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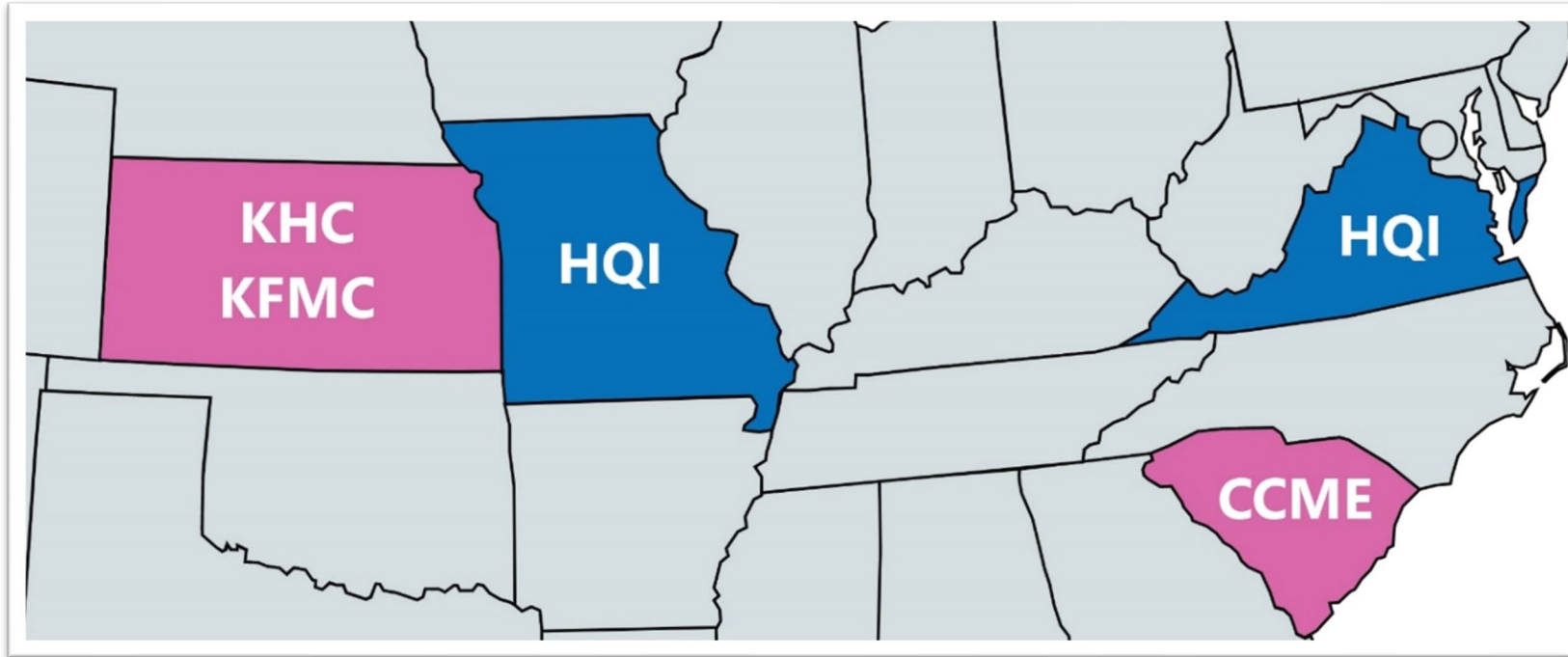


Health Quality Innovation Network

Importance of Assessing CVD Risk and Monitoring

September 7th, 2022

Health Quality Innovation Network





This HQIN **HEARTS in America** series is delivered by **HEARTS** subject matter experts. They are introducing the pillars of the [HEARTS Technical Package](#) while beginning the conversation about HEARTS in America.

If you would like to speak to a HEARTS Advisor, learn more about the initiative, and discuss possibilities for your organization, please connect with your HQIN Quality Improvement Advisor to begin the next steps.

Accreditation Statement

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American Medical Association Physician's Recognition Award (AMA)

Southern Medical Association designates this Live activity for a maximum of *.75 AMA PRA Category 1 Credit*[™].

Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Non-physician Attendees

All non-physicians will receive a certificate of participation.



Disclosures

Disclosure Information

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Invited Faculty:

Andres Rosende, MD, MSc

No financial relationships were declared

Logistics – Zoom Meeting



To ask a question during the presentation, please use **Chat**.

Raise your hand if you want to verbally ask a question.

Links from today's session will be posted in **Chat**.

You may adjust your audio by clicking **Audio Settings**.

You have been automatically muted with video turned off.

Purpose & Learning Objectives

1. Detail the CVD prevalence and impact on healthcare systems and delivery.
2. Introduction to the PAHO CVD Risk Assessment Tool.
3. Understanding the importance of completing CVD screenings and Risk Assessment Tool to engage and inform treatment and patients.

Andres Rosende, MD



Andres Rosende is a physician specializing in cardiology. He obtained a Master's degree in clinical research and epidemiology from the University of Buenos Aires, Argentina. In 2018, and after several years of clinical practice, Andres began to work in the Ministry of Health of Argentina as the Coordinator of the National Program for Cardiovascular Disease Prevention, leading the implementation of the HEARTS initiative in the country.

Since 2021, he has been working as an International PAHO Consultant for HEARTS in the Americas Initiative, specifically, overseeing the Medication and Standardized Treatment Protocols Pillar.



