HEARTS IN THE AMERICAS
Compendium of Essential Clinical Tools

2023

PAHO

Pan American Health Organization

World Health Organization
REGIONAL OFFICE FOR THE Americas

HEARTS IN THE AMERICAS

HEARTS in the Americas. Compendium of essential clinical tools 2023

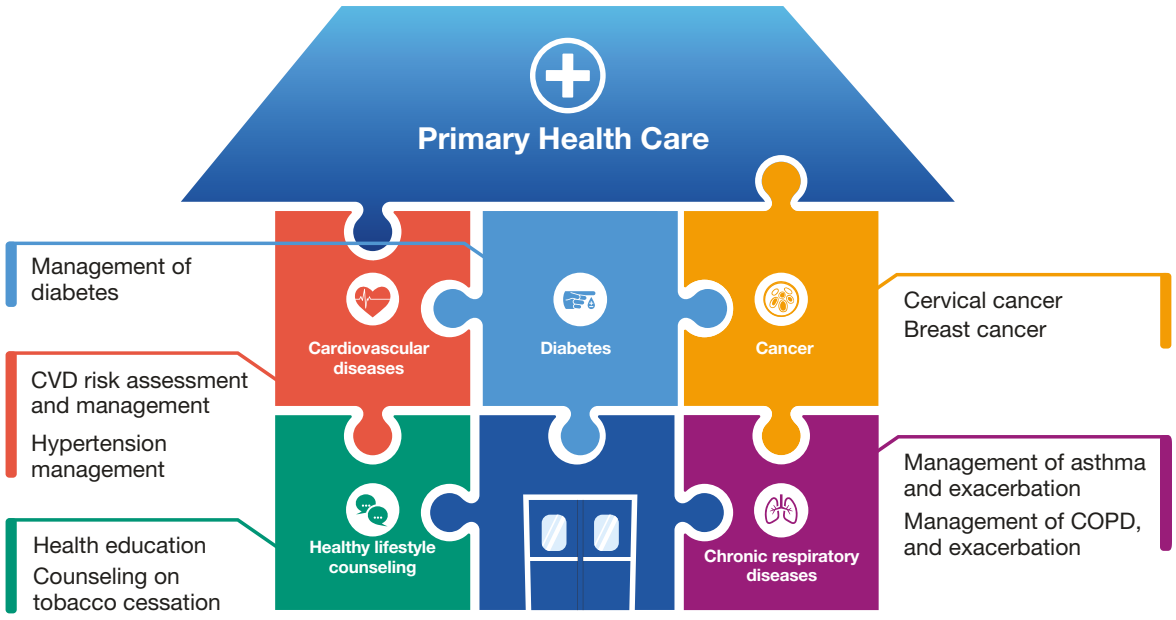
PAHO/NMH/NV/24-0002

HEARTS in the Americas for Better Care for Noncommunicable Diseases (NCDs) in Primary Care Settings

HEARTS in the Americas is an operational framework that will contribute to increasing equitable access to comprehensive NCD management in primary health care (PHC) under PAHO's new initiative "Better Care for NCDs: Accelerating Actions in Primary Health Care."

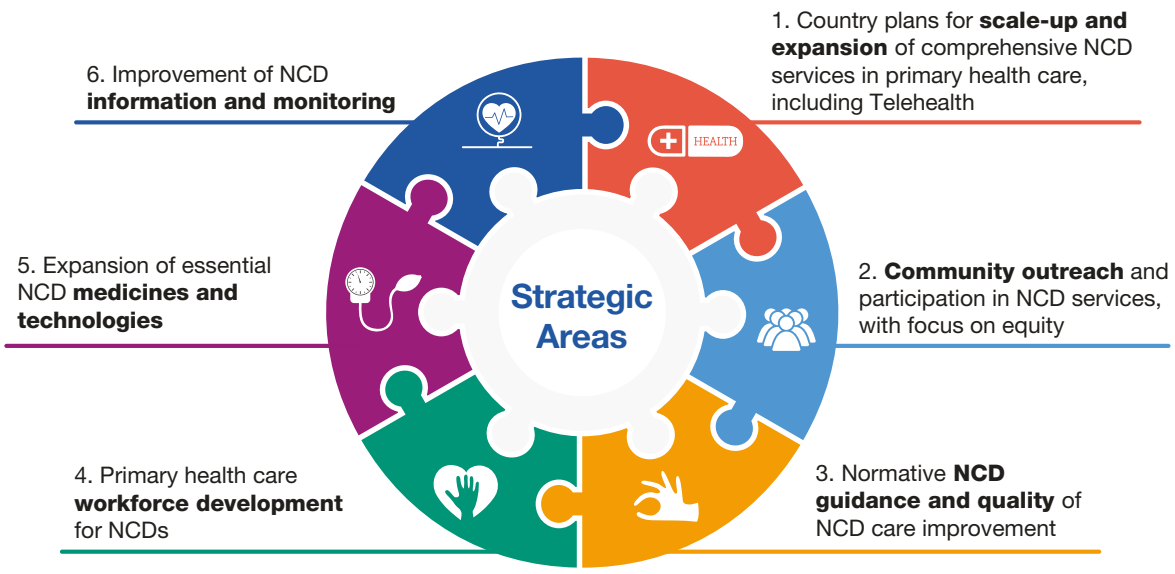
Better Care for NCDs
Accelerating Actions in Primary Health Care

