif., prepares to measure the blood pressure of long-time customer Marc Sims. *Photo credit: Smidt Heart Institute at Cedars-Sinai Medical Center.*

OF

MICROLEARNING INTERVENTIONS

Trusted community settings

Brief educational contacts

Links to care

C



The efficacy of microlearning in improving self-care capability: a systematic review of the literature. Public Health. 2020 Sep;186:286-296.

Circulation Volume 146, Number 19 <https://doi.org/10.1161/CIR.0000000000001096>



Maji Rising is reimagining healthcare access by turning it into a community-family reunion.

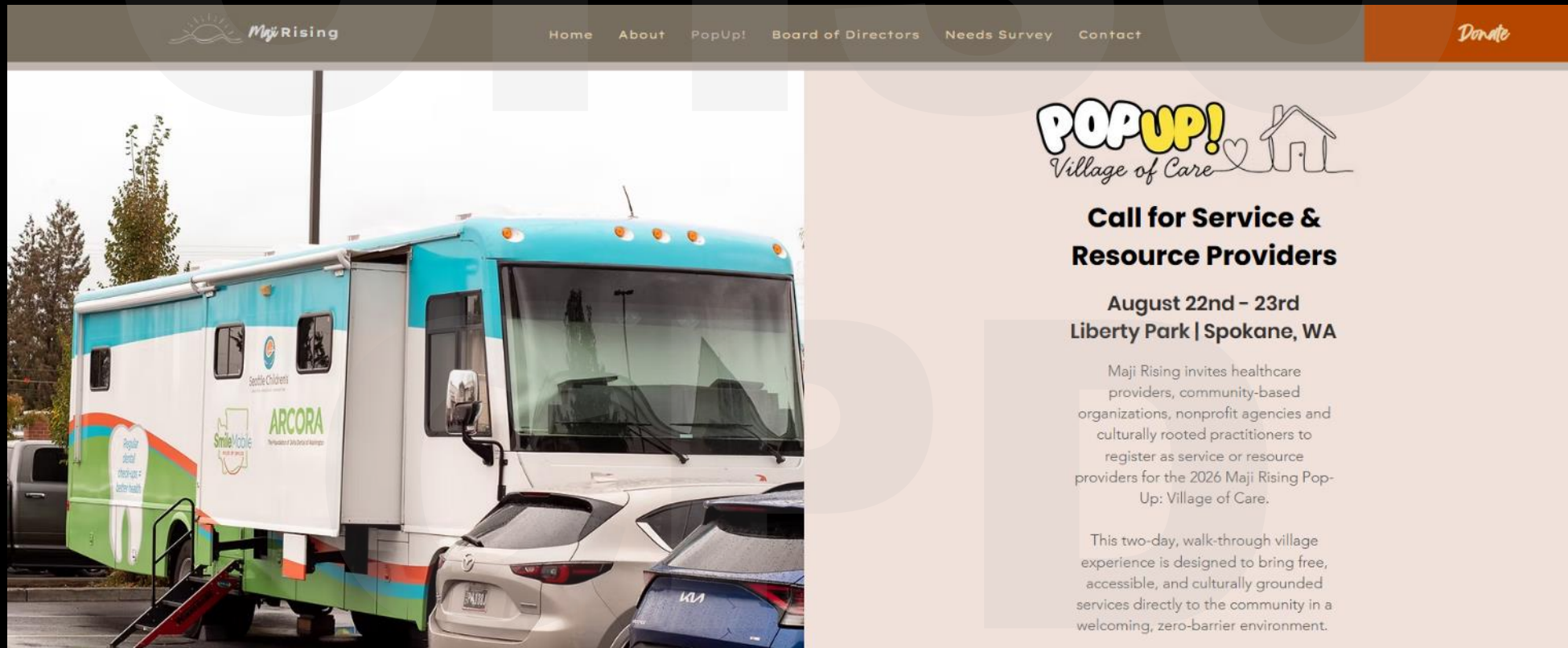
The 2025 Block Party

Our service providers and partner organizations were the heart of this gathering. Each one brought their unique expertise, culture, and care to make wellness accessible, joyful, and rooted in community.

It was about more than check-ups and resources—it's about building trust, closing gaps, and celebrating health as a shared journey.



VILLAGE OF CARE AUG 22-23, 2026



The screenshot shows the website for Maji Rising. The navigation bar includes links for Home, About, PopUp!, Board of Directors, Needs Survey, and Contact, along with a prominent orange 'Donate' button. The main content area features a photograph of a mobile health unit on the left, which is white with blue and green accents and displays logos for Seattle Children's, ARCORA, and Smile Mobile. To the right of the photo is a call for service and resource providers for the August 22nd-23rd Village of Care event at Liberty Park in Spokane, WA. The text invites healthcare providers, community-based organizations, nonprofit agencies, and culturally rooted practitioners to register as service or resource providers for the 2026 Maji Rising Pop-Up: Village of Care. It describes the event as a two-day, walk-through village experience designed to bring free, accessible, and culturally grounded services directly to the community in a welcoming, zero-barrier environment.

MISSION, VALUES, VISION, PROMISE



MISSION

As expressions of God's healing love, witnessed through the ministry of Jesus, we are steadfast in serving all, especially those who are poor and vulnerable.



VALUES

Compassion • Dignity • Justice • Excellence • Integrity



VISION

Health for a Better World



PROMISE

"Know me, care for me, ease my way."

PROVIDENCE DIVERSITY, EQUITY & INCLUSION STRATEGIC PLAN 2023-2025

You Belong at Providence. Advancing world-class health with human connection through our shared commitment to diversity, equity & inclusion



PROMOTE DIVERSITY, EQUITY & INCLUSION

1. Cultivate a caregiver experience that attracts and retains a diverse workforce where everyone finds inclusion and belonging
2. Develop pathways & partnerships to build a more diverse workforce that reflects the communities we serve
3. Activate, empower & align diversity councils and caregiver resource groups to serve as agents of change for diversity, equity and inclusion

Cascaded Metric:
Caregiver Diversity

Diverse Caregiver Turnover



CARE FOR EACH OTHER & OUR COMMUNITIES

1. Demonstrate an unwavering commitment to growing a culture of inclusion and belonging that is anchored by our Mission and values
2. Partner with physicians, providers & caregivers to deliver compassionate, whole person care that respects the uniqueness of each patient

Cascaded Metric:
Caregiver Inclusion Index

Cascaded Metric:
Provider Inclusion Index



BE COURAGEOUS CHAMPIONS OF CHANGE

1. Increase and foster diversity, equity, inclusion and access in leadership and governance to lead by example and serve as a voice of change
2. Create economic empowerment via diversified partnerships, investments & purchasing practices
3. Build and sustain a culture of shared accountability & transparency that strives to end systemic racism

Cascaded Metric:
Leadership Representation

Supplier Diversity

PMG HEALTH EQUITY GRANT



In 2020, Providence Enterprise Population Health made an investment of \$50 million to support efforts across the organization to identify and eliminate health disparities



The PMG Medical Home team was awarded funds to address disparities in diabetes and hypertension control between Black patients and their White counterparts at 7 Eastside clinics



Frye, Abby (she/her)

