CARDIOVASCULAR NURSING SYMPOSIUM

Hypertension: Local and Global Interventions

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April 11, 2025

Disclosures

I have no disclosures

CARDIOVASCULAR NURSING SYMPOSIUM
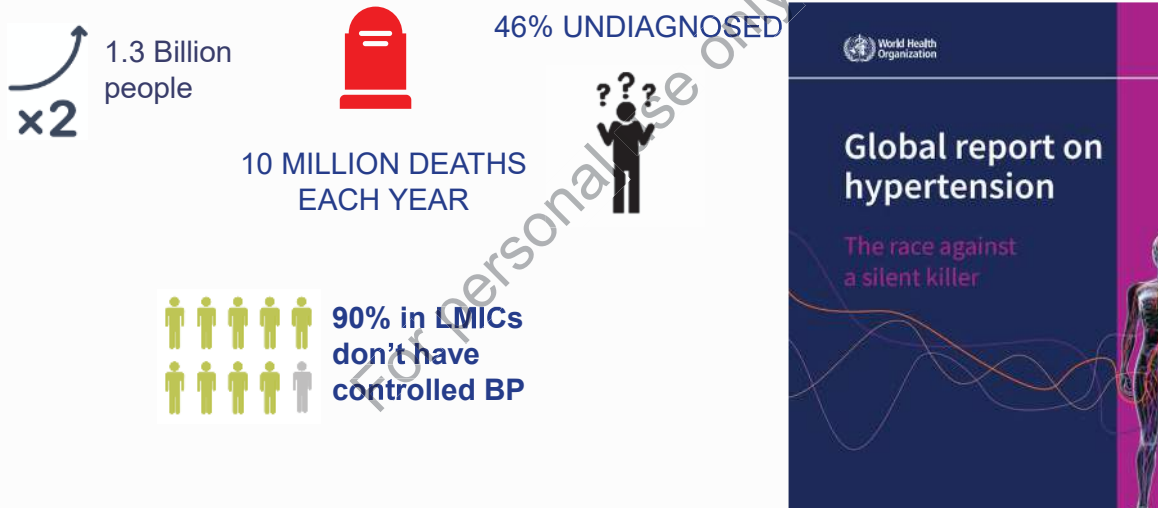
Objectives

1. **Analyze** hypertension epidemiology and its socioeconomic impact locally and globally.
2. **Examine** key factors contributing to uncontrolled hypertension and resulting health disparities across populations.
3. **Evaluate** the effectiveness of evidence-based multi-level interventions for hypertension management.
4. **Discuss** comprehensive nursing approaches for hypertension prevention, treatment, and long-term control.

CARDIOVASCULAR NURSING SYMPOSIUM

Definition and Classification of Hypertension

| BP Category	Systolic BP		Diastolic BP	Treatment or Follow-up
Normal	<120 mm Hg	and	<80 mm Hg	Evaluate yearly; encourage healthy lifestyle changes to maintain normal BP
Elevated	120-129 mm Hg	and	<80 mm Hg	Recommend healthy lifestyle changes and reassess in 3-6 months
Hypertension: stage 1	130-139 mm Hg	or	80-89 mm Hg	Assess the 10-year risk for heart disease and stroke using the atherosclerotic cardiovascular disease (ASCVD) risk calculator • If risk is less than 10%, start with healthy lifestyle recommendations and reassess in 3-6 months • If risk is greater than 10% or the patient has known clinical cardiovascular disease (CVD), diabetes mellitus, or chronic kidney disease, recommend lifestyle changes and BP-lowering medication (1 medication); reassess in 1 month for effectiveness of medication therapy – If goal is met after 1 month, reassess in 3-6 months – If goal is not met after 1 month, consider different medication or titration – Continue monthly follow-up until control is achieved
Hypertension: stage 2	≥140 mm Hg	or	≥90 mm Hg	Recommend healthy lifestyle changes and BP-lowering medication (2 medications of different classes); reassess in 1 month for effectiveness • If goal is met after 1 month, reassess in 3-6 months • If goal is not met after 1 month, consider different medications or titration • Continue monthly follow-up until control is achieved

Whelton, P. et al 2017. *Hypertension*

Hypertension is a global health challenge

×2 1.3 Billion people

10 MILLION DEATHS EACH YEAR

46% UNDIAGNOSED

90% in LMICs don't have controlled BP

World Health Organization

Global report on hypertension

The race against a silent killer

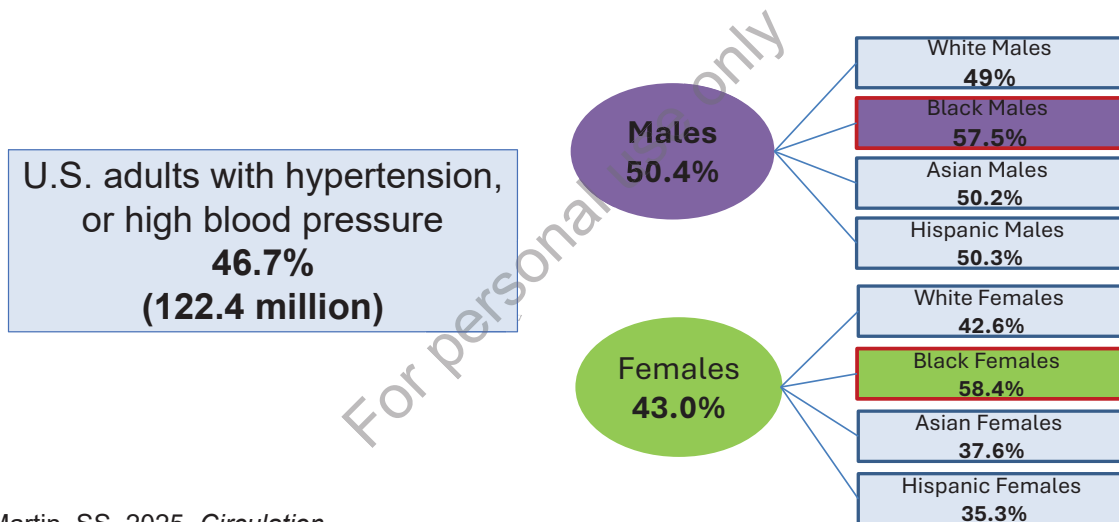# BP lowering reduces CVD risk

- A 10-mm Hg reduction in systolic blood pressure (SBP) is associated with :
  - 15% to 20% reduction in the risk of coronary artery disease (CAD)
  - 25% to 30% reduction in the risk of stroke.

