ISH2024 IN REVIEW

Innovations for improving hypertension and cardiovascular disease risk management in primary care

ANDRES ROSENDE AND PEDRO ORDUNEZ
Pan-American Health Organization, Washington D.C. USA

Cardiovascular diseases (CVDs) continue to be the leading cause of death in the Americas, claiming the lives of 2 million people annually. Hypertension is its main risk factor and affects over one-third of adults in the region.[1] Poor blood pressure control is determined in CVD mortality. Despite advances in treatment, hypertension control rates remain suboptimal, with a diagnostic gap greater than 30% and a control rate among treated patients that barely exceeds 60%. This results in less than one-third of people with hypertension in the Americas having their blood pressure values at target.[2]

The Pan American Health Organization (PAHO) coordinates the implementation of HEARTS in the Americas, as a regional adaptation of the World Health Organization's (WHO) global HEARTS initiative. This initiative addresses the challenge of improving cardiovascular prevention through a comprehensive approach focused on primary health care. HEARTS in the Americas has expanded rapidly, with 33 countries in Latin America and the Caribbean committed to integrating it into their primary care networks and over 6,500 PHC centers currently implementing the model that reaches over 4.5 million people in treatment.[3]

The program is based on eight key drivers, which include accurate blood pressure measurement, cardiovascular risk assessment, a standardized treatment protocol, treatment intensification, follow-up frequency, team-based care, medication refill frequency, and a system for performance evaluation.[4] These drivers are integrated with the recommendations of the WHO Guideline for the pharmacological treatment of hypertension in adults and other top-level international guidelines.[5]

The instrument for implementing these actions is the HEARTS Clinical Pathway, a decision support tool that guides health professionals in the comprehensive management of hypertension and CVD risk.[6] This clinical pathway promotes a pragmatic and standardized approach for most people with hypertension, simplifying the risk stratification process, therapeutic interventions, and continuity of care. First, the HEARTS Clinical Pathway includes a standardized protocol for blood pressure measurement and recommends the use of clinically validated automated blood pressure measuring devices. While the HEARTS Clinical Pathway keeps recommending the WHO CVD-risk charts to classify patients, it introduces a pragmatic approach considering diabetes, chronic kidney disease, and established CVD as high-risk equivalents.[7] The hypertension treatment protocol included in the center of the clinical pathway recommends starting pharmacological treatment immediately after the diagnosis of hypertension and use combinations of medications in a single pill, defining specific drugs and doses in each step of the protocol, in order to reduce clinical inertia and inappropriate variability in practice. The HEARTS Clinical Pathway also recommends the use of moderate-intensity treatment with statins in high-CVD risk patients in primary prevention, while prescribes aspirin and high-intensity therapy

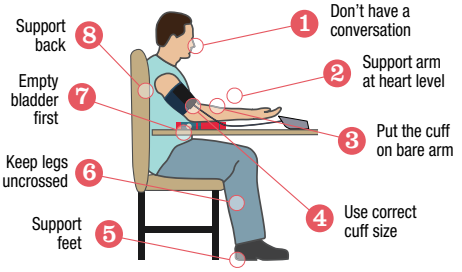
Figure 1. HEARTS Clinical Pathway

HEARTS Clinical Pathway

A — ACCURATE BLOOD PRESSURE MEASUREMENT

MEASURE BLOOD PRESSURE IN ALL ADULTS AND AT ALL VISITS

Whenever available, use validated automatic devices for the arm.



B — CARDIOVASCULAR RISK

KNOW YOUR RISK OF CARDIOVASCULAR DISEASE AND HOW TO MODIFY IT

CARDIOVASCULAR RISK CALCULATOR

Use the **HEARTS** App to assess your cardiovascular risk

Scan code to access the cardiovascular risk calculator

This App does not replace clinical judgment.

C — 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%)

Cardiovascular risk		All Hypertensives	HIGH-RISK Hypertensives	
			WITH established cardiovascular disease	WITHOUT established cardiovascular disease
Blood Pressure **TARGET <140/90 mmHg**		✓		
Systolic Blood Pressure **TARGET <130 mmHg**			✓	✓
ASPIRIN 100 mg/daily			✓	
High-dose statins:	ATORVASTATIN 40 mg/daily		✓	
Moderate-dose statins:	ATORVASTATIN 20 mg/daily			✓

Avoid alcohol consumption

Body mass index between 18.5 and 24.9

Avoid foods high in sodium

1 1 Tablet of Telmisartan/Amlodipine 40/5 mg

1 MONTH

2 Patient above target after repeat measurement
1 Tablet of Telmisartan/Amlodipine 80/10 mg

1 MONTH

3 Patient above target after repeat measurement
1 Tablet of Telmisartan/Amlodipine 80/10 mg
+ ½ Tablet of Chlorthalidone 25 mg

1 MONTH

4 Patient above target after repeat measurement
1 Tablet of Telmisartan/Amlodipine 80/10mg
+ 1 Tablet of Chlorthalidone 25 mg