Clinical Pharmacy Specialist • 5011 PMG N Pharmacy Admin



PMG HEALTH EQUITY GRANT GOALS

1

Achieve equitable outcomes in diabetes and hypertension control among Black patients in PMG Oregon

2

Improve the health care experience among Black patients at seven grant clinics

3

Improve the caregiver experience among Black caregivers at seven grant clinics

4

Increase caregiver knowledge and confidence in cultural humility and responsiveness

5

Utilize reporting analytics to measure health equity

6

Increase Providence's authentic presence and engagement within the Black community



Frye, Abby (she/her)

Clinical Pharmacy Specialist • 5011 PMG N Pharmacy Admin



PMG HEALTH EQUITY GRANT COMPONENTS



Concierge

- Clinic-based PSS or MA who identifies as Black
- Through representation, the Concierge strives to build rapport and establish a trusting relationship with Black patients and provides support in addressing barriers impacting their health



Centralized Support

- Care management-based CCC
- Tracks the following data to share with the Concierge:
 - Clinical measures
 - Scheduled appointments
 - Social determinants of health screening results
 - Community Resource Desk referrals
 - Connections made to ancillary teams



Community Health Worker

- Care Management-based CHW who identifies as Black
- Provides support for more complex patients in the community setting
- Helps re-engage patients not currently engaged with primary care

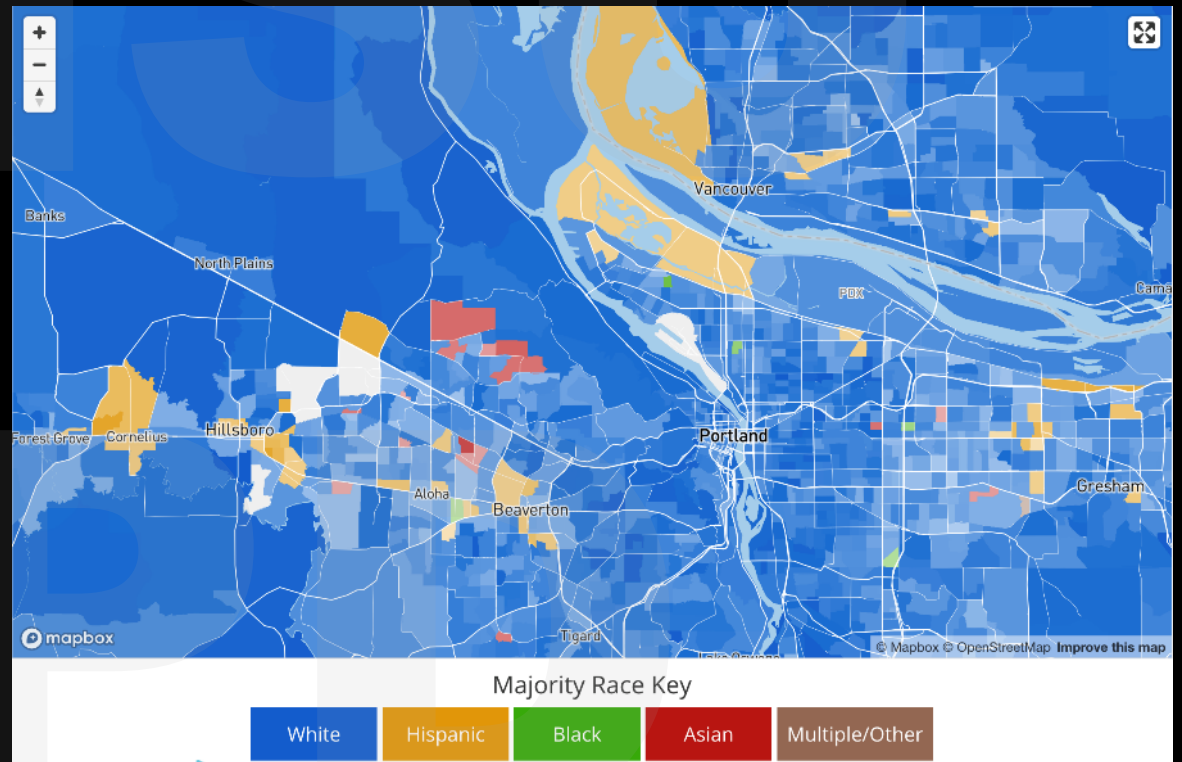
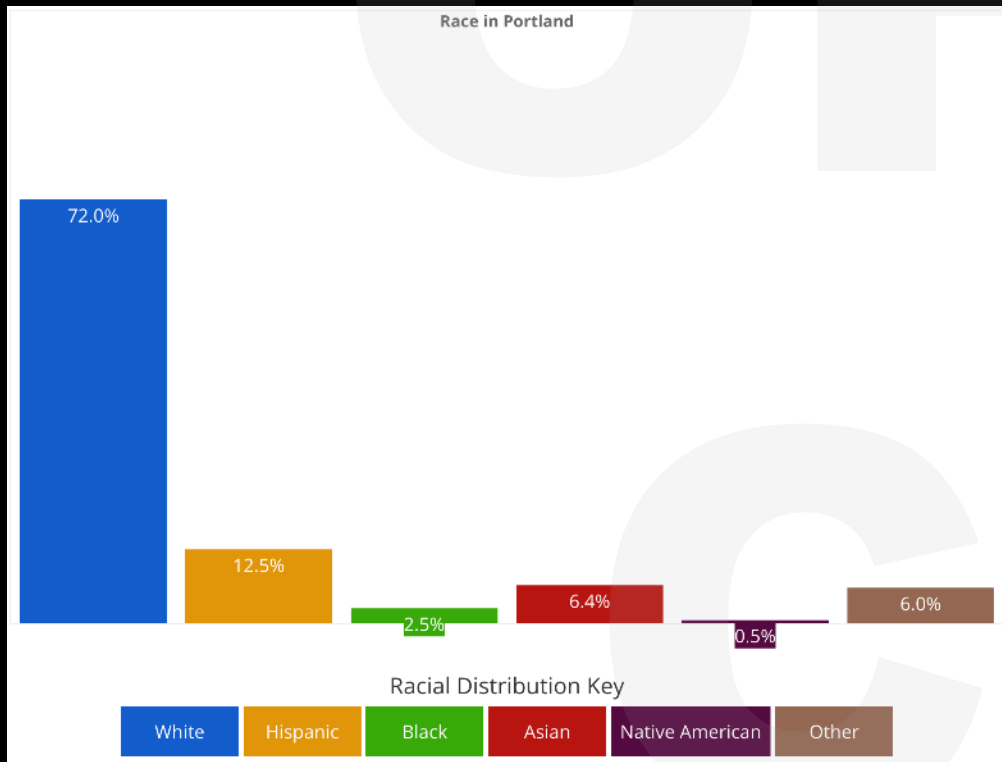


Frye, Abby (she/her)

