



HEARTS in America Program Update 2024: Improving Hypertension Control

February 21, 2024



Health Quality Innovation Network



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The HQIN **HEARTS in America** series was delivered by **HEARTS** subject matter experts. They introduced the pillars of the <u>HEARTS Technical Package</u> while beginning the conversation about HEARTS in America and addressing critical topics associated with Hypertension.



Objectives



Review the Global HEARTS Initiative and HEARTS in the Americas Program: Pillars, technical package, implementation, and progress to date to improve hypertension control.



Recognize the importance of the development of a primary care, populationbased approach using a standardized pharmacologic protocol in the treatment of hypertension.



Identify and address the key barriers and clinical drivers to improve hypertension control.



Improve outcomes by integrating the diagnosis, management and recognition of hypertension, diabetes mellitus, and chronic kidney disease,

Polling Question

How familiar are you with HEARTS in America?

- a. I am not familiar with it.
- b. I've heard of it.
- c. I'm familiar with HEARTS and its components
- d. I am using HEARTS





PROGRESS OF THE HEARTS IN THE AMERICAS PROGRAM 2024: IMPORTANCE TO INCREASING HYPERTENSION CONTROL

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HQIN PRESENTATION FEBRUARY 21, 2024



Process for Successful Change: Kotter

Establish a "sense of urgency/burning platform"

- •Form a powerful coalition/allies
- Create a vision for change
- Communicate the vision
- Empower others to act on the vision/remove obstacles
- Build on the change/create short-term wins
- Consolidate improvements producing more change
- •Anchor the change/institutionalize the new approaches

Change: "Sense of Urgency/Burning Platform"

- Cardiovascular disease (CVD) is the leading cause of morbidity and mortality globally, in the nation. Hypertension is the leading risk factor for CVD.
- The control rate of hypertension (<140/90 mmHg) in the U.S. is a dismal 45%. Globally the control rate of hypertension is 20%.
- Safe, effective, and affordable pharmacologic treatment for hypertension is available.
- Start discussions regarding the efficacy of current practices.
- Examine opportunities to increase the control rate of hypertension.

Centers for Disease Control and Prevention. <u>Hypertension Cascade: Hypertension Prevalence, Treatment and Control Estimates Among U.S. Adults Aged 18</u> Years and Older Applying the Criteria from the American College of Cardiology and American Heart Association's 2017 Hypertension Guideline—NHANES <u>2015–2018</u>. Atlanta, GA: U.S. Department of Health and Human Services; 2021. Accessed March 12, 2021.



Recent NHANES Data: U.S. Population Results: A call to action! (JAMA 2020)

- Hypertension control rates (using <140/90 mmHg) continued to increase to 53.8% in the 2013-2014 survey
- However, hypertension control rates (using <140/90 mmHg) have significantly decreased to 43.7% in the last 2017-2018 survey and have continued to the present
- Using the ACC-AHA criteria of <130/80 mmHg, the hypertension control rate is 19% in the 2017-2018 survey
- This decrease in control rate parallels the recent increase in CVD-related morbidity and mortality!



Declining HTN Control Rates: The U.S. Surgeon General's Call to Action to Control Hypertension-2020

Overall Goal: "To avert the negative health effects of hypertension across the U.S. by identifying interventions that can be implemented, adapted, and expanded across diverse settings"

- **Goal 1.** Make hypertension control a national priority.
- **Goal 2.** Ensure that the places where people live, learn, work. and play support hypertension control.
- Goal 3. Optimize patient care for hypertension control.
 - Strategy A. Advance the use of standardized treatment approaches and guideline recommended care including a hypertension formulary and treatment protocol

www. surgeongeneral.gov



Approaches to Care in the Pharmacologic Treatment of Hypertension



DiPette, Ridley 2020 Skeete, Connell, Ordunez, DiPette. Integrated



Where HEARTS in the Americas Began



Global Hearts Initiative





WHO. Global Hearts Initiative. https://www.who.int/cardiovascular_diseases/global-hearts/en/

https://www.paho.org/en/hearts-americas

HE | RTS

echnical nackage for cardiovascular dis

management in primary health care

F-W-

Systems for monitoring



HEARTS in the Americas

71314

(19,479)

2025



HEARTS in the Americas Technical Pillars

VISION: HEARTS will be the institutionalized model of care for cardiovascular risk management, with special emphasis on the control of hypertension and secondary prevention in primary health care in the Americas by 2025.