IHD Mortality

Stroke Mortality
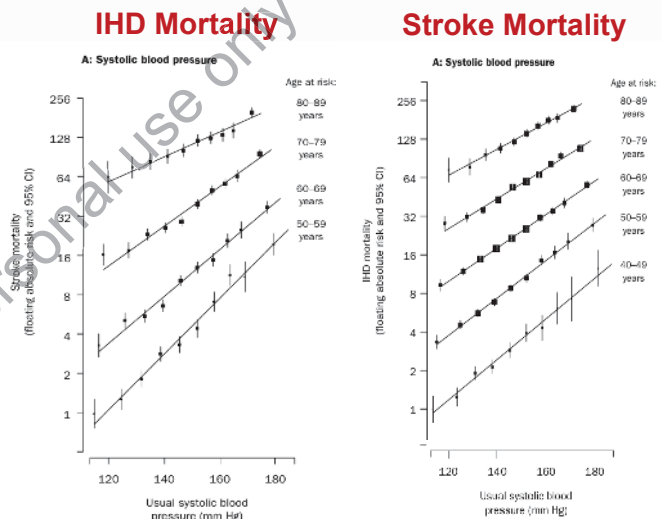
Ettehad, D. et al. 2016. *The Lancet*
Lewington S. et al. 2002. *The Lancet*

Hypertension Prevalence in US, 2017–2020, age ≥20y

U.S. adults with hypertension, or high blood pressure
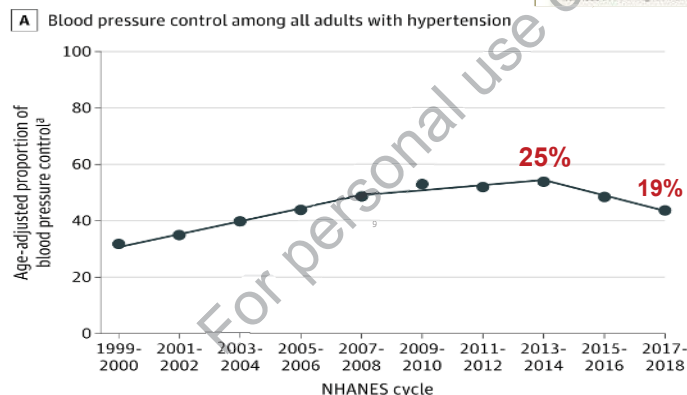**46.7%**
(122.4 million)

Males
50.4%

White Males	**49%**
Black Males	**57.5%**
Asian Males	**50.2%**
Hispanic Males	**50.3%**

Females
43.0%

White Females	**42.6%**
Black Females	**58.4%**
Asian Females	**37.6%**
Hispanic Females	**35.3%**

Martin, SS. 2025. *Circulation*

Hypertension Burden in the US

Mortality, 2022, all ages

131 454

Hospital discharges, 2019, all ages

8 827 938

Estimated cost, 2020-2021

$49 Billion

Martin, SS. et al. 2025. *Circulation*

Uncontrolled Hypertension is Worsening in the US

Hypertension control: **<130/80 mm Hg**

JAMA | Original Investigation
Trends in Blood Pressure Control Among US Adults With Hypertension, 1999-2000 to 2017-2018

Paul Muntner, PhD; Shakia T. Hardy, PhD; Lawrence J. Fine, MD; Byron C. Jaeger, PhD; Gregory Wozniak, PhD; Emily B. Levitan, ScD; Lisandro D. Colantonio, MD, PhD

IMPORTANCE Controlling blood pressure (BP) reduces the risk for cardiovascular disease.
OBJECTIVE To determine whether BP control among US adults with hypertension changed from 1999-2000 through 2017-2018.

A Blood pressure control among all adults with hypertension

25%

19%

NHANES cycle

About 1 in 5 adults with hypertension have controlled BP

Muntner P et al. 2020. JAMA

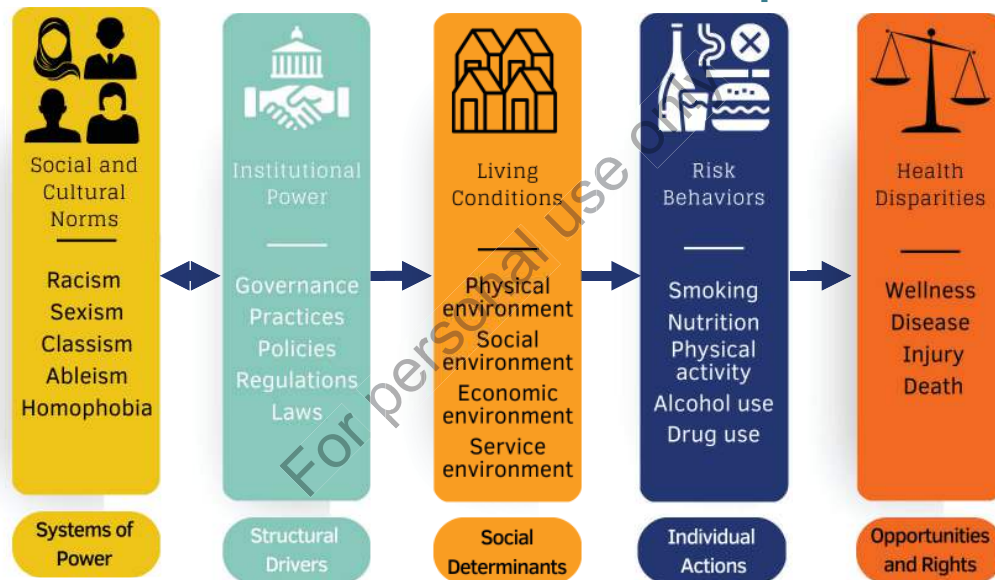# BARRIERS TO HYPERTENSION CONTROL

Why are BP Control Rates Poor?

Environment /Society
- Poor social support
- Poor access to healthy foods
- Inadequate community resources

Health System
- Quality orientation
- Staffing
- Team functioning
- Practice resources
- Outreach focus

Patients
- Low health literacy
- Unhealthy lifestyles
- Medication taking habits

Clinicians/Staff
- Clinical inertia
- Competing priorities
- Technical skills
- Communication skills

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Frieden TR et al. 2019. *J Clin Hypertens*

The Causal Chain of Health Disparities

Social and Cultural Norms	Institutional Power	Living Conditions	Risk Behaviors	Health Disparities
Racism Sexism Classism Ableism Homophobia	Governance Practices Policies Regulations Laws	Physical environment Social environment Economic environment Service environment	Smoking Nutrition Physical activity Alcohol use Drug use	Wellness Disease Injury Death
Systems of Power	Structural Drivers	Social Determinants	Individual Actions	Opportunities and Rights

Advancing Equity Requires Multi-level Approaches

INTERVENTION TARGETS

HEALTHCARE PROCESSES

OUTCOMES

LEVEL 4 Policy and Community
— Neighborhood and community resources

LEVEL 3 Organization and Provider
— Organizational motivation, resources, staff attributes, climate, and teamwork
— Patient programs and services, insurance, affordability, and system-level supports

LEVEL 2 Family, Friends, and Social Support
— Ongoing support from family and friends

LEVEL 1 Individual Patient
— Patient education and clinical care; biological, sociodemographic, and psychological factors

KEY INTERACTIONS

Patients and support networks

Health care providers

Community health workers

Other organizational members and stakeholders

Clinical outcomes

Avoidable hospital admissions

Patient experiences of care

Equity of services

Costs

Purnell TS, Cooper LA, et al. Achieving Health Equity: Closing the Gaps in Health Care Disparities, Interventions, and Research. Health Aff. 2016 Aug 1; 35(8): 1410-5.