Clinical Pharmacy Specialist • 5011 PMG N Pharmacy Admin

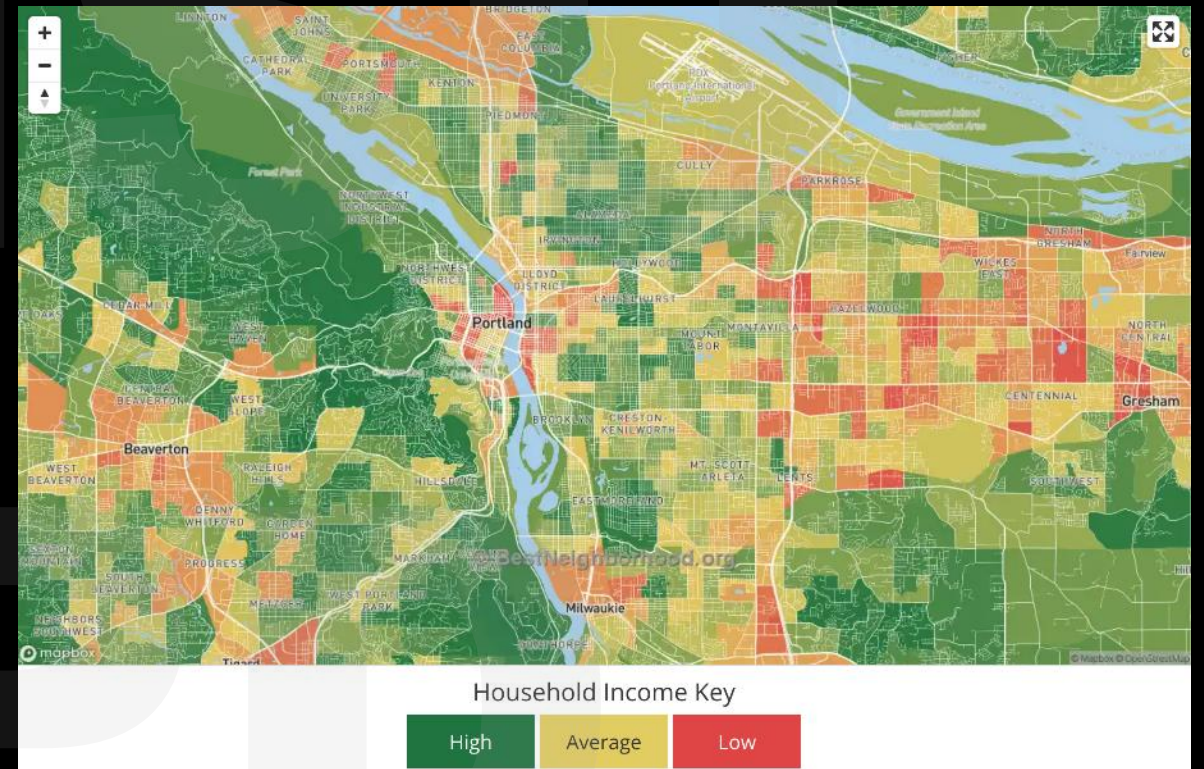
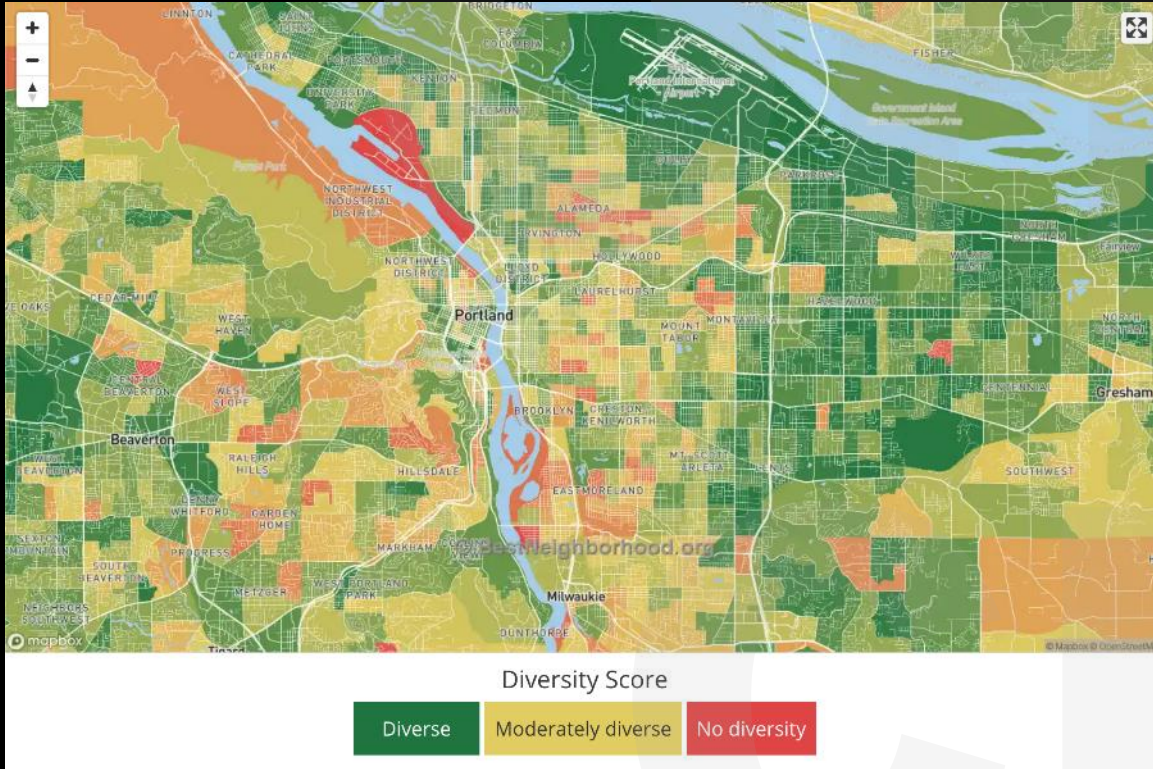