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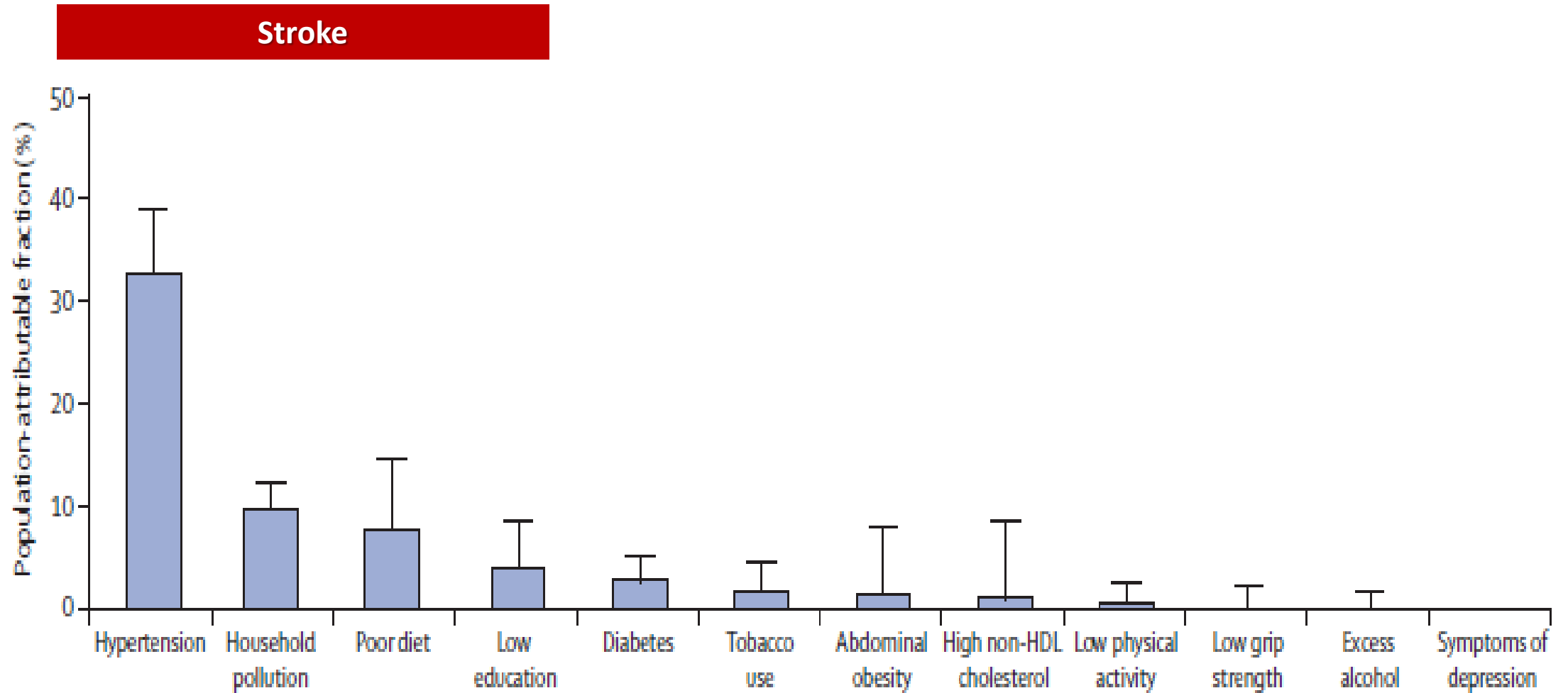
Health Quality Innovation Network

Importance of Assessing CVD Risk and Monitoring

Andres Rosende, MD, MSc

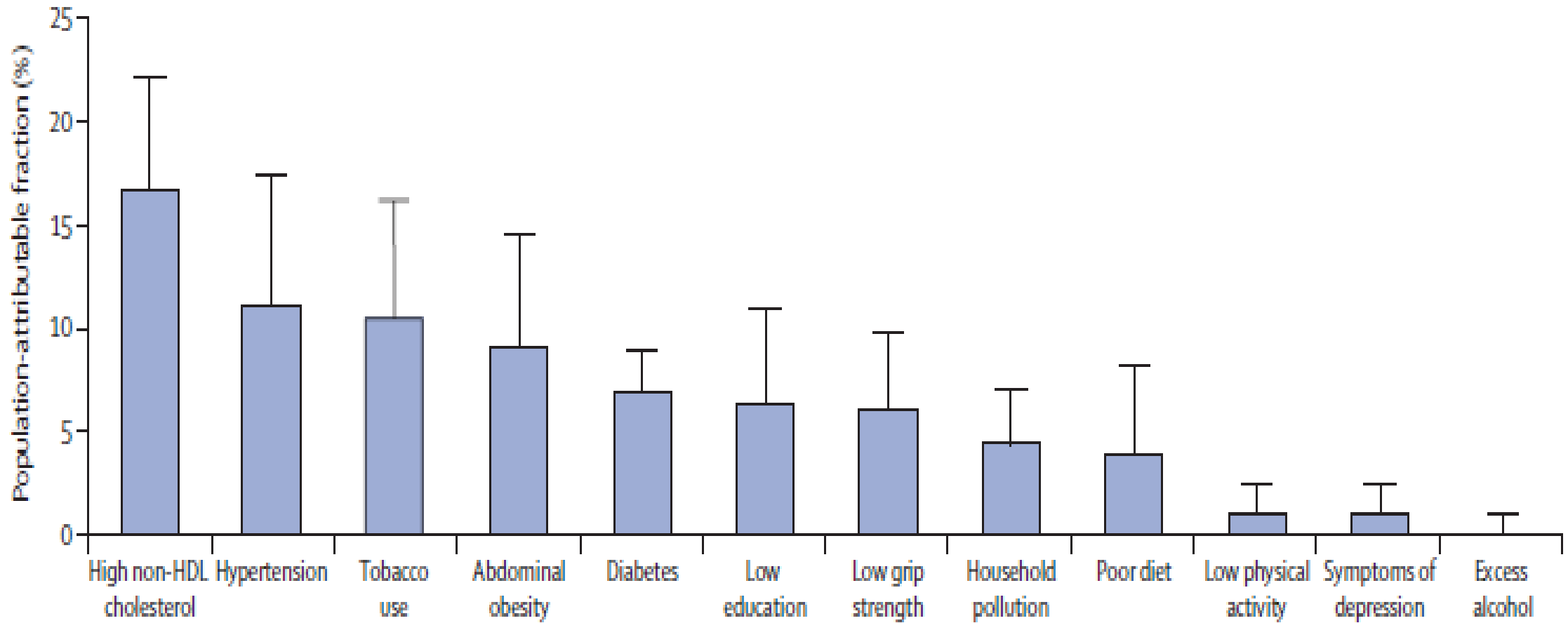
**International PAHO/WHO Consultant
HEARTS in the Americas**