MODULES OF THE HEARTS TECHNICAL PACKAGE						
		Who are the target users?				
Module	What does it include?	National	Subnational	Primary care		
ealthy-lifestyle	Information on the four behavioural risk factors for CVD is provided. Brief interventions are described as an approach to providing counselling on risk factors and encouraging people to have healthy lifestyles.		~	~		
vidence-based protocols	A collection of protocols to standardize a clinical approach to the management of hypertension and diabetes.		~	~		
ccess to essential medicines and technology	s to nedicines ology		~	~		
Risk-based CVD	Information on a total risk approach to the assessment and management of CVD, including country-specific risk charts.		~	~		
Team-based care	Guidance and examples on team-based care and task shifting related to the care of CVD. Some training materials are also provided.		~	~		
Systems for monitoring	Information on how to monitor and report on the prevention and management of CVD. Contains standardized indicators and data- collection tools.	~	~	~		

HEARTS in the Americas – Guiding Principles



Traditional Model vs. HEARTS Model

Level of care	Specialty-based	Primary care-based		
Provider model	Physician-centered	Team-based care with task shifting		
Training and education	Not standardized and centered on specialist	Standardized and focused on the primary health care team		
Decision making	Individualized and based on complex clinical guidelines	Standardized clinical pathway with a specific treatment protocol		
BP measurement	Non-standardized technique. BPMDs may not be clinically validated and BP accuracy is not guaranteed	Adoption of standardized technique and regular training. Exclusive use of automated BPMDs clinically validated		
Thereapeutic approach	Physician preferences and complex medication- based pharmacologic formularies	Standardized, simple, directive treatment algorithm using FDC and specific, timely follow-up intervals.		
CVD risk evaluation	Discretionary	Integrated into the standardized clinical pathway and focus on CVD secondary prevention, including diabetes		



Characteristics of High Performing Health Systems

In addition to focusing on outcome measures:

- Identify key drivers
- Translate key drivers into process measures
- Performance feedback to front-line clinicians and clinics





IN THE AMERICAS

Key Drivers Identified

Domain	Key Driver	Recommendations
Diagnosis	BP measurement accuracy	Training, standardized protocol, validated monitors
	CVD risk assessment	Assess in all patients; statins and ASA as appropriate
Treatment	Standardized treatment protocol	Specific medication with doses, use of FDC
	Treatment intensification	Initiate treatment after diagnosis; titrate when BP above goal
Continuity of care and follow-up	Continuity of care and follow-up	F/u within 4 weeks if uncontrolled; 3-6 months if controlled
Delivery system	Team-based care and task shifting	BP measurement, f/u BP visit, medication titration
	Medication refill frequency	3-month refills
System for performance evaluation	System for performance evaluation with feedback	Monthly performance feedback

Brettler JW ate al. Lancet Reg Health Am 2022.https://www.thelancet.com/journals/lanam /article/PIIS2667-193X(22)00040-0/fulltext

> 1. BP measurement accuracy

2. CVD risk assessment



4. Treatment intensification



5. Continuity of care and follow-up

6. Team-based care and task-shifting

7. Medication refill frequency

8. System for performance evaluation with feedback



Hypertension Clinical Pathway



Driver -Accurate BP Measurement

Recommendation: Repeat BP when initial BP elevated.

Evidence: Reliability of single office BP measurement:

- 34% of initially elevated BPs normalized with recheck
- In 24%, SBP dropped more than 10 mm.¹

Opportunity: BP repeated only 23% of time when initial reading elevated²

Support: ACC/AHA 2017, ESC/ESH 2018, ISH 2020, AHA Scientific Statement Measurement of BP in Humans 2019

• ¹Burkhard et al, Heart 2018 Jul 104 (14)

• ²Cooper-DeHoff et al, J Am Heart Assoc. 2021: 10:e022224

CVD Risk Assessment

- SPRINT clinical trial: benefit of more intensive treatment in high risk
- Meta-analysis of individual participant data from 11 trials and 48K participants: CVD risk strategy avoided more CV events than BP strategy alone*
- WHO 2021: target SBP < 130 in high-risk patients (CVD, DM, CKD)
- *Karmali et al, PLOS Medicine 2018; 15(3)



TREATMENT PROTOCOL

START TREATMENT IMMEDIATELY AFTER CONFIRMING HYPERTENSION Blood Pressure ≥140/90 mmHg in all HYPERTENSIVES. Systolic Blood Pressure ≥130 mmHg in HIGH-RISK HYPERTENSIVES (Established cardiovascular disease, Diabetes, Chronic Kidney Disease, Risk score ≥ 10%)