EQUITY PEARL: GEOGRAPHY

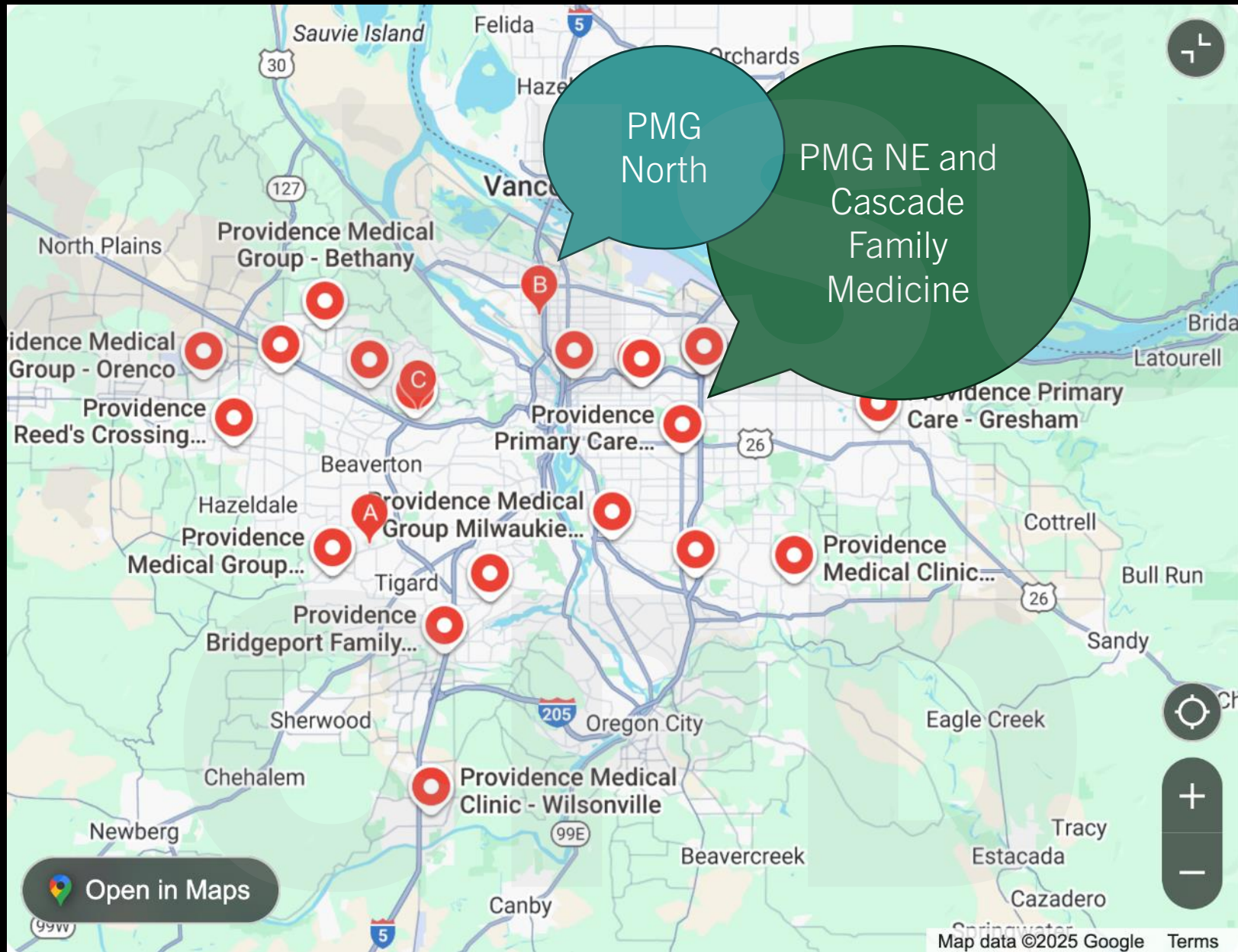


<https://bestneighborhood.org/race-in-portland-or/>

EQUITY PEARL: GEOGRAPHY

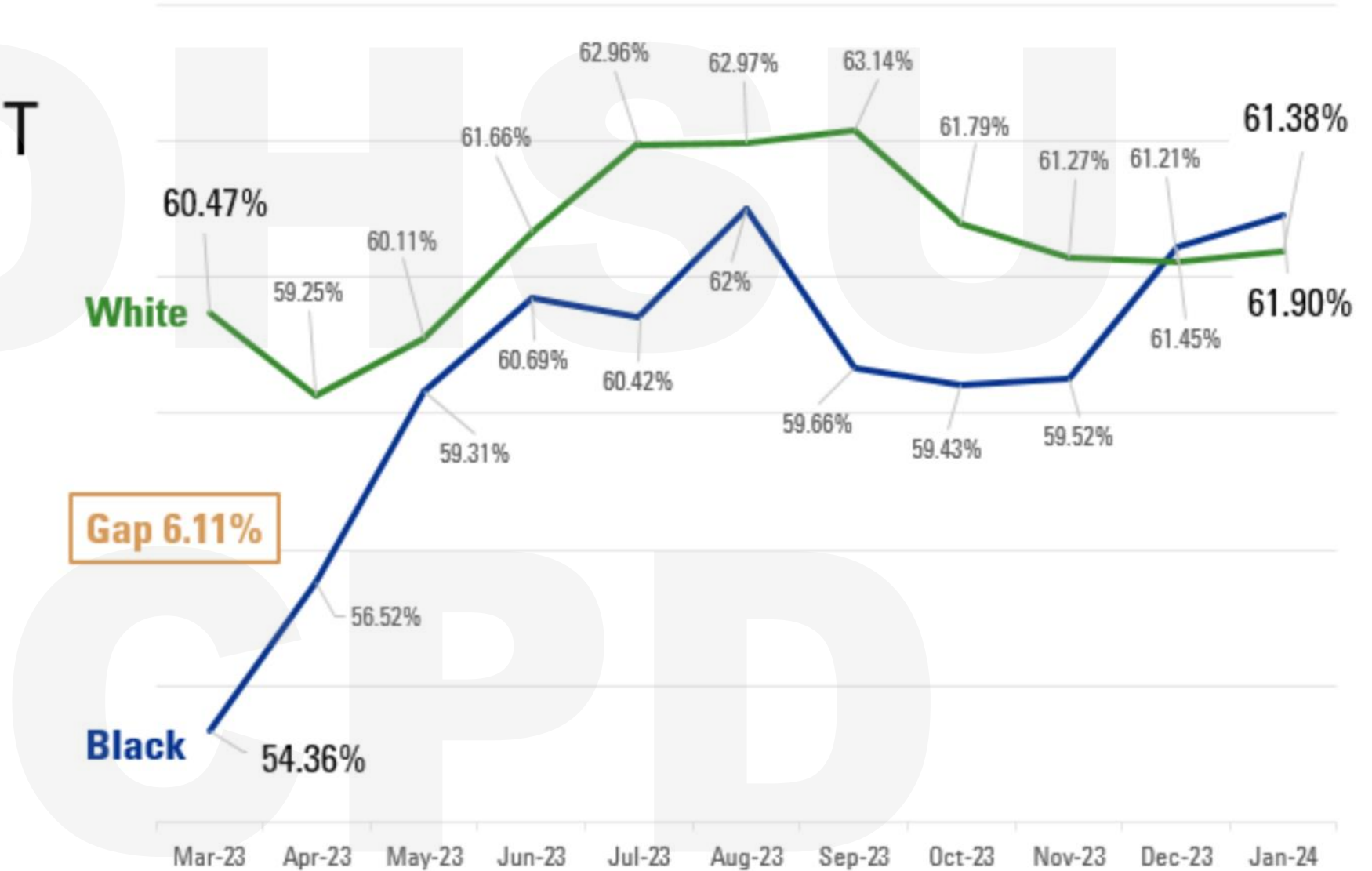


<https://bestneighborhood.org/race-in-portland-or/>



PMG HEALTH EQUITY GRANT RESULTS

Blood Pressure Control at Cascade, North Portland, & Northeast



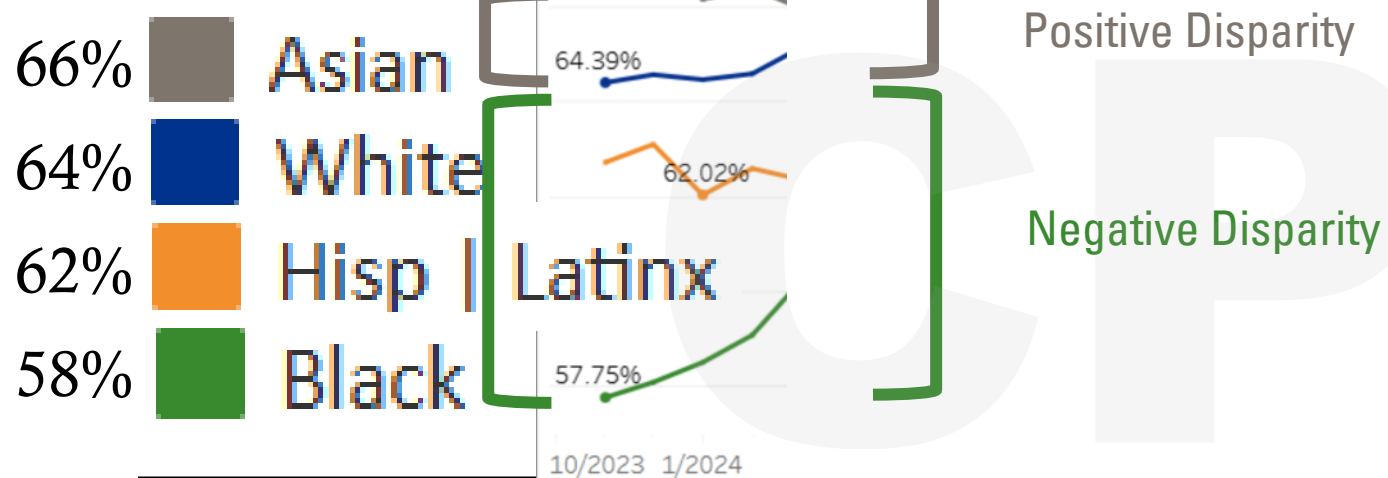
Frye, Abby (she/her)