HTN Attributable Risk Factors

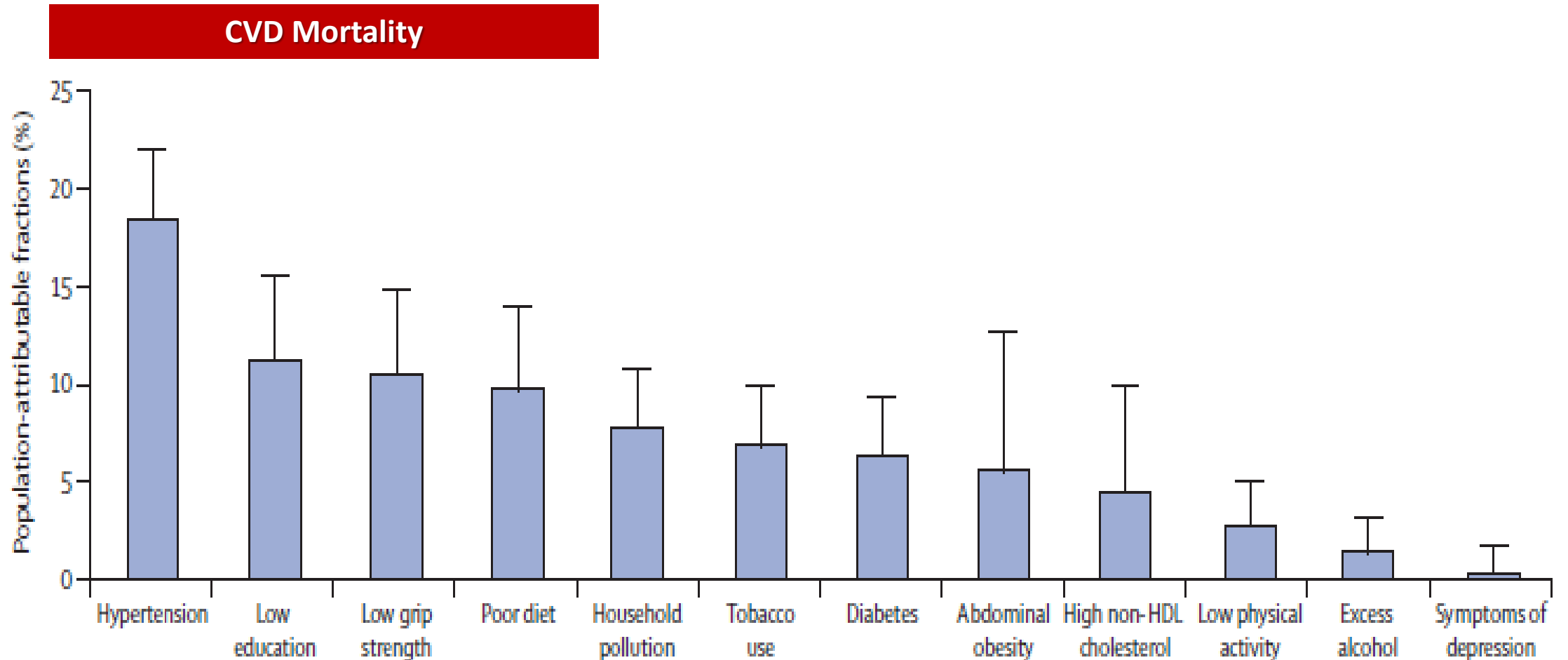


HTN Attributable Risk Factors

Myocardial Infarction



HTN Attributable Risk Factors



Healthy Lifestyle

Lifestyle changes	Average Reduction of SBP
Low sodium intake	5 mmHg
Weight loss	12 mmHg per 10 kg lost
DASH Diet	11 mmHg
Regular physical activity (>120 min/week)	6 mmHg

Midgley et al. Effect of reduced dietary sodium on blood pressure: meta-analysis of RCT. JAMA 1996; 275:1590-1597.

Neter et al. Influence of weight reduction on blood pressure: meta-analysis of RCT. Hypertension 2003; 42:878-884.

Apple et al. A clinical trial of effects of dietary patterns on blood pressure. DASH CRG. N Eng J Med 1997;336:1117-1124.

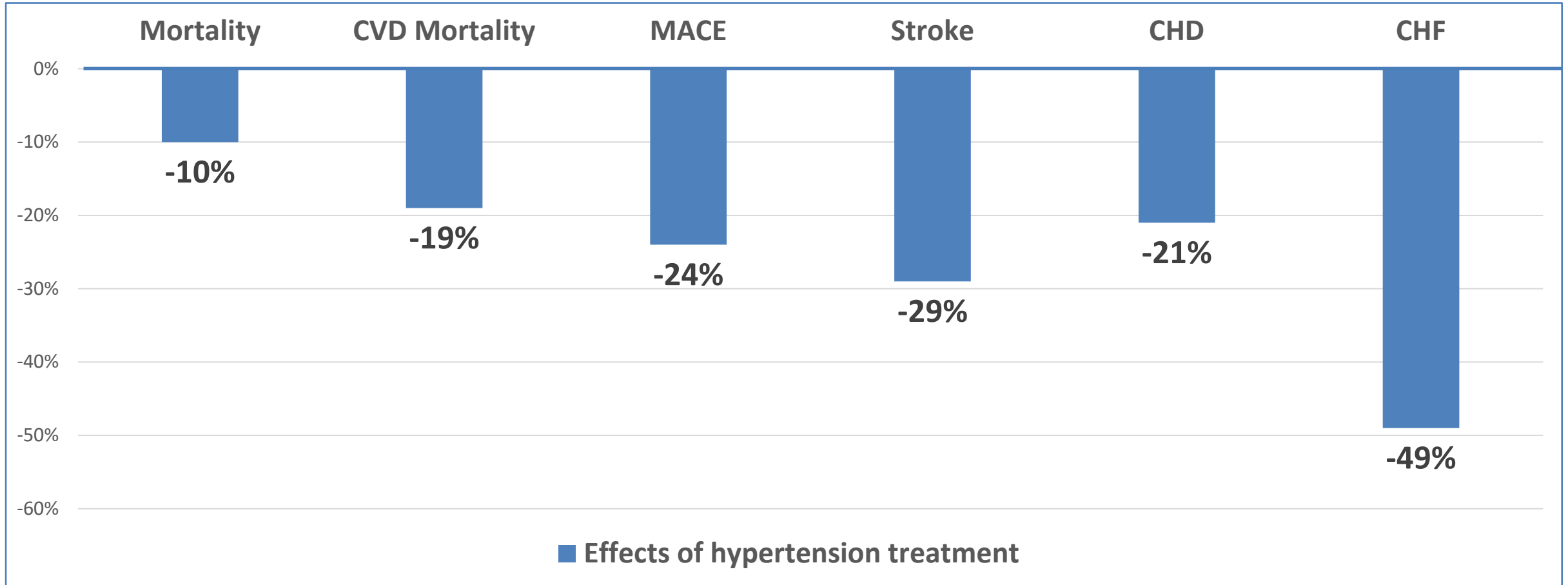
Halbert et al. The effectiveness of exercise training in lowering blood pressure: a meta-analysis of randomised, controlled clinical trials of 4 weeks or longer. J Hum Hypertens 1997;11:641-649.