Expanding equitable access to integrated and comprehensive NCD services in primary health care by:



- Strengthening the capacity of health authorities to plan and implement this approach.
- Increasing the capacity of health services to deliver comprehensive quality screening, diagnosis, treatment, and follow-up.
- Strengthening data collection and monitoring.

Multidisciplinary approach focused on six strategic areas:



HEARTS in the Americas
A platform for expanding comprehensive NCD services

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HEARTS IN THE AMERICAS

Introduction

Cardiovascular diseases are the leading cause of mortality and morbidity in the Region of the Americas and hypertension is their main risk factor. Despite the remarkable progress made in the last four decades, the observed trend of declining mortality from these diseases has slowed in most countries, and has even started to increase in a group of them. This scenario puts at risk the goal of reducing premature mortality from noncommunicable diseases (NCDs) by 30% by 2030, a commitment made by all countries in the Region.[1]

There is a strong association between the level of hypertension control in the population and mortality from cardiovascular diseases. Countries with higher levels of population control of hypertension have achieved greater reductions in mortality from these diseases. In the Americas, for every 1% increase in the level of control of hypertension in the population, there is an estimated 2.9% reduction in deaths from ischemic heart disease per 100 000 population, equivalent to 25 639 avoidable deaths (2.5 deaths per 100 000 population) and 2.37% reduction in deaths from stroke per 100 000 population, equivalent to 9650 avoidable deaths (1 death per 100 000 population). Indeed, if Latin America and the Caribbean increased the level of population control of hypertension from 28.7% to 50%, about 459 000 deaths could be avoided (331 000 from ischemic heart disease and 128 000 from stroke).[2]

The slowdown in the cardiovascular disease mortality decline in the Americas, combined with suboptimal levels of hypertension control, suggests that the current healthcare services model is exhausted, and a paradigm shift is imperative. In this context, the HEARTS in the Americas Initiative by the Pan American Health Organization (PAHO) was born as a regional adaptation of the World Health Organization (WHO) Global HEARTS Initiative. HEARTS in the Americas will be the institutionalized model for hypertension control and comprehensive cardiovascular risk management throughout the Region by 2025. Based on primary care, this initiative is led by health ministries and supported technically by PAHO. It is currently being implemented in 33 countries in the Region and aims to be fully integrated into each country's healthcare system.[3]

HEARTS in the Americas has developed several tools to assist healthcare teams in their daily work and encourage them to seek continuous quality improvement to achieve the desired objectives. These clinical tools have been compiled in this document for easy access.

Purpose

The purpose of *HEARTS in the Americas: Compendium of Essential Clinical Tools* is to present, in a simple and instructive way, all the technical resources that the initiative has developed to facilitate the daily work of healthcare teams. The reader will notice that each tool is summarized on a single page, and it is presented in a modular format. Therefore, the tools can be used together or separately as needed.

HEARTS in the Americas proposes this simple, evidence-based, action-oriented compendium, adapted to a digital era in which scientific information overload makes it challenging to access fundamental concepts and where professionals' heavy work load does not allow them sufficient time for updating their knowledge.

The HEARTS in the Americas team hopes that this Compendium of Essential Clinical Tools aims to guide the daily work of healthcare teams and help improve current practices to provide the highest-quality and comprehensive cardiovascular risk management possible and ultimately reduce the burden of cardiovascular disease.

Authorship and acknowledgments

This Compendium of Essential Clinical Tools was prepared by Andres Rosende, International Consultant for the PAHO HEARTS in the Americas Initiative, under the technical coordination of Pedro Ordunez, Regional Advisor for Chronic Diseases and Mental Health at PAHO and technical coordinator of the HEARTS in the Americas Initiative, and with the collaborative work of the Regional HEARTS in the Americas team: Angelo Gamarra, Cintia Lombardi, Natalia Parra, Libardo Rodríguez, and Yenny Rodríguez.

Furthermore, the authors would like to thank Teresa Aumala, Alison Mundaca, Carolina Neira, Michael Pereira, Gonzalo Rodríguez, Yamilé González Valdés, and Eric Zúñiga, all healthcare and HEARTS colaborators, for their critical review and contributions to the improvement of this compendium.