Clinical Pharmacy Specialist • 5011 PMG N Pharmacy Admin



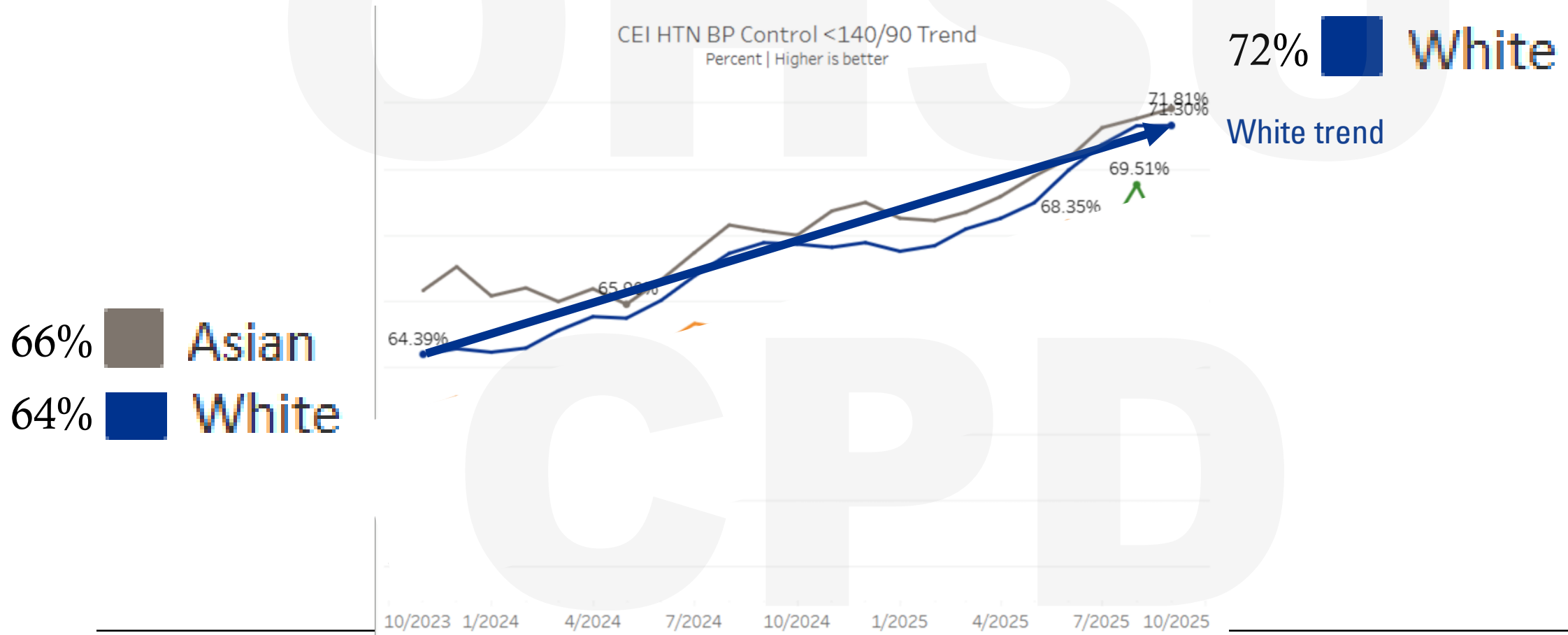
OREGON REGION BASELINE

CEI HTN BP Control <140/90 Trend
Percent | Higher is better



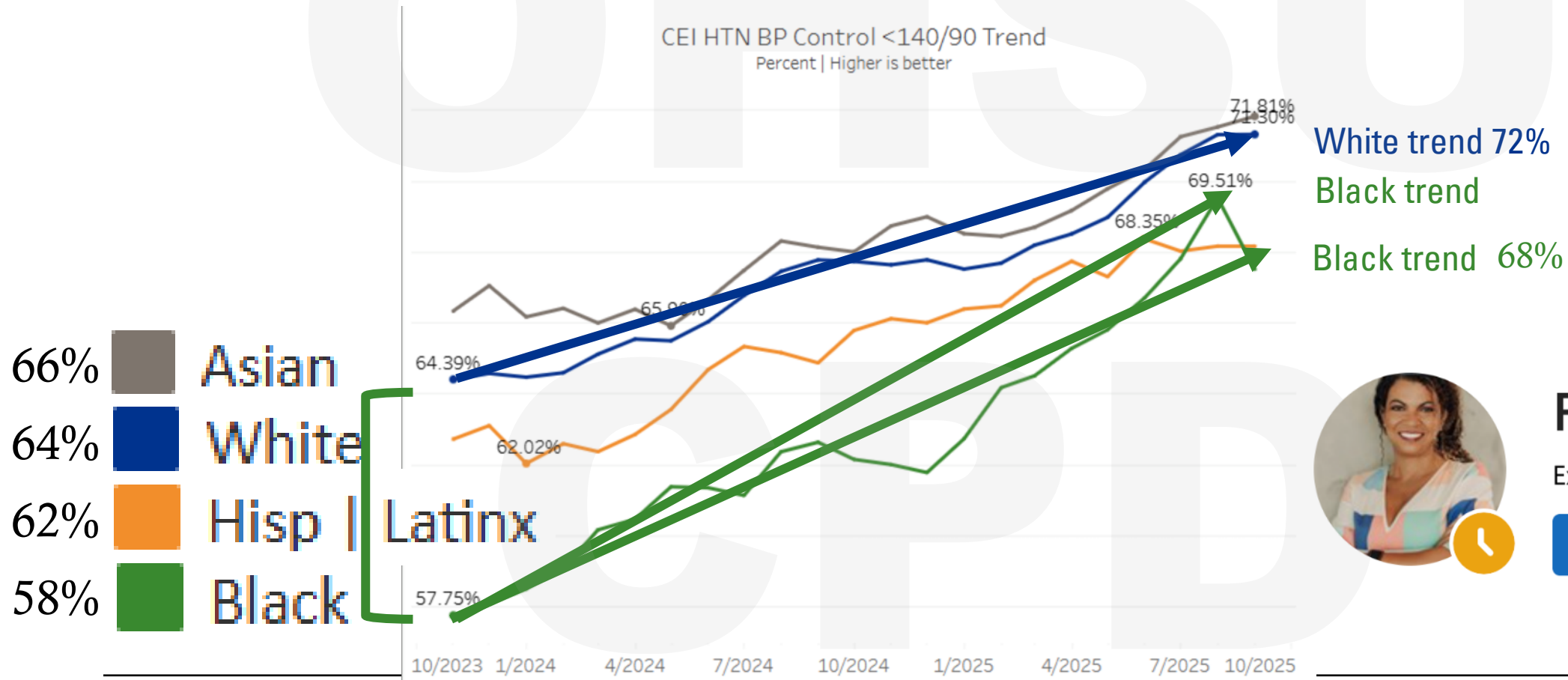
Active hypertension

OREGON REGION REFERENCE POPULATION BASELINE



Active hypertension patients 18-85 with most recent BP <140/90 in the past 12 months

OREGON REGION BASELINE



Active hypertension patients 18-85 with most recent BP <140/90 in the past 12 months