Social Determinants of Health

Socioeconomic Factors

40%

Education | Job Status | Family/ Social Support | Income | Community Safety

Physical Environment

10%

30%

Health Behaviors

Tobacco Use | Diet & Exercise | Alcohol Use | Sexual Activity

20%

Health Care

Access to Care Quality of Care

Root causes of health inequities

Poor hypertension outcomes
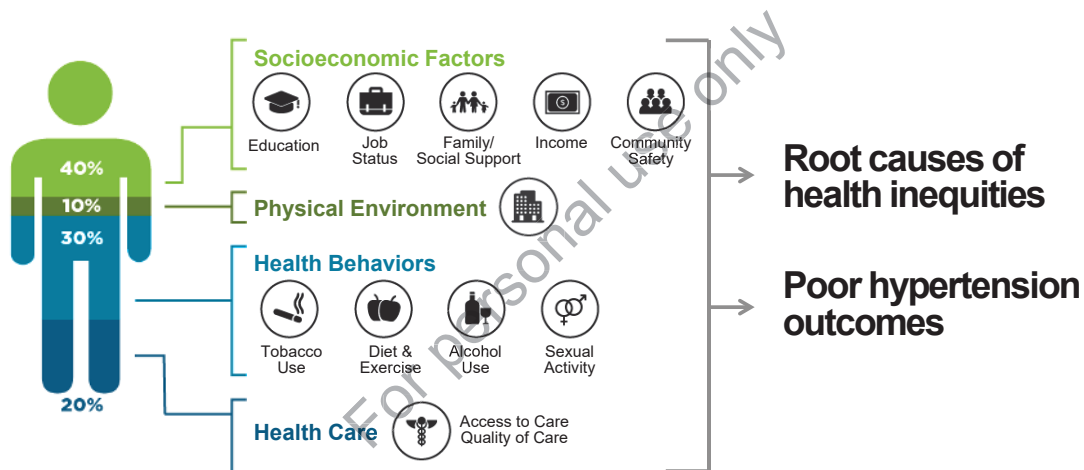
National Academies of Sciences, Engineering, and Medicine. 2017. Communities in Action: Pathways to Health Equity. Washington, DC: The National Academies Press.

Social Determinants of Controlled BP

- N=21,664 adults (mean age 47.1 years), 51% female
- Factors associated with a lower probability of controlled BP:

  - **Non-Hispanic Black versus White adults**
  - **Not having a routine place for health care**
  - **Not having health insurance**
  - Being employed versus unemployed (females)
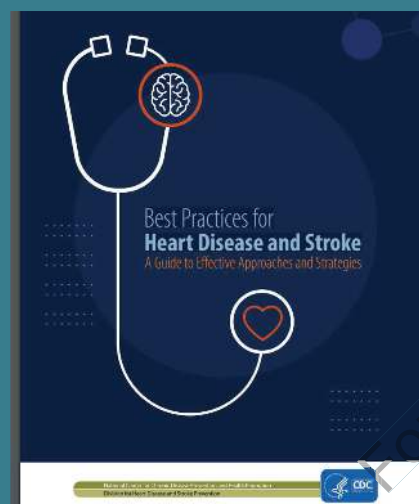 - Being married versus being unmarried (females)

Commodore-Mensah Y, Turkson-Ocran RA, Foti K, Cooper LA, Himmelfarb CD. 2021. Associations between Social Determinants and Hypertension, Stage 2 Hypertension and Controlled Blood Pressure among Men and Women in the US. Am J Hypertens.

Impact of Social Determinants of Health on Hypertension Outcomes: A Systematic Review

Metlock et al., 2024, *Hypertension*

Evidence-based interventions to improve hypertension control

Recommendations for Best Hypertension Control Practices-HEART Package
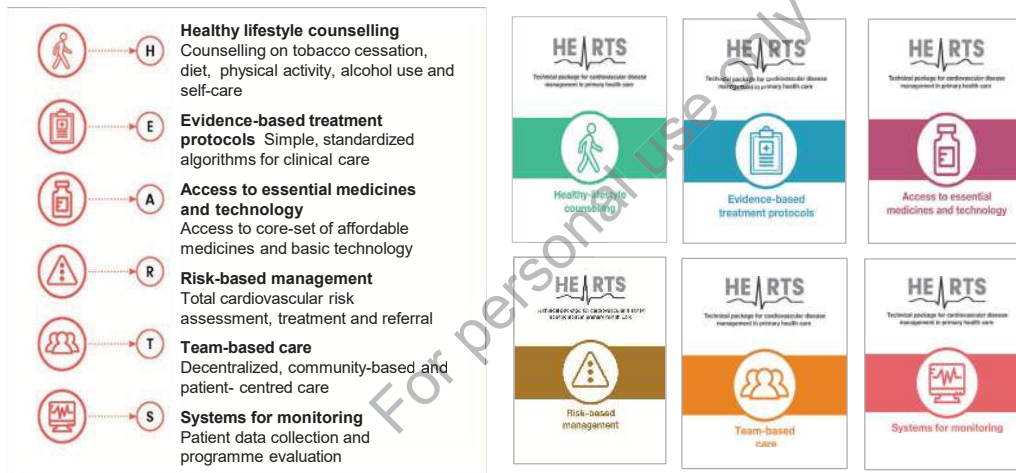
WHO: HEARTS: Technical package for cardiovascular disease management in primary health care: Risk-based CVD management; https://www.who.int/publications/i/item/9789240001367

Implementation Strategies for Blood Pressure Control

Comparative Effectiveness based on meta-analysis of 121 comparison(55,920)

Implementation Strategy		Net Change in BP (95% CI), *mm Hg*	Studies, *n*
Systolic BP			
Team-based care with titration by nonphysician		−7.1 (−8.9 to −5.2)	10
Team-based care with titration by physician		−6.2 (−8.1 to −4.2)	19
Multilevel strategy without team-based care		−5.0 (−8.0 to −2.0)	8
Health coaching		−3.9 (−5.4 to −2.3)	38
Electronic decision-support systems		−3.7 (−5.2 to −2.2)	4
Home BP monitoring		−2.7 (−3.6 to −1.7)	26
Provider training		−1.4 (−3.6 to 0.7)	5
Audit and feedback		−0.8 (−2.1 to 0.5)	2

Mills KT, et al 2018. Ann Intern Med.

Nonpharmacological Interventions

Intervention	Dose/Recommendation	Impact on BP (Hypertension)
Weight loss	Best goal is ideal body weight, but aim for at least a 1-kg reduction in body weight for most adults who are overweight. Expect about 1 mm Hg for every 1-kg reduction in body weight.	**−5 mm Hg**
DASH dietary pattern	Consume a diet rich in fruits, vegetables, whole grains, and low-fat dairy products, with reduced content of saturated and total fat.	**−11 mm Hg**
Reduced dietary sodium	Optimal goal is <1500 mg/d, but aim for at least a 1000-mg/d reduction in most adults.	**−5/6 mm Hg**
Enhanced dietary potassium	Aim for 3500–5000 mg/d, preferably by consumption of a diet rich in potassium.	**−4/5 mm Hg**