1. Martinez R, Soliz P, Mujica OJ, Reveiz L, Campbell NRC, Ordunez P. The slowdown in the reduction rate of premature mortality from cardiovascular diseases puts the Americas at risk of achieving SDG 3.4: A population trend analysis of 37 countries from 1990 to 2017. J Clin Hypertens (Greenwich). 2020;22(8):1296–1309. Available from: https://doi.org/10.1111/jch.13922. ACCESS

2. 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;46:e143. Available from: https://doi.org/10.26633/RPSP.2022.143. ACCESS

3. Ordunez P, Campbell NRC, Giraldo Arcila GP, Angell SY, Lombardi C, Brettler JW, et al. HEARTS in the Americas: innovations for improving hypertension and cardiovascular disease risk management in primary care. Rev Panam Salud Publica. 2022;46:e96. Available from: https://doi.org/10.26633/RPSP.2022.96. ACCESS

Tool inventory

1. HEARTS in the Americas: a new paradigm in the prevention of cardiovascular disease
2. Protocol for standardized blood pressure measurement
3. Resources to verify if a blood pressure measuring device is clinically validated
4. HEARTS App: a pragmatic approach to estimating cardiovascular disease risk
5. The 2021 WHO guideline for the pharmacological treatment of hypertension in adults
6. Key interventions for the management of cardiovascular disease risk
7. The HEARTS in the Americas Clinical Pathway
8. Monitoring and Evaluation System for quality improvement
9. HEARTS training and education resources

1. HEARTS in the Americas: a new paradigm in the prevention of cardiovascular disease

The trend toward a reduction in cardiovascular mortality in the Americas has stagnated and even reversed in many countries. HEARTS in the Americas represents a paradigm shift in the comprehensive approach to cardiovascular disease (CVD) prevention, focusing on hypertension diagnosis and treatment as the main risk factor for CVD.

THE URGENCY

In the Region of the Americas, more people die each year from cardiovascular diseases than from any other cause, and **HYPERTENSION** is the main risk factor.

THE OPPORTUNITY

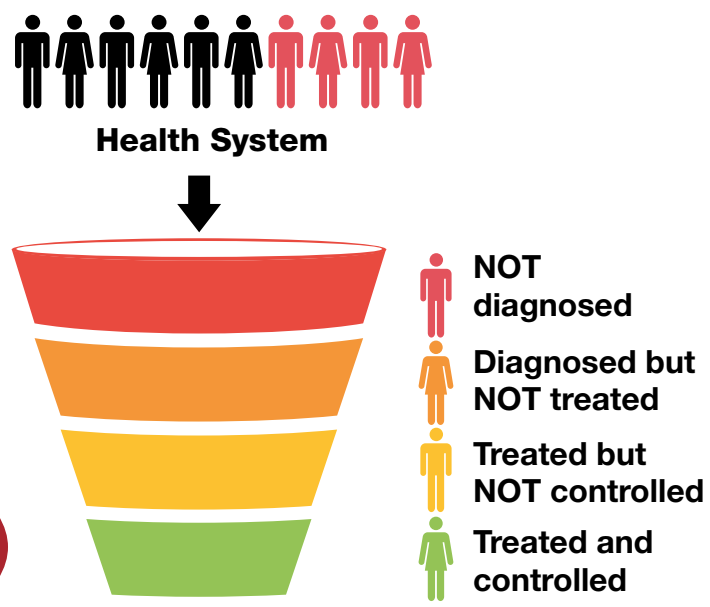
↑ **1%** **HYPERTENSION** control the population level

↓ **2.9%** **ISCHEMIC HEART DISEASE MORTALITY**

↓ **2.4%** **STROKE MORTALITY**

THE PROBLEM

4 out of **10** adults have **HYPERTENSION (BP ≥140/90)**

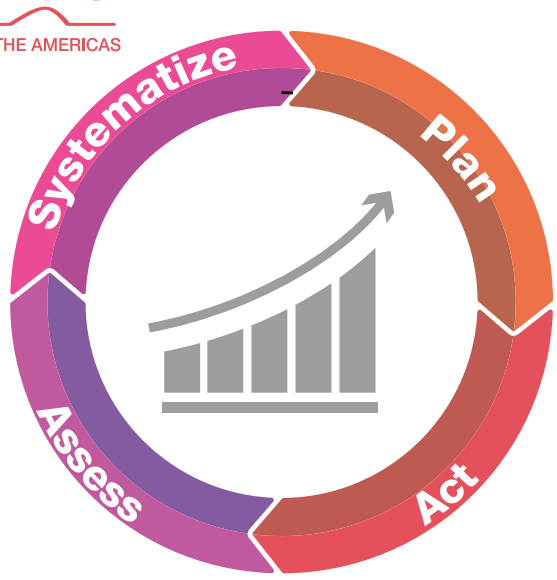


ACCESS and QUALITY gaps

- ✘ Inadequate diagnosis, nonstandardized, and using nonvalidated blood pressure measuring devices (BPMDs).
- ✘ Physician-based care with a focus on specialty care.
- ✘ Deficient and nonstandardized staff training and education.
- ✘ Discretionary treatments, highly variable, and according to physician preferences.
- ✘ Interventions based on extensive and complex clinical guidelines.
- ✘ Lack of a system for monitoring and evaluation based on quality improvement.