Pharmacologic Monotherapy Treatment

Average SBP reduction (mmHg) compared to placebo by drug class.

Drug	Half maximum dose
Thiazides	8.8
Beta Blockers	9.2
Angiotensin Converting-Enzyme Inhibitors	8.5
Calcium Channel Blockers	8.8
Angiotensin Receptor Blockers	10.3
Any drug	9.1

Benefits of Pharmacologic Treatment



Hypertension in America



Guiding Principles

Country ownership

HEARTS is led by the Ministries of Health, with the participation of other stakeholders and PAHO's technical cooperation.

Simple and practical

The Initiative provides pragmatic, cost-effective, and feasible solutions to PHC.

Evidence-based

HEARTS promotes the adoption of best practices in preventing and controlling CVD and improving health services organization.

Accountability

HEARTS is a data-driven initiative.

Continuous learning

Continuous learning cycles, peer-led teaching, dissemination of effective innovations, and lessons learned during implementation.

Long-term sustainability

Integrating elements into the existing health care systems.

Increasing the PHC capacity

Recruiting more PHC facilities and increasing the speed of model institutionalization.



HEARTS

IN THE AMERICAS

**Treatment and Control of Hypertension is the TOP priority
But...Is That Enough?
Importance of Knowing and Treating CVD Risk**

What is Global CVD Risk?



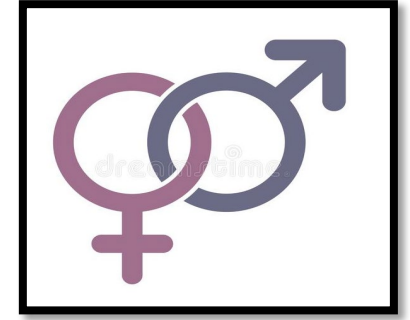
Age



Tobacco use



Sedentary lifestyle



Sex



Diabetes



Overweight and obesity



High Cholesterol



Hypertension



Poor diet

WHO Guidelines for the Pharmacological Treatment of Hypertension in Adults: What about CVD risk?

Guideline for the pharmacological treatment of hypertension in adults



WHO recommends initiation of pharmacological antihypertensive treatment of individuals with a confirmed diagnosis of hypertension and SBP of ≥ 140 mmHg or DBP of ≥ 90 mmHg. (Strong recommendation, moderate-high certainty evidence)

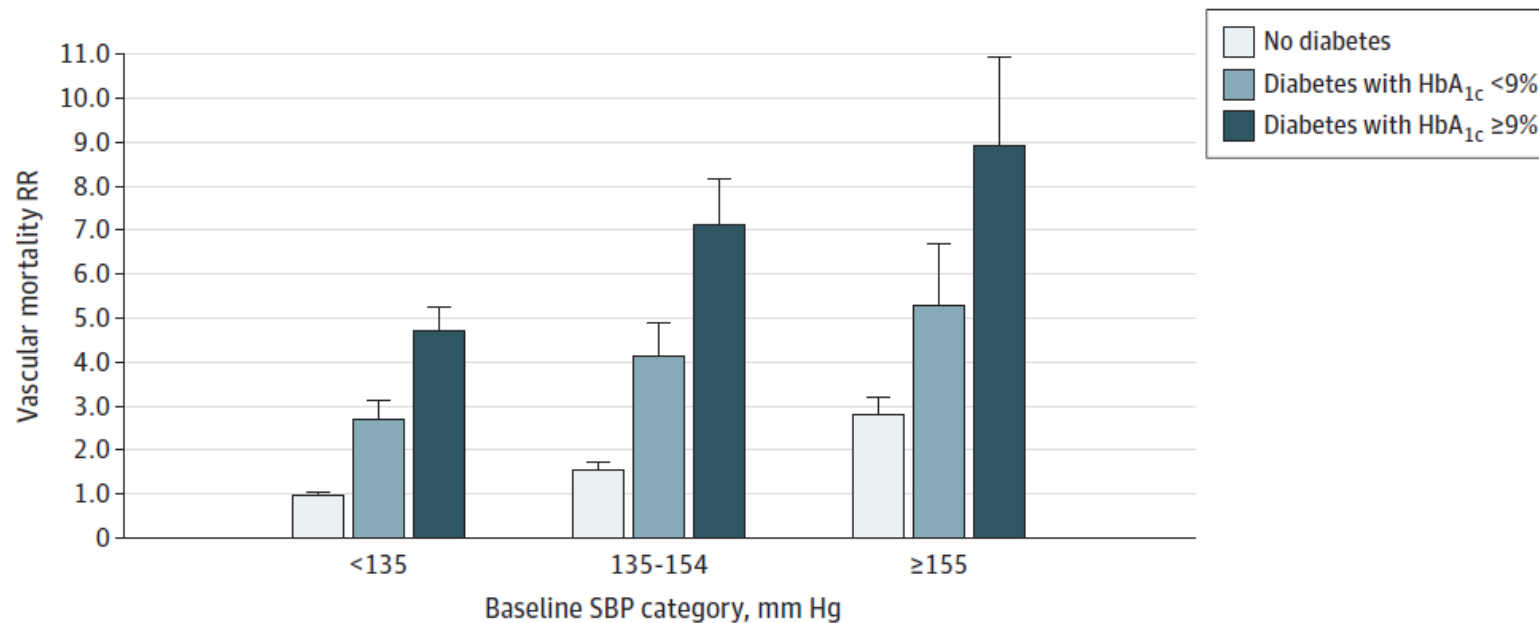
WHO recommends pharmacological antihypertensive treatment of individuals with existing cardiovascular disease and systolic blood pressure of 130-139 mmHg (Strong recommendation, moderate-high certainty evidence)