Whelton, P. et al 2017. *Hypertension*

Nonpharmacological Interventions

Intervention	Dose/Recommendation	Impact on BP (Hypertension)
Aerobic activity	90–150 min/wk at 65%–75% heart rate reserve	−5/8 mm Hg
Dynamic resistance	90–150 min/wk at 50%–80% 1 rep maximum, 6 exercises, 3 sets/exercise, 10 repetitions/set	−4 mm Hg
Isometric resistance	4 × 2 min (hand grip), 1 min rest between exercises, 30%–40% maximum voluntary contraction, 3 sessions/wk for 8–10 wk	−5 mm Hg
Alcohol moderation	In individuals who drink alcohol, reduce alcohol to: Men: ≤2 drinks daily Women: ≤1 drink daily	−4 mm Hg

Whelton, P. et al 2017. *Hypertension*

A combination of different medications is needed to achieve BP

•**Diuretics:** Remove excess sodium and water, reducing blood volume and pressure.
•**ACE Inhibitors:** Block the production of angiotensin II, preventing blood vessel narrowing.
•**ARBs:** Block the action of angiotensin II on blood vessels, reducing blood pressure.
•**CCBs:** Prevent calcium from entering heart and blood vessel cells, causing relaxation

Recommendation for Choice of Initial Medication

COR	LOE	Recommendation
I	A[SR]	1. For initiation of antihypertensive drug therapy, first-line agents include thiazide diuretics, CCBs, and ACE inhibitors or ARBs.

Whelton, P. et al 2017. *Hypertension*

Assess and address adherence to antihypertensive medication

1. High rates of **non-adherence** to hypertension medication.
   - Global prevalence of 27% to 40%
   - Higher prevalence was detected in low- to middle-income and non-Western countries
2. Common factors associated with non-adherence
   - Cost of medication
   - Side effects
   - Forgetfulness
   - Inadequate knowledge about hypertension
3. Nursing interventions targeting these factors may improve adherence and hypertension control
   - Assess adherence: Hill-Bone Medication Adherence Scale

Lee, E.K.P et al. 2022. *JAHA*

Measure blood pressure accurately

- Measuring BP is a key skill for nurses.
- Following these tips will help ensure that all BP measurements are accurate.
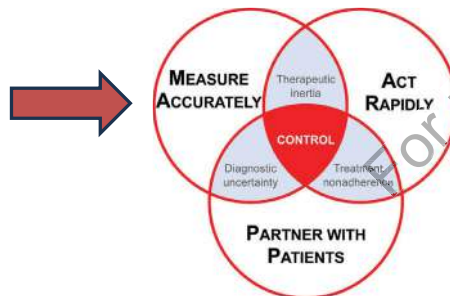
Team-Based Care Improves Blood Pressure

- Team-based care(TBC) to improve BP control is defined as a health systems-level, organizational intervention that relies on **multidisciplinary teams** to improve the quality of hypertension care for patients. 1
  - Task-shifting/Task-sharing

- Advantages include[2] :
  - Improved BP control
  - Expanded healthcare access
  - Improved patient medication adherence
  - Better follow-up
  - Improved patient satisfaction

1. Proia KK, et al. 2014 . Am J Prev Med.
2. HEARTS Technical package for cardiovascular disease management in primary health care: team-based care. Geneva: World Health Organization; 2018 (WHO/NMH/NVI/18.4). Licence: CC BY-NC-SA 3.0 IGO.

Team-based care should be patient-centered
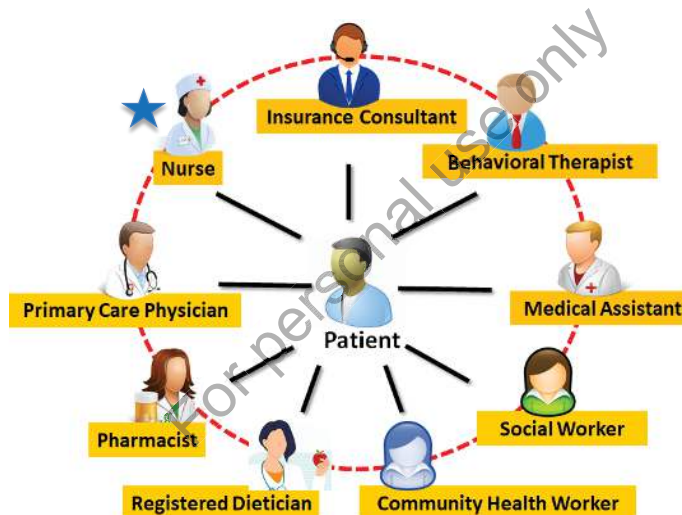
Systematic Review and Meta-analysis on Team-based hypertension care in LMICs

Subgroup Analysis: Team-Based Care by Cadres of Healthcare workers

Random-effects meta-analysis: TBC Interventions by Healthcare Provider Type
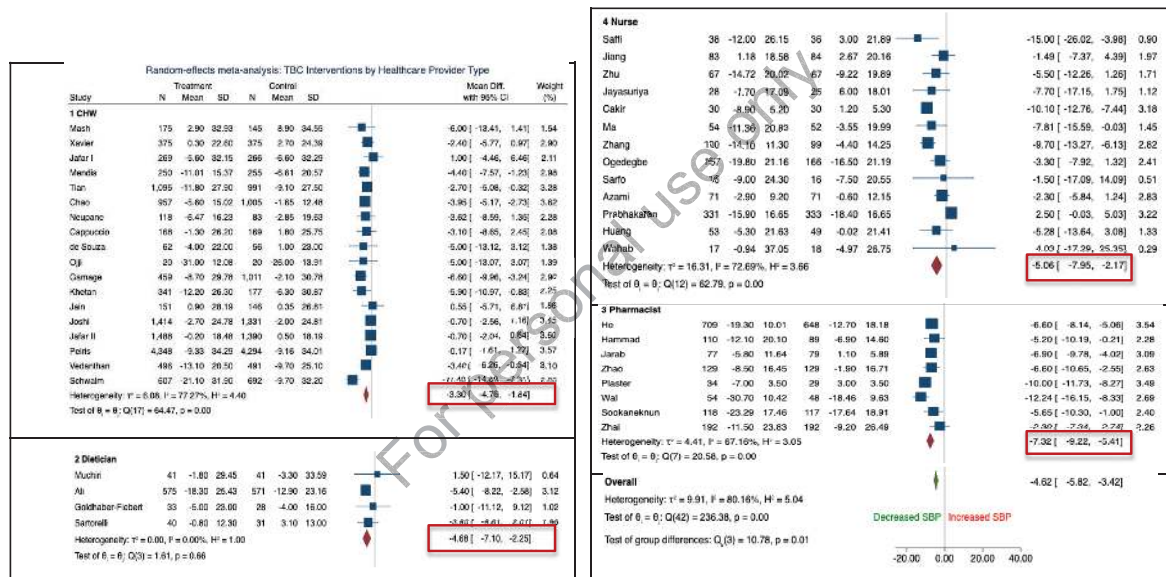
Summary