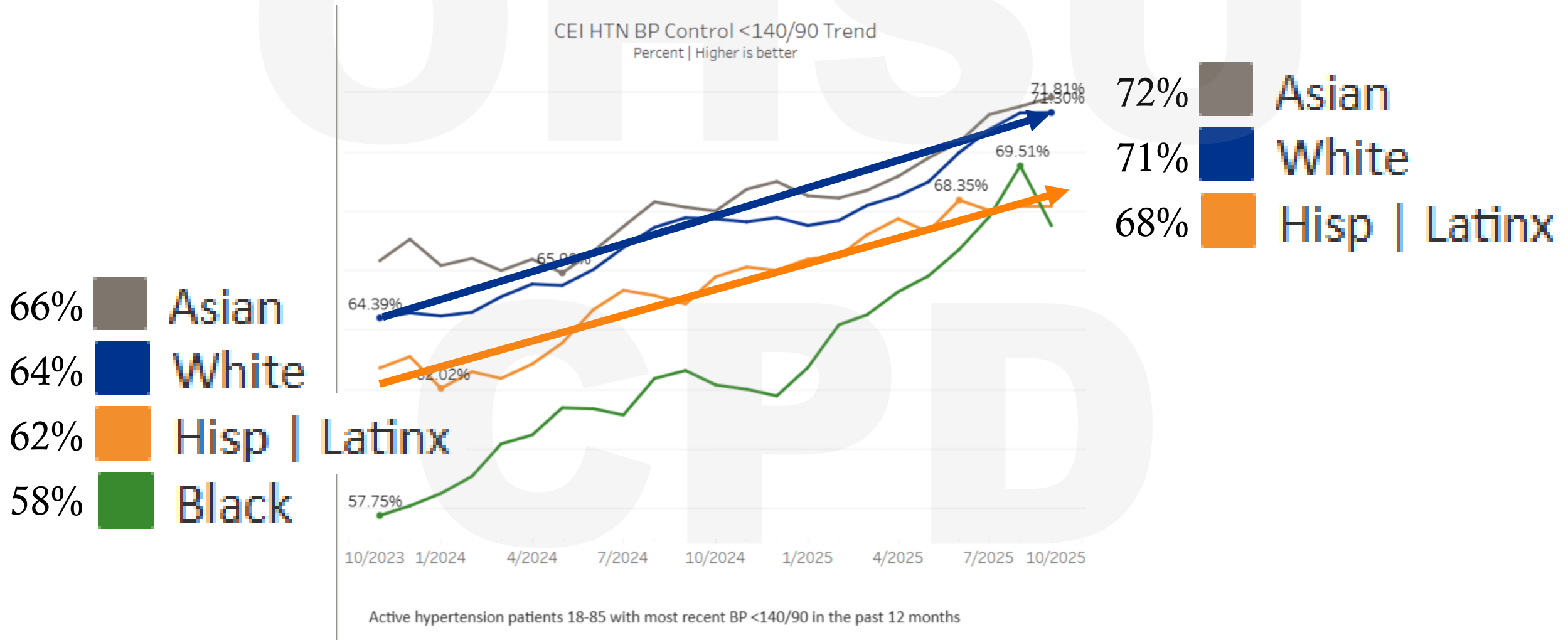
Franklin, Anna

Executive Director Health Equ

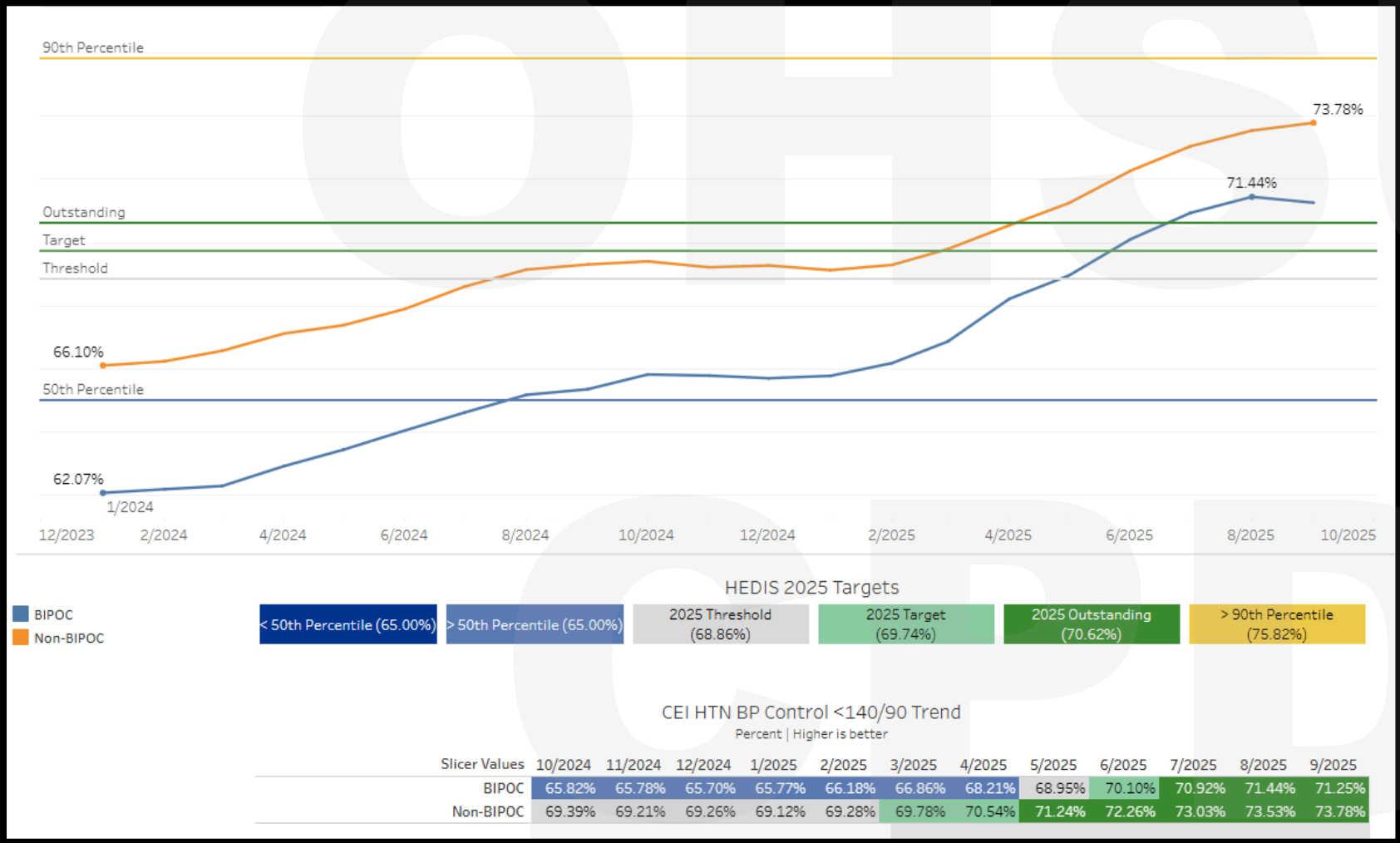
Call



OREGON REGION Q3 2025



Central Division: Hypertension Control – Oct YTD



Strong leadership backing and prioritization of Health Equity Hypertension education, blood pressure rechecks and culturally responsive outreach.

Scaled health interventions to rural communities are on track to expand access, improve hypertension control and address disparities.

Second blood pressure checks are increasing to help reduce misdiagnosis, improve hypertension control and account for white coat syndrome.

Improved patient experience has been reported, even amongst those with complex health needs.

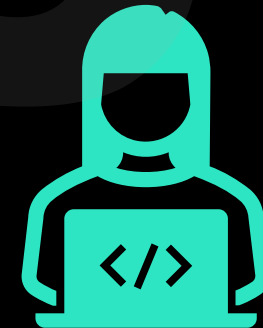
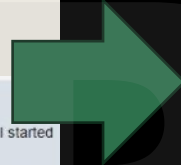
HTN REIMAGINED: MYCHART CASE

MYCHART

TEAM BASED CARE

MyChart Messaging Route Encounter New Conversation

Conversation Subject	Last Message
This is Dr. Sanders, covering today for your primary care doctor Laura L. Loertscher, MD. I have reviewed your chart.	
Dr. Loertscher would like to get your BP consistently below 130/80 esp at home.	
Glad the ankles are ok -- let's go up to 5 mg on amlodipine (can take 2 pills of the 2.5 once daily) and see if that gets the BP consistently below 130.	
For now keep the MA appt but if you send us another log and we're at goal, we will cancel.	
Take Care, Shelley S. Sanders, MD	
Hi,	