WHO suggests pharmacological treatment of individuals without cardiovascular disease but with high cardiovascular risk, diabetes mellitus, chronic kidney disease, and a SBP of 130-139 mmHg (Conditional recommendation, moderate-high certainty evidence)

Implementation remarks: Treatment should start no later than 4 weeks after diagnosis. If BP $\geq 160/90$ mmHg or end organ damage is present-start without delay

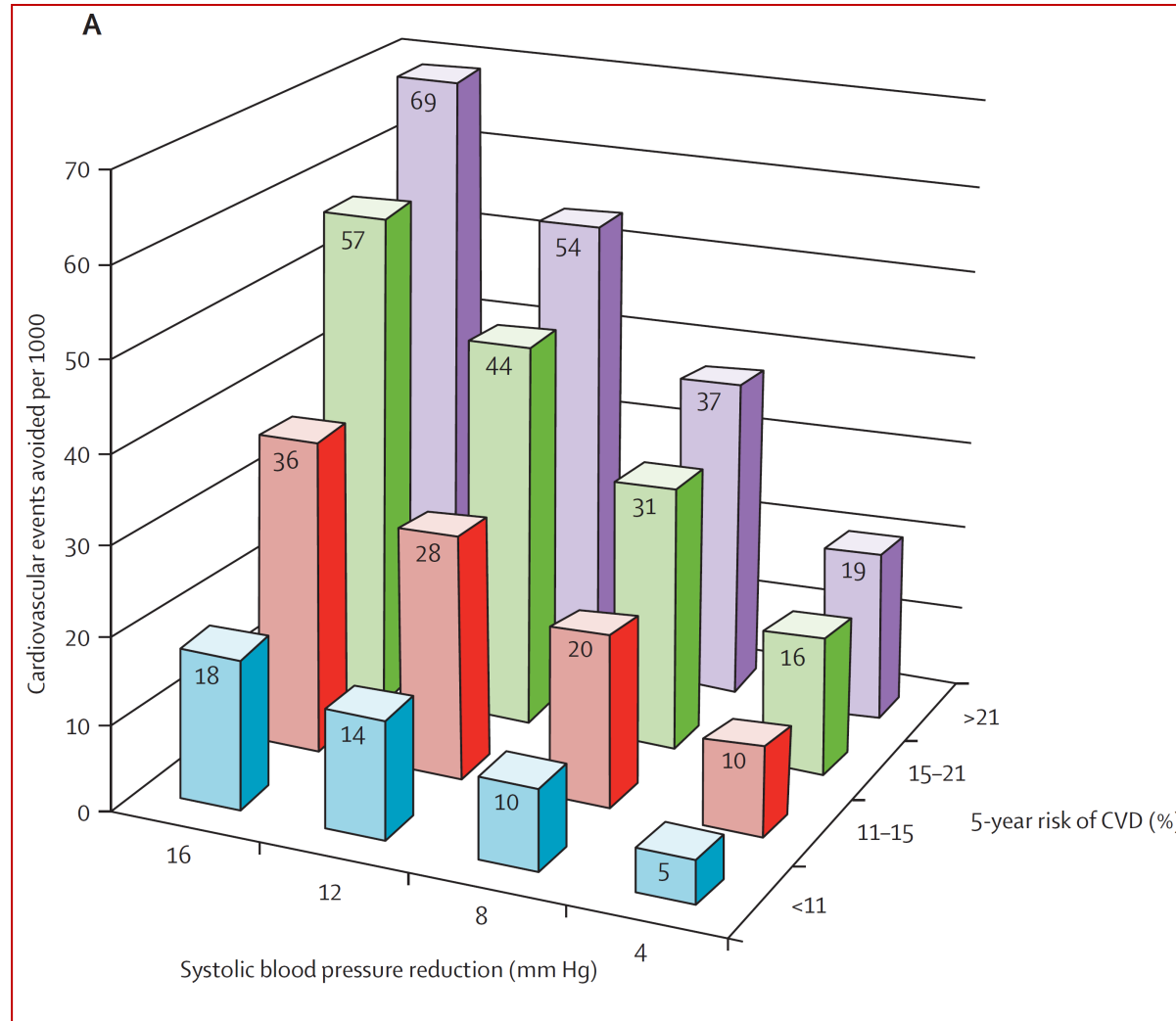
CVD Mortality Associated with Systolic Blood Pressure and History of Diabetes.

Figure 3. Absolute Excess Vascular Mortality Between Ages 35 and 74 Years Associated With Systolic Blood Pressure (SBP) by History and Control or Previously Diagnosed Diabetes