- Overall SBP **change -4.62 mmHg (95%CI: -5.82 to -3.42)**
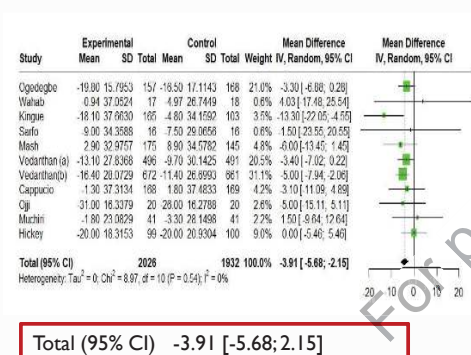- Notable differences in SBP change based on healthcare provider cadre
  - CHW: **-3.30 mmHg (95% CI: -4.76, -1.84)**
  - Dieticians: **-4.68 mmHg (95% CI: -7.10, -2.25)**
  - Nurses: **-5.06 mmHg (95% CI: -7.95, -2.17)**
  - Pharmacists: **-7.32 mmHg (95% CI: -9.22, -5.41).**

Systematic Review and Meta-analysis on Team-based hypertension care in **Africa**

- Overall SBP **change -3.91 [95% CI: -5.68; 2.15]**

Difference BP by HCW

- CHW: **-4.43 mm Hg (95% CI: -5.69 to -3.17)**
- Nurses: **- 3.75 mm Hg (95%CI: -10.62 to 3.12)**

Total (95% CI)   -3.91 [-5.68; 2.15]

Hinneh T, et al. 2024. *BMJ Open.*

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Closing the Gap Between Knowledge and Health Equity

Implementation

Knowledge

- Clinical efficacy and effectiveness
- Basic biomedical and behavioral science
- Epidemiology

Transdisciplinary Research

Dissemination and Translation Initiatives

Sustainability of Approaches

Community Engagement

Equity

- Improved healthcare quality and population health

General Principles for Engagement

LINKED-HEARTS Program

A Cardiometabolic Health Program LINKED with Community Health WorkErs and Mobile HeAlth TelemonitoRing To reduce Health DisparitieS

LINKED-HEARTS

MACCHE
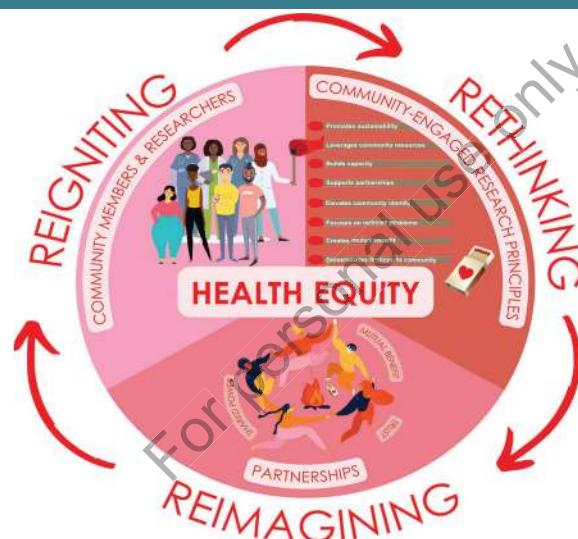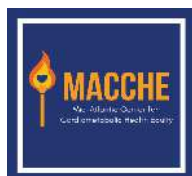
1P50MD017348-01

LINKED-HEARTS: Study Team

Yvonne Commodore-Mensah, PhD, MHS, RN, *MPI*

Cheryl R. Himmelfarb, PhD, ANP, RN *MPI*

Lisa Cooper, MD, MPH *Co-I*

Deidra Crews, MD, ScM *Co-I*

Chidinma Ibe, PhD *Co-I*

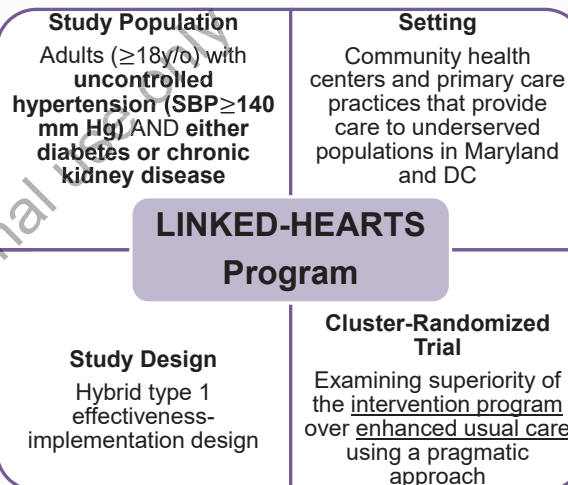Justin Echouffo Tcheugui, MD, PhD *Co-I*

Kathryn Carson, ScM *Co-I*

Bunmi Ogungbe, PhD, MPH, RN *Co-I*

Samantha DeMarco, PharmD, BCPS *Clinical Pharmacist*

Janice Dugbartey, MPH *Research Program Manager*

Yuling Chen, PhD, RN *Post-doc Fellow*

Andrea Orellana, BA *Research Program Coordinator*

Tye Lane, BS *CHW*

Melina Stavrou *CHW*

Mary Richard *CHW*

Shellybright Manga *CHW*

Domonique Harris *CHW*

Gabriela Ortega *CHW*

Lyndsey Spies *CHW*

Glen-Kay Falloon, MPH *Research Assistant*

Laura Maus, MD *Research Assistant*

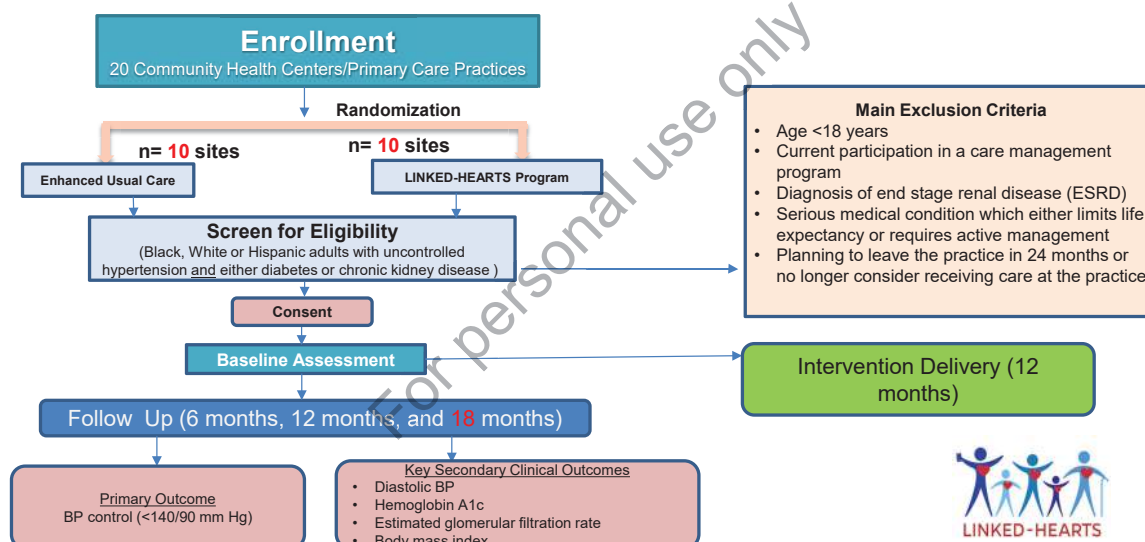Maricielo Leisure *Research Assistant*

LINKED-HEARTS Program - Aims and Methods

► **Primary Aim**: To compare the effect of the LINKED-HEARTS Program versus HBPM in improving BP control (systolic BP <140/90 mm Hg) and improving patient-centered outcomes at 6 and 12 months in adults with uncontrolled hypertension and diabetes or chronic kidney disease (CKD).