THE SOLUTION

HEARTS IN THE AMERICAS



- ✔ Comprehensive strategy focused on primary health care.
- ✔ Health care based on healthcare team, with nonphysician professionals playing a more prominent role.
- ✔ Standardized diagnosis using clinically validated BPMDs.
- ✔ Clinical pathway containing a standardized treatment protocol with specific medications and doses.
- ✔ Standardized training and education strategy oriented to change practice.
- ✔ System for monitoring and evaluation containing structure, process, and result indicators, based on continuous quality improvement.

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;46:e143. Available from: https://doi.org/10.26633/RPSP.2022.143. ACCESS

Ordunez P, Campbell NRC, Giraldo Arcila GP, Angell SY, Lombardi C, Brettler JW, et al. HEARTS in the Americas: innovations for improving hypertension and cardiovascular disease risk management in primary care. Rev Panam Salud Publica. 2022;46:e96. Available from: https://doi.org/10.26633/RPSP.2022.96. ACCESS

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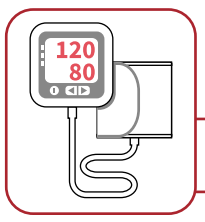
2. Protocol for standardized blood pressure measurement

Lack of standardization in blood pressure measurement is a serious and frequent problem in clinical practice that impacts patient safety and health system performance.

3 STEPS FOR ACCURATE BLOOD PRESSURE MEASUREMENT

1. Before measurement

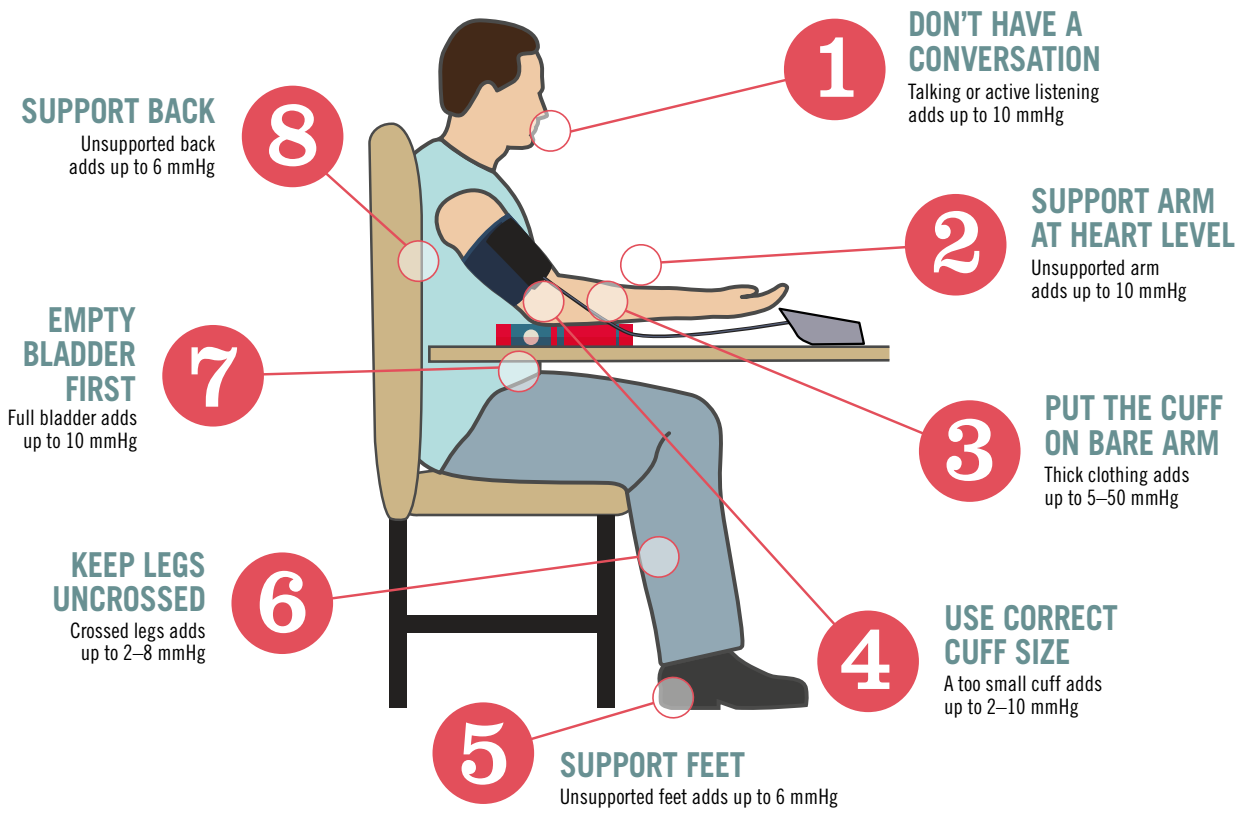
- ✔ Provide a quiet environment at a comfortable temperature.
- ✔ Explain the procedure to be performed.
- ✔ Check that the patient:
  - Has **NOT** smoked or ingested food, coffee, or alcohol in the last **30 MINUTES**
  - Has had at least **5 MINUTES** of rest.