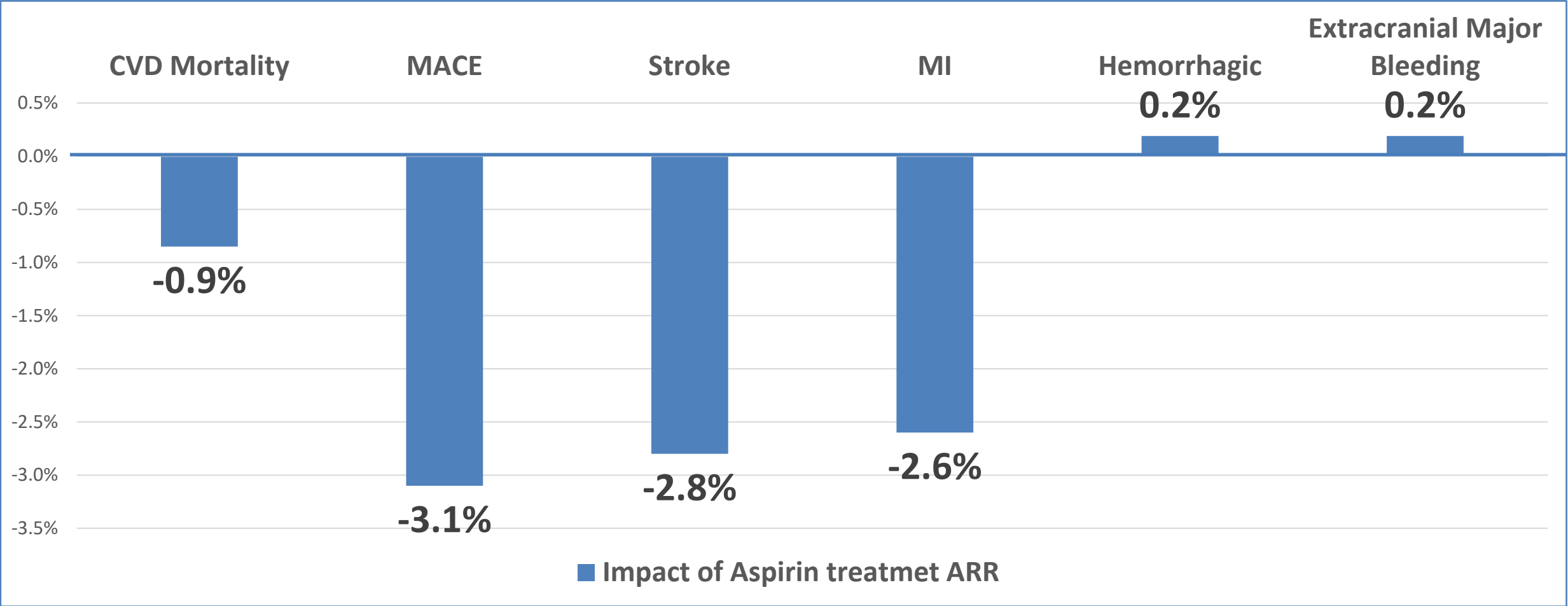


Analyses excluded participants with prior chronic diseases (ie, ischemic heart disease, stroke, chronic kidney disease, cirrhosis, cancer, or emphysema) apart from diabetes. For the 9 groups shown, the mortality rate ratio (RR) estimates are stratified by age-at-risk (in 5-year ranges) and adjusted for sex, district of residence, highest education level attained, smoking status, alcohol intake, leisure-time physical activity, and measures of anthropometry. The error bar extending above each column extends to the upper 95% confidence limit of the RR. The mean usual SBP in the 3 SBP categories shown was 121, 139, and 158 mm Hg, respectively.

Impact of BP Reductions by CVD Risk Level



Aspirin in Secondary Prevention



What is the impact of aspirin use in primary prevention?

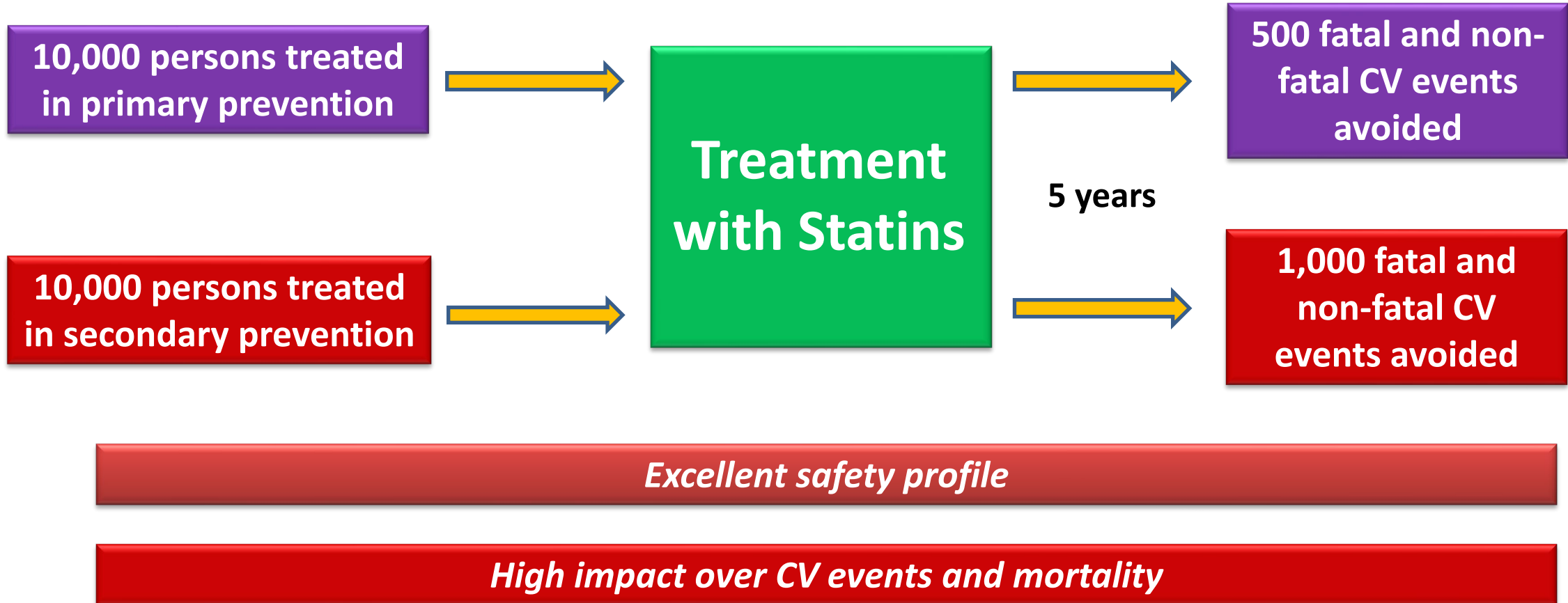


Aspirin in Primary Prevention does not reduce total mortality nor cardiovascular mortality