► **Secondary Aim**: To evaluate the reach, adoption, maintenance of the LINKED-HEARTS program at 12 and 24 months post-randomization and explore contextual factors that are associated with the adoption and maintenance of the program.

Study Population
Adults (≥18y/o) with **uncontrolled hypertension (SBP≥140 mm Hg) AND either diabetes or chronic kidney disease**

Setting
Community health centers and primary care practices that provide care to underserved populations in Maryland and DC

LINKED-HEARTS Program

Study Design
Hybrid type 1 effectiveness-implementation design

Cluster-Randomized Trial
Examining superiority of the intervention program over enhanced usual care using a pragmatic approach

LINKED-HEARTS Program - Study Design

Enrollment
20 Community Health Centers/Primary Care Practices

Randomization

n= **10** sites

n= **10** sites

Enhanced Usual Care

LINKED-HEARTS Program

Screen for Eligibility
(Black, White or Hispanic adults with uncontrolled hypertension and either diabetes or chronic kidney disease)

Consent

Baseline Assessment

Follow Up (6 months, 12 months, and **18** months)

Main Exclusion Criteria
- Age <18 years
- Current participation in a care management program
- Diagnosis of end stage renal disease (ESRD)
- Serious medical condition which either limits life expectancy or requires active management
- Planning to leave the practice in 24 months or no longer consider receiving care at the practice

Intervention Delivery (12 months)

Primary Outcome
BP control (<140/90 mm Hg)

Key Secondary Clinical Outcomes
- Diastolic BP
- Hemoglobin A1c
- Estimated glomerular filtration rate
- Body mass index

LINKED-HEARTS

Participating Health Systems

CHOPTANK community health

20 Sites

Uj UNITY HEALTH CARE

6 sites

6 sites

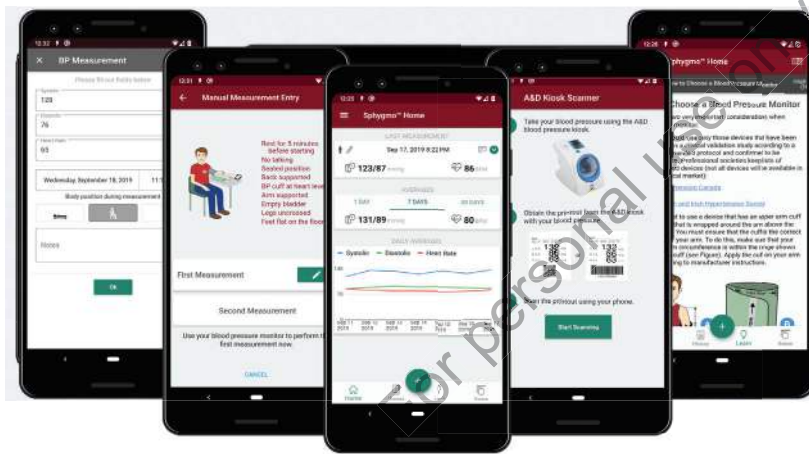JOHNS HOPKINS MEDICINE
JOHNS HOPKINS COMMUNITY PHYSICIANS

8 sites

LINKED-HEARTS Program – Multi-level Intervention

Description of Intervention Components	Patient	Provider	Community	System
Home blood pressure monitoring	X			
Sphygmo Home BP telemonitoring platform	X	X		
Evidence-based treatment algorithms		X		
Simplification of drug regimen		X		
Training on office-based BP measurement		X		X
Education and counseling on lifestyle modification	X		X	
Community health worker telehealth visits	X		X	X
Pharmacist telehealth visits		X		X

LINKED-HEARTS Program App: Sphygmo Home

Sphygmo App Clinician Portal

Community Health Workers

Tye Lane

Mary Richard

Melina Stavrou

Lyndsey Spies

Shellybright Manga

Domonique Harris

Gabriela Ortega

Social Determinants of Health Barriers

Pie chart segments:
- 10.5% — Housing insecurity
- 10.5% — Housing conditions
- 26.8% — Food insecurity
- 15.8% — Transportation needs
- 15.8% — Utility needs
- 10.5% — Social/emotional support

Legend:
- Housing insecurity
- Housing conditions
- Food insecurity
- Transportation needs
- Utility needs
- Interpersonal safety
- Social/emotional support
- Other(s):
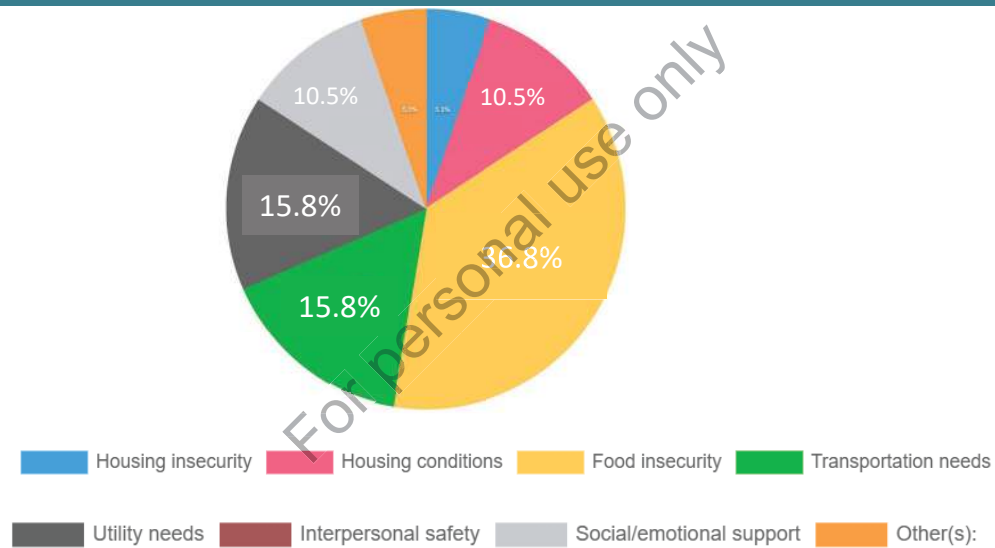
Current Enrollment

Targeted Enrollment Total………………………………………………………… 425
Actual Enrollment to Date………………………………………………....... 286

	All Patients	Sex		Race/ethnicity		
		Female	Male	African American	Hispanic	White
Number enrolled	286	174	112	159	10	89
Target number	425	213	212	60	85	280
% of target	67.3%	81.7%	52.8%	265%	11.7%	31.2%