USE A CLINICALLY VALIDATED BLOOD PRESSURE MEASURING DEVICE

2. During measurement

- ✔ **Ensure** these 8 conditions are met



3. After measurement

- ✔ **Obtain** a **SECOND MEASUREMENT** with an interval of **30 SECONDS**
- ✔ Register both **MEASUREMENTS WITHOUT ROUNDING** and calculate the **AVERAGE** to obtain the **FINAL RESULT**

Cheung AK, Whelton PK, Muntner P, Schutte AE, Moran AE, Williams B, International Consensus on Standardized Clinic Blood Pressure Measurement - A Call to Action. Am J Med. 2023;136(5):438–445.e1. Available from: https://doi.org/10.1016/j.amjmed.2022.12.015. ACCESS

Access a video on blood pressure measurement by clicking here: ACCESS

3. Resources to verify if a blood pressure measuring device is clinically validated

Clinical validation refers to the rigorous testing of blood pressure measuring devices for accuracy in clinical practice. It is essential to obtain reliable measurements that allow making appropriate therapeutic decisions, increasing patient safety. The table below includes lists of blood pressure measuring devices that have passed validation studies. Instructions on how to use these lists are shown in the reference underneath.

Websites containing lists of validated automated blood pressure measuring devices

STRIDE BP	STRIDE BP is an international scientific nonprofit organization founded by hypertension experts with the mission of improving the accuracy of blood pressure measurement and the diagnosis and management of hypertension. STRIDE BP provides international guidance and practice tools on the methodology and technology for accurate blood pressure evaluation according to the latest scientific evidence. STRIDE BP is cosponsored by the European Society of Hypertension and the International Society of Hypertension.	WEBSITE
Medaval	Medaval is a company that assesses and lists both validated and nonvalidated blood pressure devices available globally. It has the largest database. Assessment of validation status is performed according to international scientific protocols. Certification of validation according to current accuracy assessment protocols is provided by Medaval on application and payment by manufacturers. Validation and comparative-equivalence reports are peer reviewed by members from its reviewer panels. It also provides links to the recommendations of other validated device listings.	WEBSITE
US Blood Pressure Validated Device Listing (VDL)	An independent process was designed to determine which blood pressure devices available in the United States meet the American Medical Association (AMA) established criteria to validate clinical accuracy. This review process results in a formal list of blood pressure devices (the "Validated Device Listing" or "VDL"). AMA does not receive funding from manufacturers.	WEBSITE
British and Irish Hypertension Society (BIHS)	All monitors on the "Home" and "Specialist Use" lists have been approved by BIHS for accuracy. The list also includes nonvalidated devices. Those bearing the BIHS logo have been tested in-house. The rest have been tested by independent agencies, and their published reports have been peer-reviewed and approved by BIHS.	WEBSITE

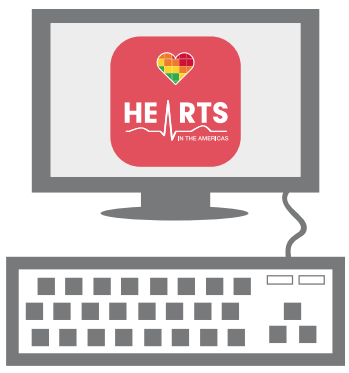
*PAHO does not endorse these lists or the devices included in them.

Picone DS, Padwal R, Campbell NRC, Boutouyrie P, Brady TM, Olsen MH, et al. How to check whether a blood pressure monitor has been properly validated for accuracy. J Clin Hypertens (Greenwich). 2020;22(12):2167–2174. Available from: https://doi.org/10.1111/jch.14065. ACCESS

4. HEARTS App: a pragmatic approach to estimating cardiovascular disease risk

Estimation of cardiovascular risk is essential to optimize healthcare system interventions. HEARTS in the Americas proposes a simple and pragmatic approach, based on the WHO hypertension guidelines, to effectively guide clinical practice. The HEARTS App is based on the following algorithm. It includes a calculator derived from the WHO cardiovascular risk tables and contains the clinical pathways defined by each country.