Aspirin in Primary Prevention does not reduce Stroke

The net clinical benefit is scarce

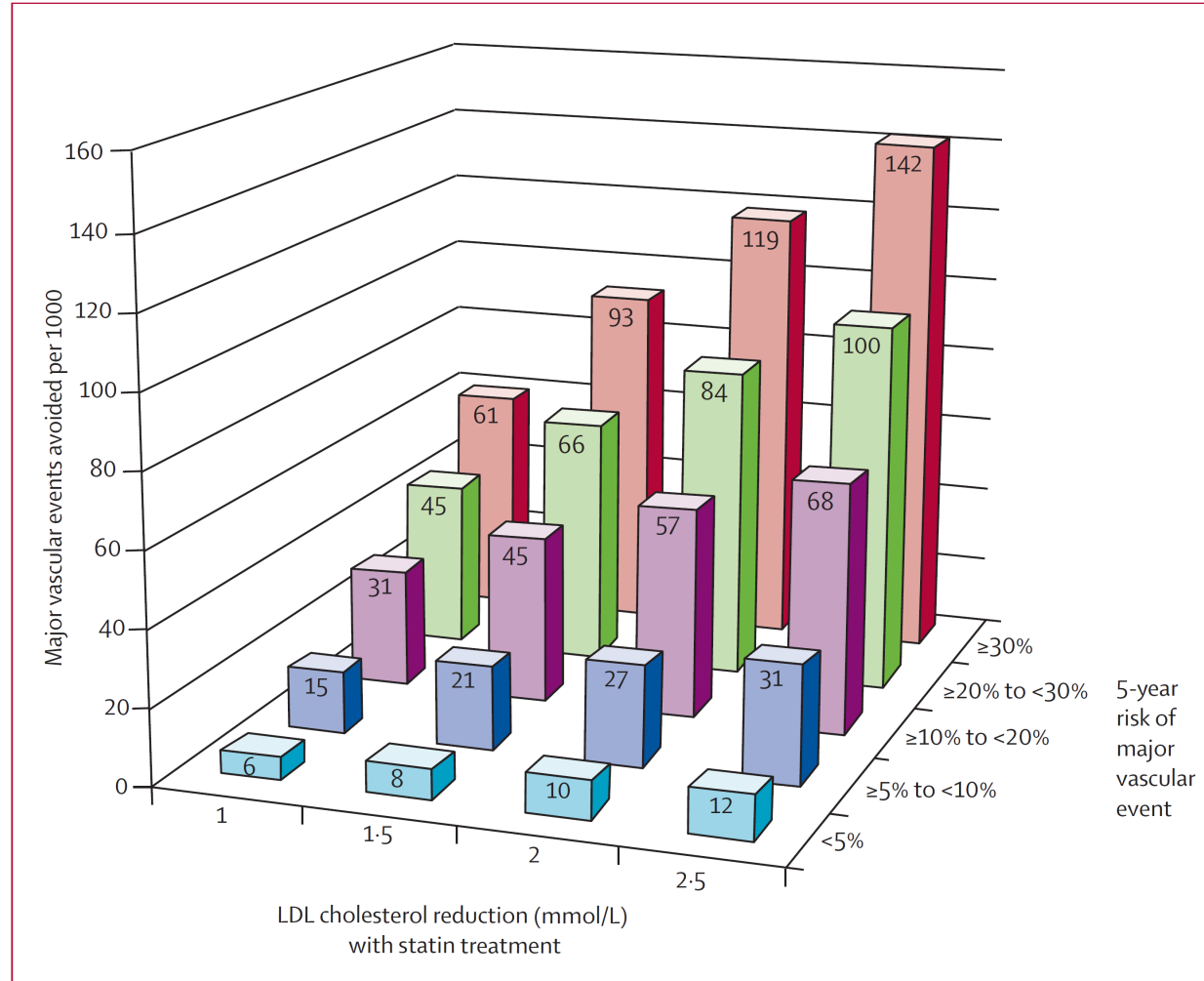
Impact of statin therapy



Collins R, Reith C, Emberson J, Armitage J, Baigent C, Blackwell L, et al. Interpretation of the evidence for the efficacy and safety of statin therapy. Lancet. 2016 Nov 19;388(10059):2532–61.

Cholesterol Treatment Trialists' (CTT) Collaboration, Baigent C, Blackwell L, Emberson J, Holland LE, Reith C, et al. Efficacy and safety of more intensive lowering of LDL cholesterol: a meta-analysis of data from 170,000 participants in 26 randomised trials. Lancet. 2010 Nov 13, 376(9753):1670–81.

Impact of Statin Therapy by CVD Risk Level



Why should we estimate CVD risk?

1- To establish different treatment regimens (Aspirin, Statins)