Cardiavaa aular riak	All	HIGH-RISK Hypertensives			
Gardiovascular risk	Hypertensives	WITH established cardiovascular disease	WITHOUT established cardiovascular disease		
Blood Pressure TARGET <140/90 mmHg	\checkmark				
Systolic Blood Pressure TARGET <130 mmHg		\checkmark	\checkmark		
ASPIRIN 100 mg/daily		\checkmark			
High-dose statins: ATORVASTATIN 40 mg/daily		\checkmark			
Moderate-dose statins: ATORVASTATIN 20 mg/daily			\checkmark		



Body mass index between 18.5 and 24.9









Advantages of Combination Pharmacologic Therapy

- Most eventually need multiple drugs
- Greater efficacy (additive or synergistic)-improves blood pressure control rates
- Allows lower dosages of each of the 2 drugs
 - More effective than a higher dose of either single drug
 - Reduced side effects
- Simplified treatment regimen: better adherence
- Reduces clinical inertia
- When complementary drug classers are chosen, lowers BP equally across diverse demographic groups
- Economic benefits
 - Lower health care costs and fewer office visits

Driver – Standardized Treatment Protocol

Recommendation: Use established protocol with FDC

Evidence:

- Most patients require more than one medication.¹
- FDCs improve adherence, control, and decrease length of time to achieve control.²

Opportunity: FDCs used in only 19% of patients in the US 2013-2016.³

Support: WHO 2021 HTN guideline, ISH 2020, ESC/ECH 2018, ACC/AHA 2017

- ¹Whelton et al, JACC 2018; 71 (19)
- ²Derrington et al, J Hum Hypertension 2020; 34 (9)
- ³Derrington et al, Hypertension 2020; 75 (4)



Treatment Intensification Driver

• In a recent study of 25 US health systems, when medication was added for uncontrolled BP:

- SBP decreased by 15 mm Hg
- Cooper-DeHoff et al, J Am Heart Assoc. 2021;10:e022224

Patients under control	Minimum 6-MONTH	Minimum 3-MONTH	Supply medicines	Vaccination		
	follow-up follow-up		for 3 MONTHS	Influenza	Pneumococcus	COVID
All Hypertensives	\checkmark		\checkmark			\checkmark
HIGH-RISK Hypertensives			\checkmark	\checkmark	\checkmark	
Country name Entity name						
		HERTS	ASSESS TREATMENT ADHERENCE AT EACH VISIT			This protocol is NOT INDICATE
			TAKE ALL MEDICATION	s at the same	TIME EVERY DAY	in WOMEN of
						AGE

The Hypertension Clinical Pathway is the fundamental tool for the HEARTS implementation, catalyzing the recommendations of the new WHO CPG and the Drivers for Hypertension Control.

Utilizing the Electronic Health Record (EHR)

- A New Hypertension Smart Set was created within EHR to guide providers
- Incorporates new hypertension algorithm for primary care
- Follow-up options include a 2-week nurse follow-up for BP check
- Secondary work-up is easy to order and guides toward proper tests

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Reference & Informatio	n
 Hypertension Reminder 	S
- Target BP less than 14 - Consider combination th - Appropriate antihyperter	/90 for most patients, with a systolic goal less than 130 mmHg for patients with Diabetes, CKD, ASCVD or at high risk for ASCVD. erapy, ideally as a fixed dose combination pill, for all patients requiring pharmacotherapy to reduce side effects and increase efficacy. sive drug choice is dependent upon the presence of comorbid conditions.
▼ Lab	
 For patients taking a direction 	retic or an ARB or ACE inhibitor, obtain a serum potassium, and either a serum creatinine or a BUN at least annually
 Hematology & Coagula Chemistry Urine 	tion
 Other Diagnostics 	
ECG 12 Lead	
 Secondary Workup 	
Vascular ultrasound re Routine, Ancillary Perform	al artery complete 📕
Echocardiogram Comp Routine, Ancillary Perform	lete (Initiate Ultrasound Enhancing Agent and Bubble Study Protocol for Echocardiogram in Adults) 📕 ed
Home Sleep Testing	
Aldosterone Renin Rat	o 🔳
Prescriptions	
 Consults & Referrals 	
Referrals	
Disposition & Discharge	
▼ Follow-up	
O appointment in 2 week	is for nurse visit
O appointment in 1 mon	th
O appointment in 3 mon	ths
O appointment in 4 mon	ths
O appointment in 6 mon	ths



Special report

Integrating hypertension and diabetes management in primary health care settings: HEARTS as a tool

David Flood¹*, Elizabeth W. Edwards²*, David Giovannini³, Emily Ridley³, Andres Rosende⁴, William H. Herman¹, Marc G. Jaffe⁶ and Donald J. DiPette²