ACCESS TO HEARTS APP



Use the HEARTS App to assess CVD RISK in all PATIENTS WITH HYPERTENSION

People with known CVD, DIABETES, or CKD

People aged 40–74 years WITHOUT CVD, DIABETES, or CKD

Use the CVD RISK CALCULATOR available in the HEARTS App

HIGH-RISK hypertensive patient

- Initiate BP medication if SBP ≥130 mmHg
- SBP target: <130 mmHg
- Use low-dose aspirin in patients with known CVD
- Use statins (high intensity in those with known CVD)
- Monthly follow-up until BP control is achieved
- Follow up at least every 3 months if BP is under control

NON-HIGH RISK hypertensive patient

- Initiate BP medication if SBP ≥140 or DBP ≥90 mmHg
- BP target: <140/90 mmHg
- Monthly follow-up until BP control is achieved
- Follow up at least every 6 months if BP is under control

Note: BP: blood pressure; CVD: cardiovascular disease; CKD: chronic kidney disease; SBP: systolic blood pressure; DBP: diastolic blood pressure

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;46:e12. Available from: https://doi.org/10.26633/RPSP.2022.12. ACCESS

5. The 2021 WHO guideline for the pharmacological treatment of hypertension in adults

The WHO hypertension guideline is a methodologically rigorous, evidence-based document with broad international consensus focusing on implementation.

8 recommendations in 5 questions

A When TO INITIATE pharmacological TREATMENT?

R1. BP thresholds to initiate medication

- Those with a diagnosis of hypertension and BP ≥**140/90** mmHg
- Those with **CVD** and SBP **130–139** mmHg

Recommendation: ***strong***
Evidence: ***moderate-high certainty***

- Those without CVD but with **HIGH CVD RISK** and SBP **130–139** mmHg

Initiate pharmacological treatment within **4 WEEKS** of diagnosis

Recommendation: ***conditional***
Evidence: ***moderate-high certainty***

B What MEDICATIONS to use?

R4. First-line **medications**

- ACEi/ARB
- Dihydropyridine CCB
- TZ/TZ-like diuretic

Recommendation: ***strong***
Evidence: ***high certainty***

R5. Combined treatment

- **COMBINE** an **ACEi** or **ARB** + a **CCB** or a **TZ/TZ-like diuretic**

Preferably in a **SINGLE PILL COMBINATION** to improve adherence and persistence

Recommendation: ***conditional***
Evidence: ***moderate certainty***

C What are the control TARGETS?

R6. BP control **targets**

- BP <**140/90** mmHg in those **WITHOUT HIGH CVD RISK**
- SBP <**130** mmHg in those **WITH CVD**

Recommendation: ***strong***
Evidence: ***moderate certainty***

- SBP <**130** mmHg in those without CVD but with **HIGH CVD RISK**

Recommendation: ***conditional***
Evidence: ***moderate certainty***

D When to assess CVD RISK?

R2 & 3. CVD RISK

- Obtain laboratory tests and assess CVD risk systematically but only if **IT DOES NOT DELAY HYPERTENSION TREATMENT**

Recommendation: ***conditional***
Evidence: ***low certainty***

E How to establish the FOLLOW-UP intervals?

R7. Follow-up intervals

- **MONTHLY** until reaching **BP CONTROL**
- **EVERY 3–6 MONTHS** in **CONTROLLED BP**

Recommendation: ***conditional***
Evidence: ***low certainty***

R8. Team-based care

- **TREATMENT PROVIDED** by **NONPHYSICIAN PROFESSIONALS** under supervision and following a protocol

Recommendation: ***low certainty***
Evidence: ***conditional***

Note: ACEi: angiotensin converting enzyme inhibitor; ARB: angiotensin receptor blocker; CCB: calcium channel blocker; TZ: thiazide

Adapted from World Health Organization. Guideline for the pharmacological treatment of hypertension in adults: summary. Geneva: WHO; 2022. Available from: https://iris.who.int/handle/10665/356108. ACCESS

Campbell NRC, Paccot Burnens M, Whelton PK, Angell SY, Jaffe MG, Cohn J, et al. 2021 World Health Organization guideline on pharmacological treatment of hypertension: Policy implications for the region of the Americas. Lancet Reg Health Am. 2022;9:100219. Available from: https://doi.org/10.1016/j.lana.2022.100219. ACCESS

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6. Key interventions for the management of cardiovascular disease risk

Improving clinical processes is a central element in closing quality gaps in the delivery of health services and positively impacting coverage and control indicators. For this reason, the HEARTS Innovation Group has defined key interventions to achieve this.

5 Areas	8 Drivers	17 Interventions
Diagnosis	Accuracy of BP measurement	a. Blood pressure measurement training every 6 months b. Blood pressure measurement protocol c. Use automated and clinically validated BPMDs
	CVD risk assessment	a. Classify patients according their CVD risk b. Use statins and aspirin according to risk level and history of CVD
Treatment	Treatment protocol	a. Institutionalized clinical pathway b. Use fixed dose combinations
	Treatment intensification	a. Initiate treatment without delays b. Intensify treatment until reaching BP control
Continuity of care	Follow-up frequency	a. Monthly follow-up until reaching BP control b. 6-monthly follow-up in non high-risk patients with controlled BP c. 3-monthly follow-up in high-risk patients with controlled BP
Delivery system	Team-based care	a. Non physician community health workers measure BP b. Nurses follow patients c. Nurses intensify pharmacological treatment following the clinical pathway
	Medication refill frequency	a. Medication refill every 3 months
Performance evaluation	System for monitoring	a. Monitoring and evaluation system with monthly feedback

Note: BPMDs: blood pressure measuring devices

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;9:100223. Available from: https://doi.org/10.1016/j.lana.2022.100223. ACCESS

7. The HEARTS in the Americas Clinical Pathway

The clinical pathway represents the main implementation tool of the HEARTS in the Americas Initiative. It summarizes, in a single page, the comprehensive management of cardiovascular risk in primary health care, incorporating the WHO hypertension guideline recommendations and the HEARTS drivers. Hence, the clinical pathway becomes a powerful tool to strengthen management, clinical practice, and community action.