Thanks for getting back to me about the ingredients in the vaccine. I am thinking I will hold off on the shingles vaccine for now. I started the amlodipine after my appointment and am taking it with the Olmesartan in the morning. No swelling in ankles yet...	
Now that I am back to work, I am taking my BP readings when I get home after 3pm. I was able to take a few in the late morning last week. Here are my readings:	
8/20: 135/85 and 118/91 @ 11:33 and 11:35am	
8/22: 126/84 and 123/87 @ 3:39 and 3:41pm	
8/23: 130/82 and 128/81 @ 11:42 and 11:44am	
8/24: 129/81 and 127/84 @ 3:30 and 3:32pm	
8/26: 135/82 and 135/83 @ 4:34 and 4:36pm	
8/28: 130/81 and 134/80 @ 5:00 and 5:03pm	
Do you still want me to keep my phone appointment next week or can I cancel?	



Thanks again for always taking the time to answer all of my questions. I hope this combo of meds will be the one to stick with...

DIGITAL INTERVENTIONS



Systematic Review
28 RCT or cohort
17 aimed to enroll Black and Hispanic
8257 participants



Text messages to promote medication adherence



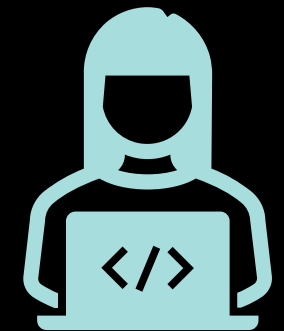
Remote BP monitoring



Virtual behavior coaching

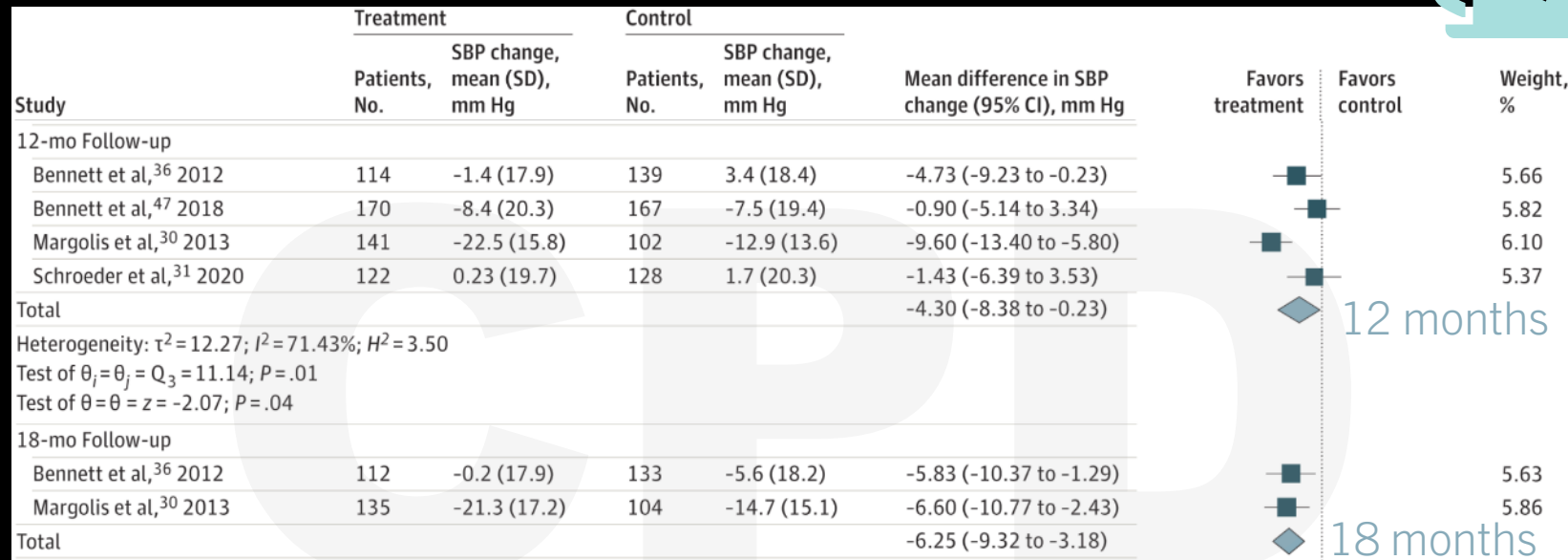


At 12 months, SBP -4.3 mmHG



Digital Health Interventions for Hypertension Management in US Populations Experiencing Health Disparities: A Systematic Review and Meta-Analysis. JAMA Netw Open. 2024;7(2)

YOUR DIGITAL ASSISTANT MAY HELP WITH LONG-TERM TREATMENT ADHERENCE







FUTURE STATE: DIABETES PREVENTION VIA AI?