JOHNS HOPKINS
ALLIANCE for a
HEALTHIER WORLD

JOHNS HOPKINS
CENTER for HEALTH EQUITY

The ADHINCRA Study:
Addressing Hypertension Care in Africa

Ghana

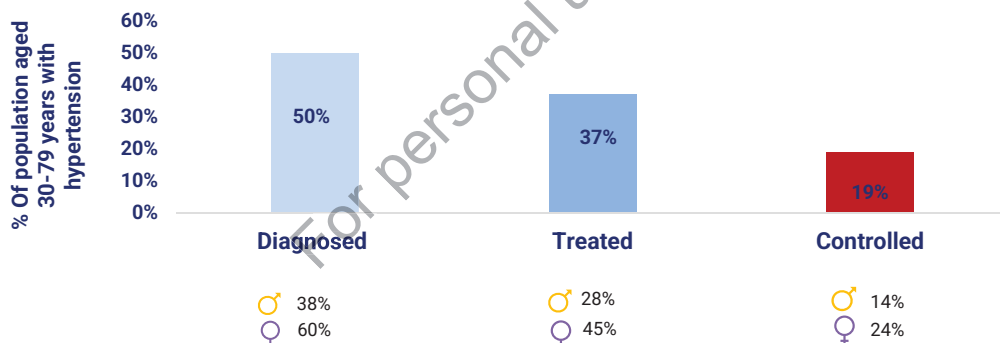# Hypertension Cascade in Ghana

Hypertension profile **Ghana**

Total population: 31 522 000
Total Deaths: 190 000

Age-standard prevalence of HTN (140/90mm/Hg) among adults (2019)	⚥ 34%	♂ 31%	♀ 36%

% Of population aged 30-79 years with hypertension

	Diagnosed	Treated	Controlled
	50%	**37%**	**19%**
♂	38%	28%	14%
♀	60%	45%	24%

1. World Health Organization. 2023. | Global hypertension Report, The race against the silent killer, Geneva, License: CC BY-NC-SA 3.0 IGO

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ADHINCRA Study Protocol

Addressing Hypertension Care in Africa (ADHINCRA): Study protocol for a cluster-randomized controlled pilot trial

Yvonne Commodore-Mensah [a b 1], Fred Stephen Sarfo [a c 1], Ruth-Alma Turkson-Ocran [d], Kathryn Foti [i], Linda Meta Mobula [d], Cheryl Dennison Himmelfarb [a e], Kathryn A. Carson [b d], Lambert T. Appiah [f], Michael Degani [g], Chemuttaai Lang'at [h], Gideon Nyamekye [h], Nancy E. Molello [d], Rexford Ahima [a b d], Lisa A. Cooper [a d e]

Show more ∨

Project goal

▶ Test the **feasibility** of a **multilevel**, **nurse-led**, **mobile health enhanced** intervention in patients with uncontrolled hypertension in Kumasi, Ghana

Methods

Design:
Two-arm pilot cluster RCT involving **240** patients with uncontrolled HTN (SBP≥ 140 mmHg)

Setting: Kumasi, Ghana

Outcomes:

► *Clinical outcomes:* BP control

► *Intermediate outcomes:* Medication Adherence

► *Patient-Reported Outcome:* The acceptability and usability of the *Akoma pa* app

Participants

Inclusion criteria:
- ✓ Male or female
- ✓ Uncontrolled HTN: SBP ≥140 mm Hg
- ✓ + Diabetes diagnosis
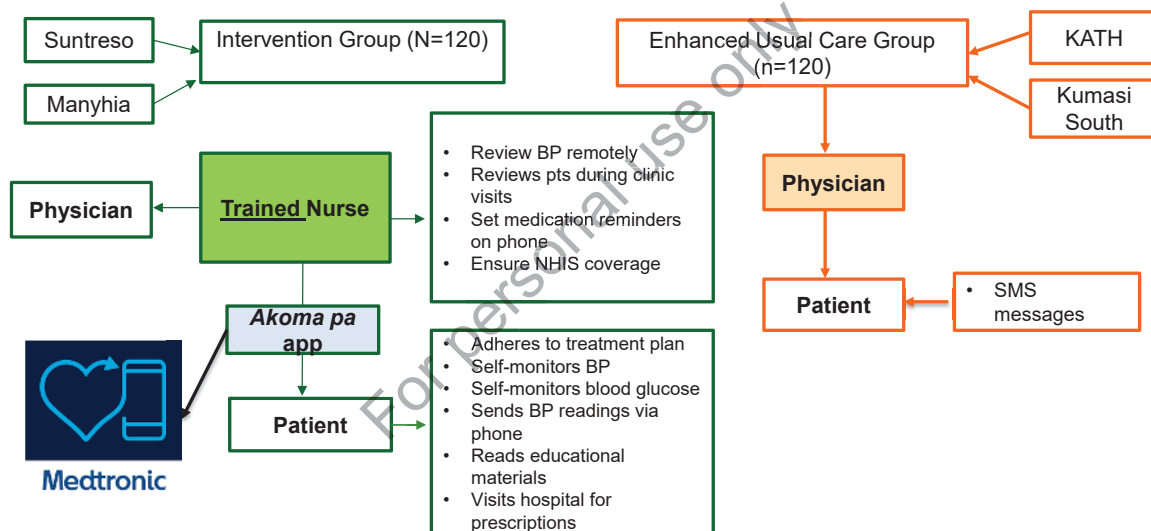- ✓ + CVD or stroke
- ✓ 18-70 years

Exclusion criteria:
- ✓ End stage renal disease (ESRD)
- ✓ Cognitive impairment /dementia
- ✓ Severe global disability

Stakeholder Engagement

Intervention

Study Nurses

Results: Baseline characteristics by Study arm

	Total (N=240)	Intervention (N=120)	Enhanced Usual Care (N=120)	P-value
Age, mean ±SD	53 ± 9.7	54 ± 9.5	52 ± 9.8	0.21
Male	117 (49)	60 (50)	57 (48%)	0.70
Married/cohabitating	178 (74.2)	90 (75.0)	88 (73.3)	0.76
Highest level of education (n, %)				
≤Primary School	78 (32.5)	20 (16.7)	58 (48.3)	<0.001
Secondary/High School	110 (45.8)	68 (56.7)	42 (35.0)	
College or higher	52 (21.7)	32 (26.6)	20 (16.7)	
Employed	186 (77.5)	95 (79.2)	91 (75.8)	0.54
Income level per month(n, %)				
<1200 GHC ($105)	5(2.5)	3(3.6)	2(1.7)	0.49
1200-< 6000GHC ($105-528)	45(22.3)	22 (26.5)	23(19.3)	
6000- <12000GHC ($528-1058)	71(35.2)	27 (32.5)	44(37.0)	
≥1000 GHC ($1058)	81 (40.1)	31 (37.4)	50(40.0)	

Unpublished data

Results: Cardiovascular Disease Risk Factors

	Total (N=240)	Intervention (N=120)	Enhanced Usual Care (N=120)	P-value
Diabetes mellitus	60 (30)	30 (25)	30 (25)	0.61
Dyslipidemia	74 (31)	40 (33)	34 (28)	0.40
Current Alcohol use	46 (19)	35 (29)	11 (9)	<0.001
Body Mass Index (n, %)				0.60
Underweight (<18.5 kg/m^2)	1 (0.4)	0 (0)	1(0.8)	
Normal (18.5 -24.9 kg/m^2)	52(21.7)	29(24.2)	23(19.2)	
Overweight (25.0-29.9 kg/m^2)	101(42.1)	50(41.7)	51(42.5)	
Obesity (≥30 kg/m^2)	86(35.8)	41(34.2)	45(37.5)	
Complications (n, %)				
Stroke	8 (3)	3 (3)	5 (4)	0.50
Heart Failure	12 (5)	6 (5)	6 (5)	1.00
Systolic BP, mm Hg (mean ±SD)	157.6 +13.8	156.8 +14.27	158.2 +13.4	0.45
Diastolic BP, mm Hg (mean ±SD)	95.8 +9.0	95.9 +10.1	95.8 +7.8	0.93