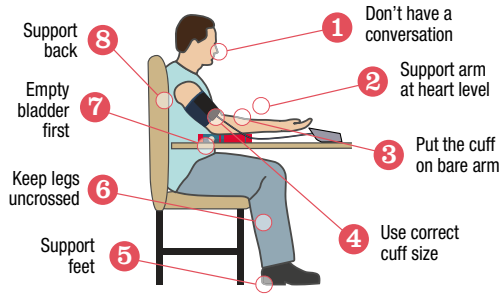
ACCESS YOUR COUNTRY'S CLINICAL PATHWAY

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	HIGH-RISK Hypertensives: 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	Vaccination: Pneumococcus	Vaccination: COVID
All Hypertensives	✓		✓			✓
HIGH-RISK Hypertensives		✓	✓	✓	✓	✓

PAHO — Pan American Health Organization — World Health Organization Americas

HEARTS — **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

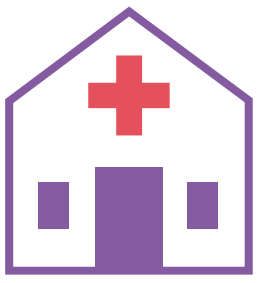
This protocol is **NOT INDICATED** in **WOMEN** of **CHILDBEARING AGE**

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;46:e125. Available from: https://doi.org/10.26633/RPSP.2022.125. ACCESS

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. Available from: https://doi.org/10.3389/fcvm.2023.1102482. ACCESS

8. Monitoring and Evaluation System for quality improvement

The System for Monitoring and Evaluation of HEARTS in the Americas is a tool for quality management based at the primary health care center. Developed under the open-source platform DHIS2, it allows health teams to report the variables linked to their professional practice and obtain periodic reports that enable them to evaluate their performance and results.

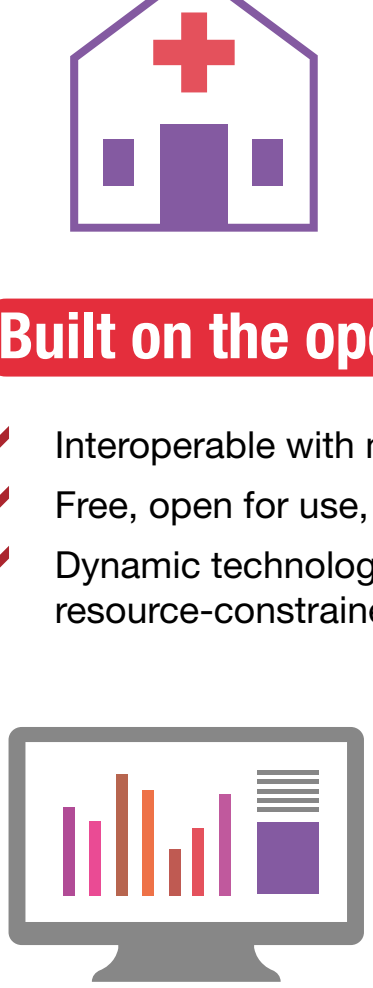


Based on the health center

- Designed for and by the primary health care team.
- Real-time analytical and systematized report.
- Control dashboard to assess implementation maturity and performance over time.