JAMA

QUESTION Is an artificial intelligence (AI)-led Diabetes Prevention Program (DPP) noninferior to a human-led DPP in meeting weight loss, hemoglobin A_{1c} (HbA_{1c}) reduction, and physical activity recommendations among adults with prediabetes and overweight or obesity?

CONCLUSION Among adults with prediabetes and overweight or obesity, referral to a fully automated AI-led DPP was noninferior to referral to a human-led DPP in achieving a composite outcome based on weight reduction, HbA_{1c}, and physical activity.

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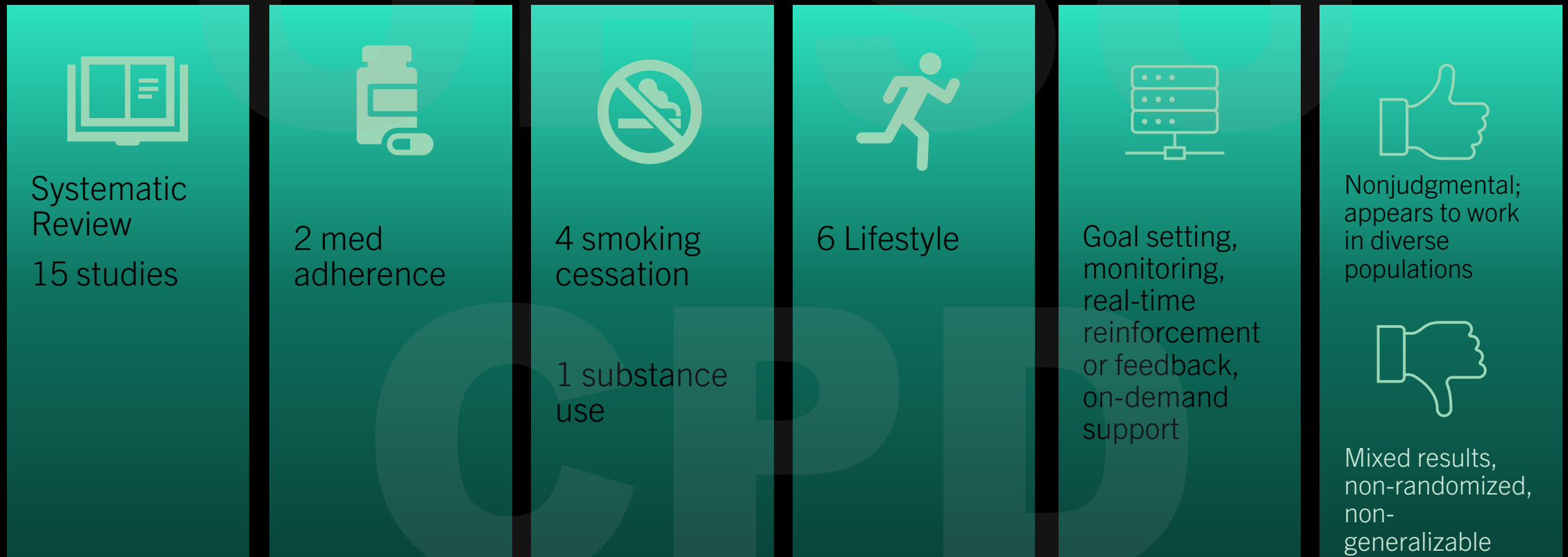
<p>POPULATION</p> <p>260 Women 108 Men</p>  <p>Adults 18 years or older with prediabetes and overweight or obesity Median age: 58 years</p>	<p>INTERVENTION</p> <p>368 Participants randomized</p> <p>183 AI-led DPP group Referred to a lifestyle intervention delivered via a mobile app and Bluetooth-enabled digital scale</p> <p>185 Human-led DPP group Referred to a lifestyle intervention delivered remotely via trained lifestyle coaches</p> 	<p>FINDINGS</p> <p>Participants achieving the composite primary outcome</p> <p>AI-led DPP group 58 of 183 participants</p> <p>Human-led DPP group 59 of 185 participants</p> 
<p>LOCATIONS</p> <p>2 Clinical sites in Maryland and Pennsylvania</p> 	<p>PRIMARY OUTCOME</p> <p>Composite outcome of HbA_{1c} <6.5% throughout the study and ≥5% weight loss, ≥4% weight loss plus ≥150 minutes of physical activity per week, or absolute reduction in HbA_{1c} ≥0.2 percentage points</p>	

AI-led DPP was noninferior (noninferiority margin, 15%) to a human-led DPP:
Risk difference, **-0.2%** (1-sided 95% CI, -8.2%)

Mathioudakis N, Lalani B, Abusamaan MS, et al; for the AI-DPP Study Group. An AI-powered lifestyle intervention vs human coaching in the Diabetes Prevention Program: a randomized clinical trial. *JAMA*. Published online October 27, 2025. doi:10.1001/jama.2025.19563

An AI-Powered Lifestyle Intervention vs Human Coaching in the Diabetes Prevention Program: A Randomized Clinical Trial. *JAMA*. Published online October 27, 2025

AI

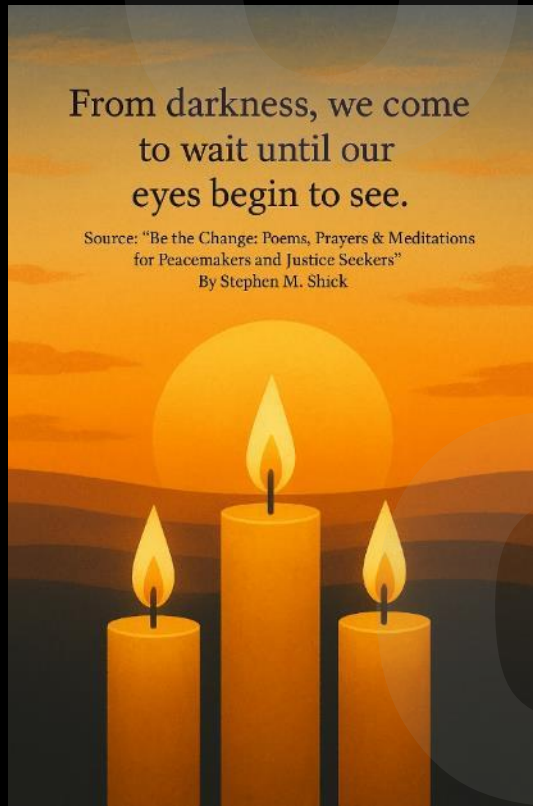


Artificial Intelligence-Based Chatbots for Promoting Health Behavioral Changes: Systematic Review. J Med Internet Res. 2023 Feb 24;25

AI – NOT QUITE (YET)



SUMMARY



HTN remains a major modifiable driver of excess stroke, CVD, and CKD, with large disparities remaining



PREVENT risk equation, #90 single combination pills, and target <130/80 for ALL; primary a/c for many



Race conscious, rather than race-specific or race-agnostic care is preferred



Geographic cohorting, a despicable vestige of redlining and structural racism, can nonetheless be part of strategic interventions to reduce disparities



Closing equity gaps requires listening to real patients. Microlearning.