1 MONTH

Patient above target:
Refer to the next level of care

Do 30 minutes of physical activity daily

Keep a healthy diet

No smoking

Patients under control	Minimum 6-MONTH follow-up	Minimum 3-MONTH follow-up	Supply medicines for 3 MONTHS	Vaccination		
				Influenza	Pneumococcus	COVID
All Hypertensives	✓		✓			✓
HIGH-RISK Hypertensives		✓	✓	✓	✓	✓

PAHO
Pan American Health Organization
World Health Organization Americas

HE RTS

Proposal of Standard Clinical Pathway
developed by the HEARTS in the Americas Team

*The medications serve as examples and can be replaced with any two medications from any of the three drug classes (ACEis/ARBs, CCBs or thiazide/thiazide-like diuretics). Start with a single-pill combination (fixed-dose combination) or two individual pills if FDC is not available. Atorvastatin serve as an example and can be replaced for other statins.

ASSESS TREATMENT ADHERENCE AT EACH VISIT

TAKE ALL MEDICATIONS AT THE SAME TIME EVERY DAY

This protocol is **NOT INDICATED** in **WOMEN** of **CHILDBEARING AGE**

with statins in secondary prevention. Lastly, this clinical pathway includes a vaccination chart acknowledging the relevance that influenza, pneumococcus and COVID vaccines have as strategies for CVD prevention. So far, 28 countries in the Americas have adopted and adapted the HEARTS Clinical Pathway according to their own local resources and guidelines, while raising the standard of care with minimal variation between countries.[8]

Thus, PAHO continues to work with governments, health professionals, and communities in the Americas to redouble their efforts in the fight against hypertension and CVD. HEARTS in the Americas provides a proven and effective framework to strengthen primary care systems and improve cardiovascular health in the population. Even in developed countries, expanding this program is crucial to improve hypertension control, enhance CVD prevention in an integrative manner, and finally achieve the Sustainable Development Goal target of reducing premature mortality from NCDs by one-third by 2030.[9]

References

1. Martinez R, Soliz P, Campbell NRC, Lackland DT, Whelton PK, Ordunez P. Association between population hypertension control and ischemic heart disease and stroke mortality in 36 countries of the Americas, 1990-2019: an ecological study. Rev Panam Salud Publica. 2022 Sep 16;46:e143. doi: 10.26633/RPSP.2022.143.

2. World Health Organization (September 19, 2023). Global report on hypertension: the race against a silent killer. Available at: https://www.who.int/publications/i/item/9789240081062

3. Ordunez P, Campbell NRC, DiPette DJ, Jaffe MG, Rosende A, Martinez R, et al. HEARTS in the Americas: Targeting Health System Change to Improve Population Hypertension Control. Curr Hypertens Rep. 2024 Apr;26(4):141-156. doi: 10.1007/s11906-023-01286-w.

4. Brettler JW, Arcila GPG, Aumala T, Best A, Campbell NR, Cyr S, et al. Drivers and scorecards to improve hypertension control in primary care practice: Recommendations from the HEARTS in the Americas Innovation Group. Lancet Reg Health Am. 2022 May;9:None. doi: 10.1016/j.lana.2022.100223.

5. Campbell NRC, Paccot Burnens M, Whelton PK, Angell SY, Jaffe MG, Cohn J, Espinosa Brito A, Irazola V, Brettler JW, Roccella EJ, Maldonado Figueredo JI, Rosende A, Ordunez P. 2021 World Health Organization guideline on pharmacological treatment of hypertension: Policy implications for the region of the Americas. Lancet Reg Health Am. 2022 May;9:None. doi: 10.1016/j.lana.2022.100219.

6. Rosende A, DiPette D, Brettler J, Rodríguez G, Zuniga E, Connell K, et al. HEARTS in the Americas appraisal checklist and clinical pathway for comprehensive hypertension management in primary care. Rev Panam Salud Publica. 2022;2(46):e125. https:// doi. org/ 10. 26633/ RPSP. 2022. 125.

7. Ordunez P, Tajer C, Gaziano T, Rodriguez YA, Rosende A, Jaffe MG. The HEARTS app: a clinical tool for cardiovascular risk and hypertension management in primary health care. Rev Panam Salud Publica. 2022 Mar 28;46:e12. doi: 10.26633/RPSP.2022.12. PMID: 35355690; PMCID: PMC8959249.

8. Rosende A, DiPette DJ, Martinez R, Brettler JW, Rodriguez G, Zuniga E, et al. HEARTS in the Americas clinical pathway. Strengthening the decision support system to improve hypertension and cardiovascular disease risk management in primary care settings. Front Cardiovasc Med. 2023;10:1102482. https:// doi. org/ 10. 3389/ fcvm. 2023. 11024 82.

9. Campbell NRC, Ordunez P, Giraldo G, Rodriguez Morales YA, Lombardi C, Khan T, et al. WHO HEARTS: A Global Program to Reduce Cardiovascular Disease Burden: Experience Implementing in the Americas and Opportunities in Canada. Can J Cardiol. 2021 May;37(5):744-755. doi: 10.1016/j.cjca.2020.12.004.

Andres Rosende – rosendeand@paho.org

Pedro Ordunez – ordunezp@paho.org