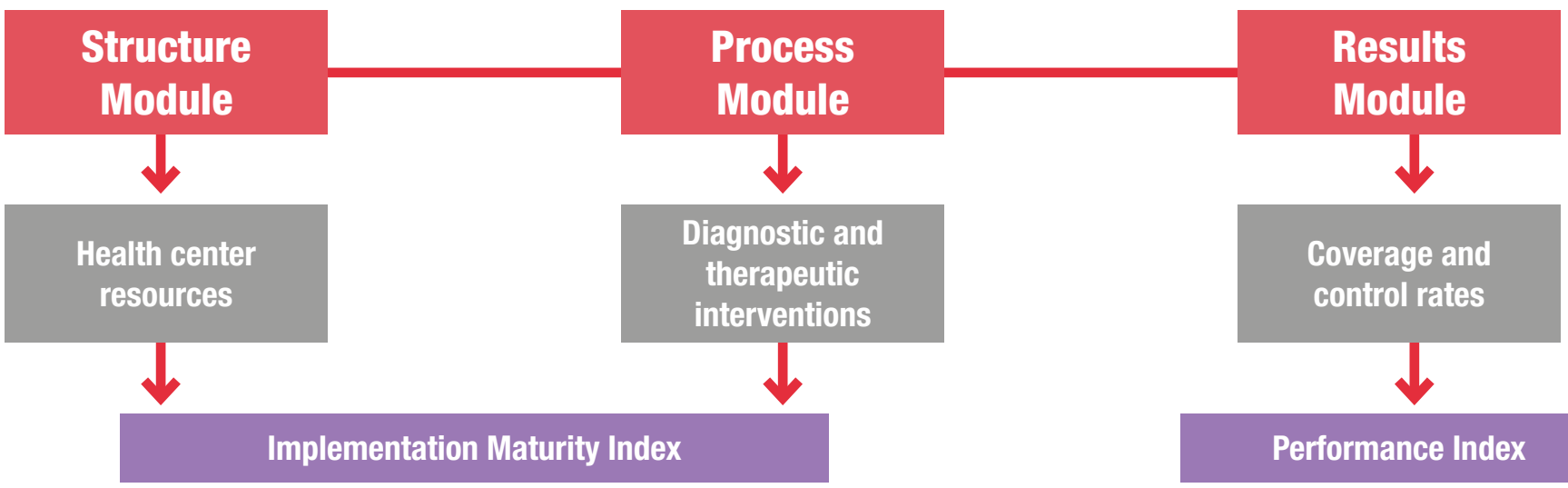
Built on the open-source DHIS2 platform

- Interoperable with multiple electronic health record systems.
- Free, open for use, and does not require a permanent Internet connection.
- Dynamic technology adoption, ensuring robust solutions that operate in resource-constrained environments.



Indicators aligned with programmatic priorities

- Aimed at evaluating all aspects of HEARTS implementation.
- Aggregate data to protect the privacy of the medical record.
- Allows for the identification of implementation gaps.



Instrumental for the continuous quality improvement process

- Access to information under a hierarchical structure to facilitate management at different levels.
- Allows comparison between different health centers to promote learning based on best practices.
- Generates evidence to guide decision-making, identify common problems, and support strategies for target-oriented intervention design.

Prado P, Gamarra A, Rodriguez L, Brettler J, Farrell M, Girola ME, et al. Monitoring and evaluation platform for HEARTS in the Americas: improving population-based hypertension control programs in primary health care. Rev Panam Salud Publica. 2022;46:e161. Available from: https://doi.org/10.26633/RPSP.2022.161. ACCESS

9. HEARTS training and education resources

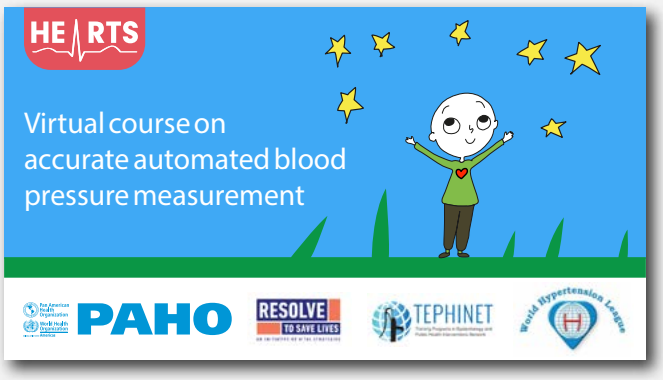
Continuous training and education of the healthcare team is essential to provide quality care. HEARTS in the Americas has developed a set of free and open access courses with the collaboration of scientific organizations and international experts. Each course provides a PAHO certificate with academic hours and a unique badge.

Hypertension Control Drivers at Primary Health Care Centers

WEBSITE ACCESS

Implementation of the HEARTS Technical Package in Primary Care Health Teams

WEBSITE ACCESS



Accurate Automated Blood Pressure Measurement

WEBSITE ACCESS

Supporting Primary Health Care Teams to Use Blood Pressure Medications Effectively

WEBSITE ACCESS

Hypertension and Cardiovascular Risk Management in Primary Health Care

WEBSITE ACCESS

Home Blood Pressure Monitoring

WEBSITE ACCESS

Access HEARTS virtual courses by clicking here: ACCESS

Since 2016, the Pan American Health Organization (PAHO) has been promoting the implementation of the HEARTS Initiative in the Americas as a regional adaptation of the World Health Organization's Global HEARTS Initiative. During this time, 33 countries in the Region of the Americas have committed to implementing HEARTS, and PAHO has developed many technical resources to support them. Most of these resources are clinical tools for primary healthcare teams and focus on quality improvement.

This compendium aims to group all these clinical tools in a single document under a simple format that facilitates their practical implementation in daily clinical practice. The reader will notice that each tool is summarized on a single page and presented in a modular format. Therefore, each tool can be used together or separately as needed. In addition, at the bottom of each tool, the reader will find the references and hyperlinks to access full texts in case deeper knowledge is required.

PAHO

Pan American Health Organization

World Health Organization
REGIONAL OFFICE FOR THE Americas