Unpublished data

## Systolic blood pressure, mm Hg: least squares means and differences

Visit	Least Squares Means (95% CI)		Difference	P value
	Enhanced Usual Care	Intervention		
Baseline	157.5 (154.3, 160.7)	156.5 (153.5, 159.4)		
6 Months	155.9 (151.8, 159.9)	138.8 (135.0, 142.6)		
Change from baseline	-1.6 (-5.4, 2.1)	-17.7 (-21.4, -14.0)	-16.0 (-21.3, -10.8)	<0.001
12 Months	153.5 (149.8, 157.1)	130.9 (127.5, 134.4)		
Change from baseline	-4.0 (-7.6, -0.4)	-25.6 (-29.1, -22.0)	-21.5 (-26.6, -16.4)	<0.001

Least squares means are from a mixed effects regression model including all available systolic blood pressure measures, controlling for clustering within hospital and repeated measures per subject. Model was adjusted for patient characteristics of age, gender, education level, and current alcohol use.
P value is for the interaction of visit and intervention group.

Unpublished data

## Blood Pressure Control in the ADHINCRA Study
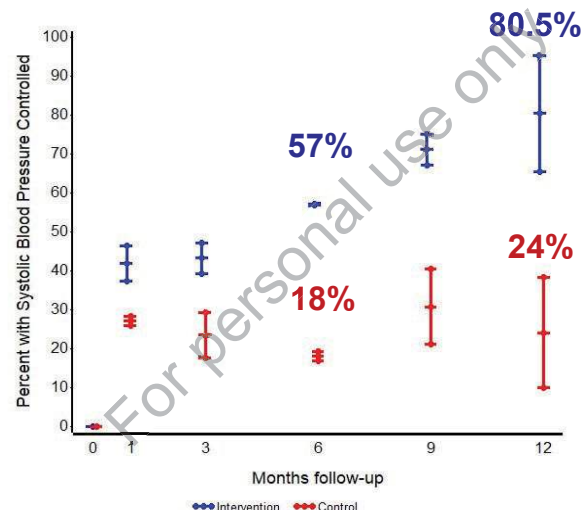
Next Steps: ADHINCRA in Ghana & Nigeria

- Pilot intervention plus
  - Treatment intensification with **simplified hypertension treatment protocol**
  - Hypertension without diabetes
- 16 facilities (800 patients)
- Hybrid type 2 effectiveness-implementation design
  - Stepped wedge design cluster-randomized trial
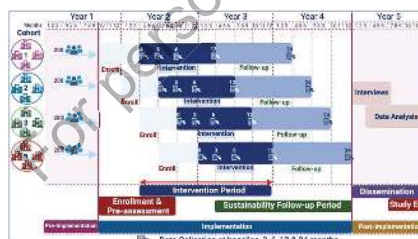
ADHINCRA Program Intervention
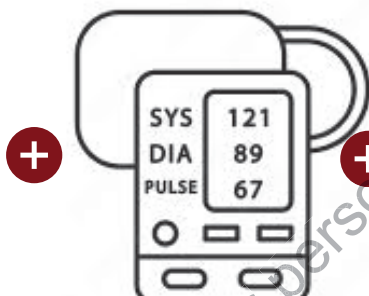
| Mhealth | Home BP Monitoring | Nurse-led team-based care | Treatment Protocol |

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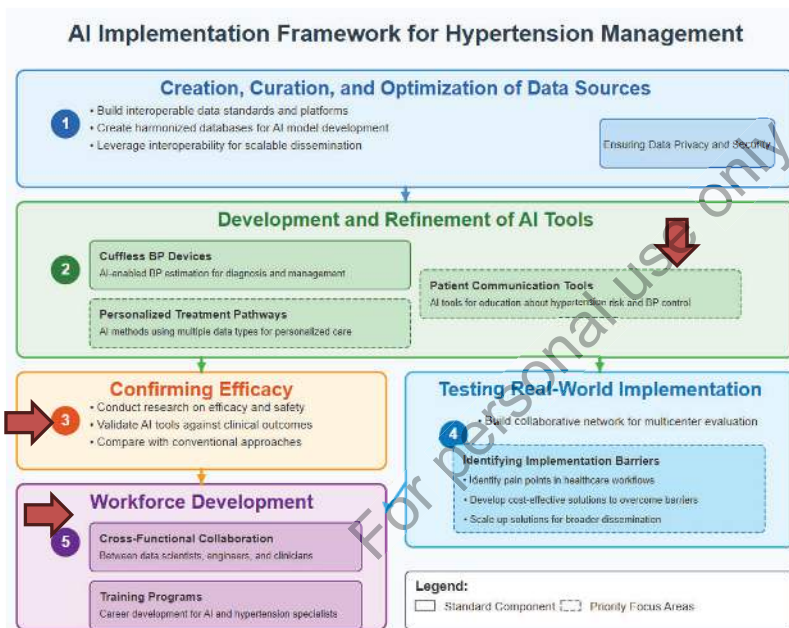Patricia Akyeampong, MBCHB (RA)

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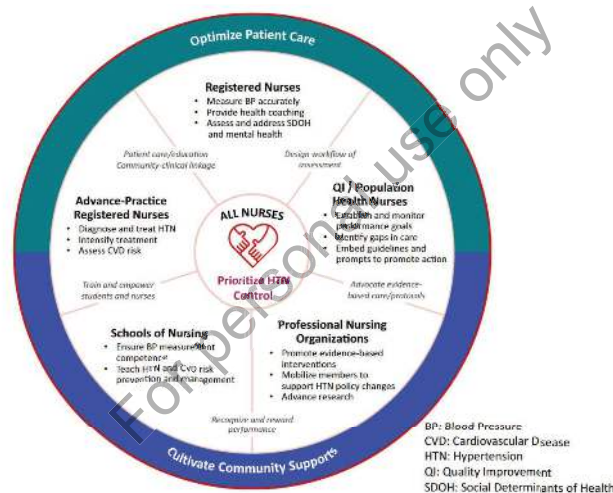
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AI Implementation Framework for Hypertension Management

Call to Action for Nurses and Midwives

BP: Blood Pressure
CVD: Cardiovascular Disease
HTN: Hypertension
QI: Quality Improvement
SDOH: Social Determinants of Health

Hannan JA, Commodore-Mensah Y, Tokieda N, Smith AP, Gawlik KS, Murakami L, Cooper J, Koob S, Wright KD, Cassarino D, Arslanian-Engoren C, Melnyk BM. Improving hypertension control and cardiovascular health: An urgent call to action for nursing. Worldviews Evid Based Nurs. 2022 Feb;19(1):6-15. doi: 10.1111/wvn.12560. Epub 2022 Feb 8. PMID: 35137506; PMCID: PMC9305122.

CARDIOVASCULAR NURSING SYMPOSIUM

THANK YOU

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