Suggested citation Flood D, Edwards EW, Giovannini D, Ridley E, Rosende A, Herman WH et al. Integrating hypertension and diabetes management in primary health care settings: HEARTS as a tool. Rev Panam Salud Publica. 2022;46:e150. https://doi.org/10.26633/ RPSP.2022.150

Integrated Management of Diabetes and Hypertension: Critical Role of HEARTS

Primary Pathophysiology



FIGURE 1. Overlapping risk factors and management of hypertension and diabetes



TABLE 1. Deaths attributable to modifiable risk factors in the Americas

	Leading risks 1990	Percentage of deaths 1990		Leading risks 2019	Percentage of deaths 2019	Total deaths 2019 (thousands)
1	Tobacco	18.8	₹1	High systolic blood pressure	16.9	1 230
2	High systolic blood pressure	18.0	2	<u>High fasting plasma glucose</u>	14.7	1 064
3	Dietary risks	14.5	3	Tobacco	14.4	1 043
4	High LDL cholesterol	10.9	4	High body-mass index	13.0	940
5	High fasting plasma glucose	10.4	5	Dietary risks	12.6	916
6	High body-mass index	8.9	6	Kidney dysfunction	7.6	550
7	Child and maternal malnutrition	7.9	7	High LDL cholesterol	7.3	528
8	Air pollution	7.0	8	Alcohol use	5.1	370
9	Kidney dysfunction	5.2	9	Air pollution	4.1	298
10	Alcohol use	4.5	10	Non-optimal temperature	3.1	225

Source: Prepared by the authors using estimates from the Global Burden of Disease study (1). Note: The arrows refer to changes in order ranking for high systolic blood pressure and high fasting plasma glucose from 1990 to 2019.

Definition of CKM Syndrome Simplified

Cardiovascular-kidney-metabolic (CKM) syndrome is a health disorder due to connections among heart disease, kidney disease, diabetes, and

obesity leading to poor health outcomes.





Abbreviations: CKM indicates Cardiovascular-Kidney-Metabolic.

Scientific Understanding of CKM Syndrome

CKM syndrome results in excess morbidity and mortality beyond the sum of its parts.

Metabolic risk factors cause end-organ damage in the heart, kidneys, and vasculature. Mechanisms of endorgan injury are hemodynamic, metabolic, inflammatory, and fibrotic.



Abbreviations: CKM indicates Cardiovascular-Kidney-Metabolic.

Ndumele, C.E. et al., A Synopsis of the Evidence for the Science and Clinical Management of Cardiovascular-Kidney-Metabolic Syndrome: A Scientific Statement From the American Heart Association. 2023. *Circulation*.

Scientific Understanding of CKM Syndrome Chronic Kidney Disease as an Amplifier of Cardiovascular Risk



Low glomerular filtration rate and albuminuria independently increase the risk of MACE and CV death



Pro-inflammatory state which potentiates CVD risk



CKD and diabetes precipitate peripheral artery disease below the knee



Development of heart failure and/or progressive CKD can increase bidirectional organ damage, in tandem with neurohormonal activation and inflammation



Vascular calcification is common in CKD and increases CVD risk



Anemia is common in CKD and exacerbates CVD



Abbreviations: CKD indicates chronic kidney disease; CKM, Cardiovascular-Kidney-Metabolic; CV, cardiovascular; CVD, cardiovascular disease; and MACE, major adverse cardiovascular events.

Ndumele, C.E. et al., A Synopsis of the Evidence for the Science and Clinical Management of Cardiovascular-Kidney-Metabolic Syndrome: A Scientific Statement From the American Heart Association. 2023. *Circulation*.



Progress of the HEARTS in the Americas Program: Closing Thoughts

"START WITH THE END IN MIND": INCREASING HYPERTENSION CONTROL

- Comprehensive, evidence, population and primary care-based, aligned with current major hypertension guidelines, and proven success
- Stresses the importance of appropriate measurement of blood pressure, cardiovascular risk factor assessment, and the use of a standardized pharmacologic treatment algorithm
- Importance of timely patient follow-up, rapid medication titration, and vaccinations
- Details the hypertension clinical pathway and critical clinical drivers to achieve rapid hypertension control
- Moves toward the integration of the management and treatment of hypertension, diabetes, and kidney





Thank You





Kansas • Missouri • South Carolina • Virginia







Polling Question

Based on today's session, which of the following actions will you take?

- a. Review HEARTS materials.
- b. Share information with colleagues.
- c. Reach out to HQIN Advisor to discuss further.
- d. Review our current hypertension practices







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