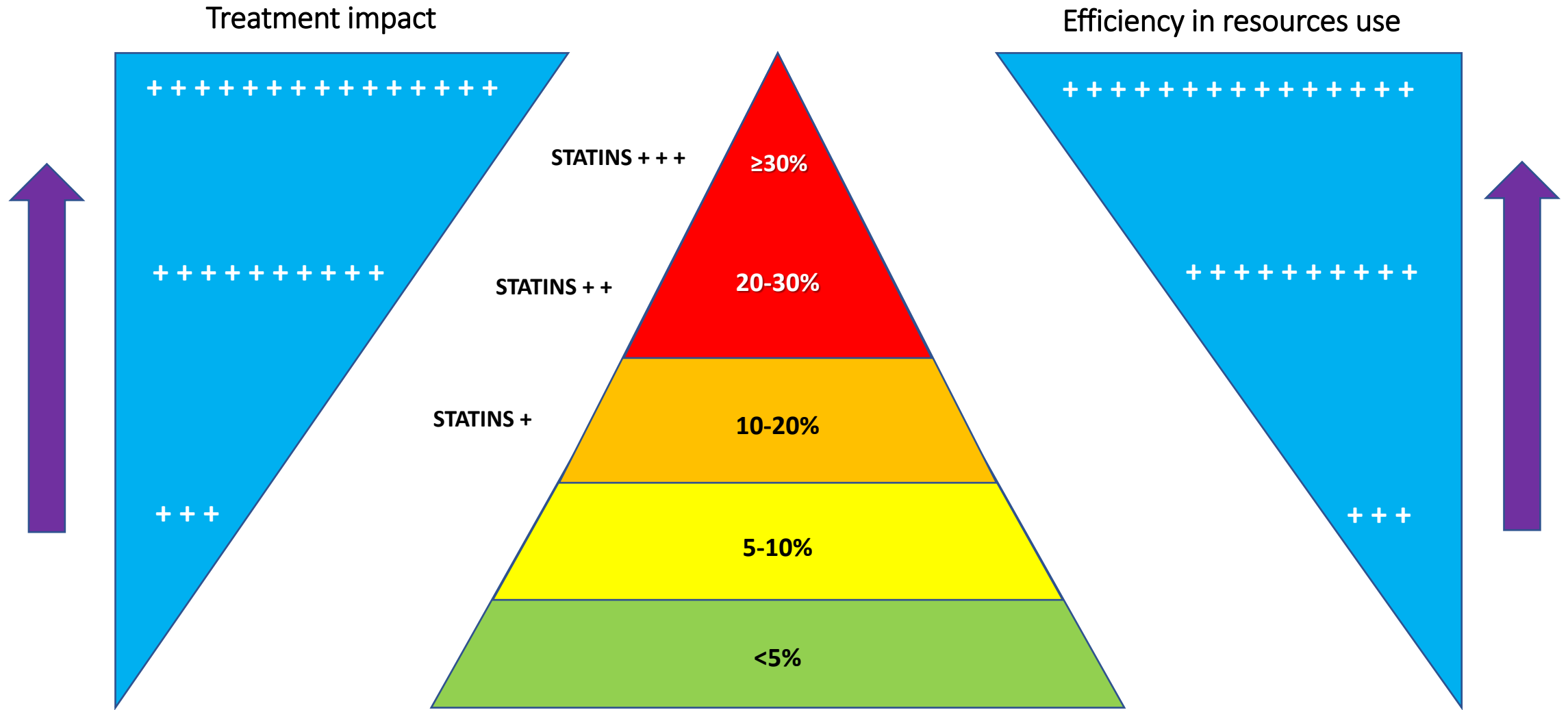
2- To establish the need of more intensive BP thresholds and targets.

3- To establish different follow-up intervals for control.

4- To assess the need for consultation with a specialist.

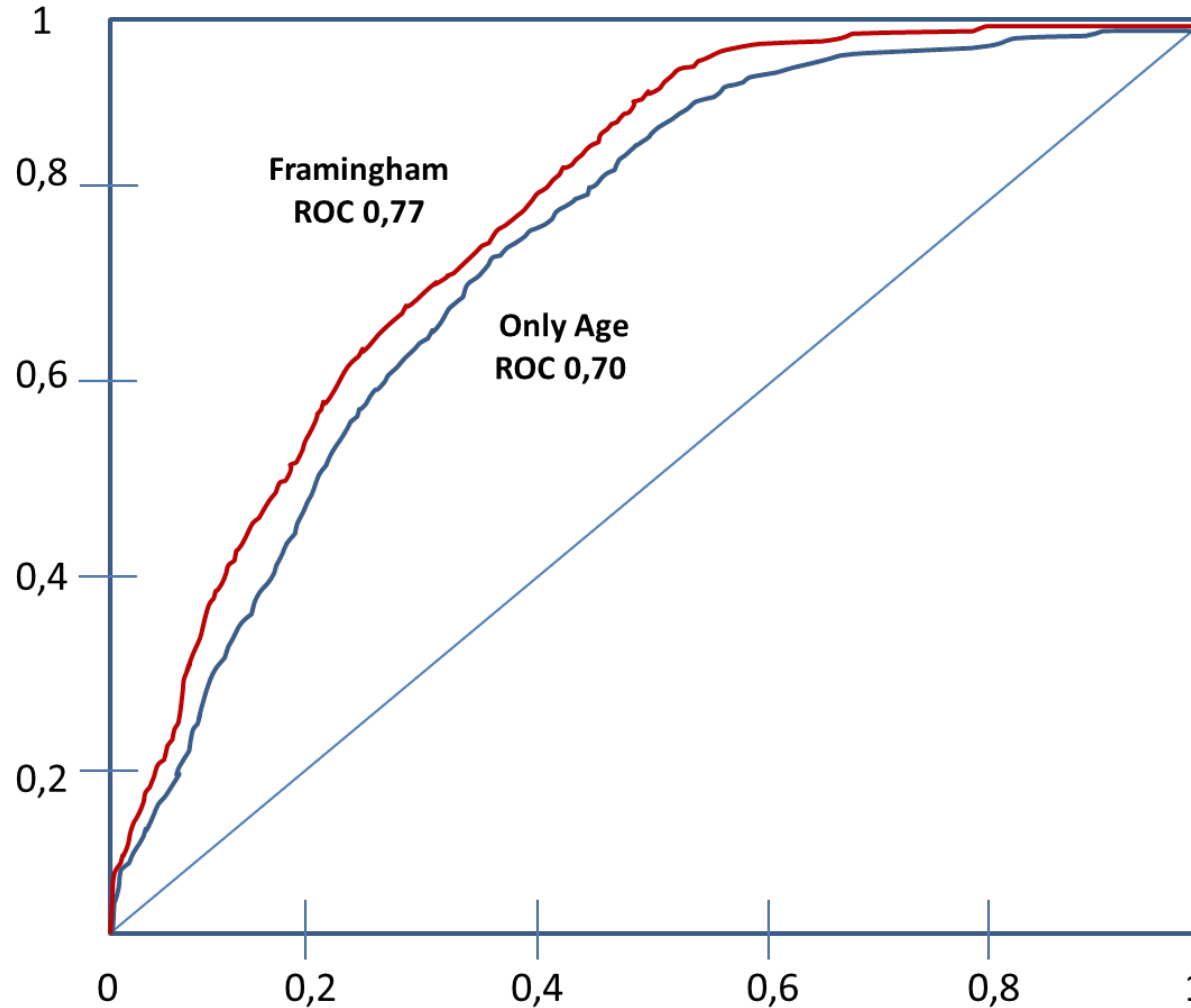
To improve healthcare with efficient use of resources and impact the reduction of CVD and premature death.

Primary prevention



Proportion of individuals by CVD risk strata

What is the best CVD risk score?



Framingham CVD?

Framingham CHD?

ESC SCORE?

ACC/AHA?

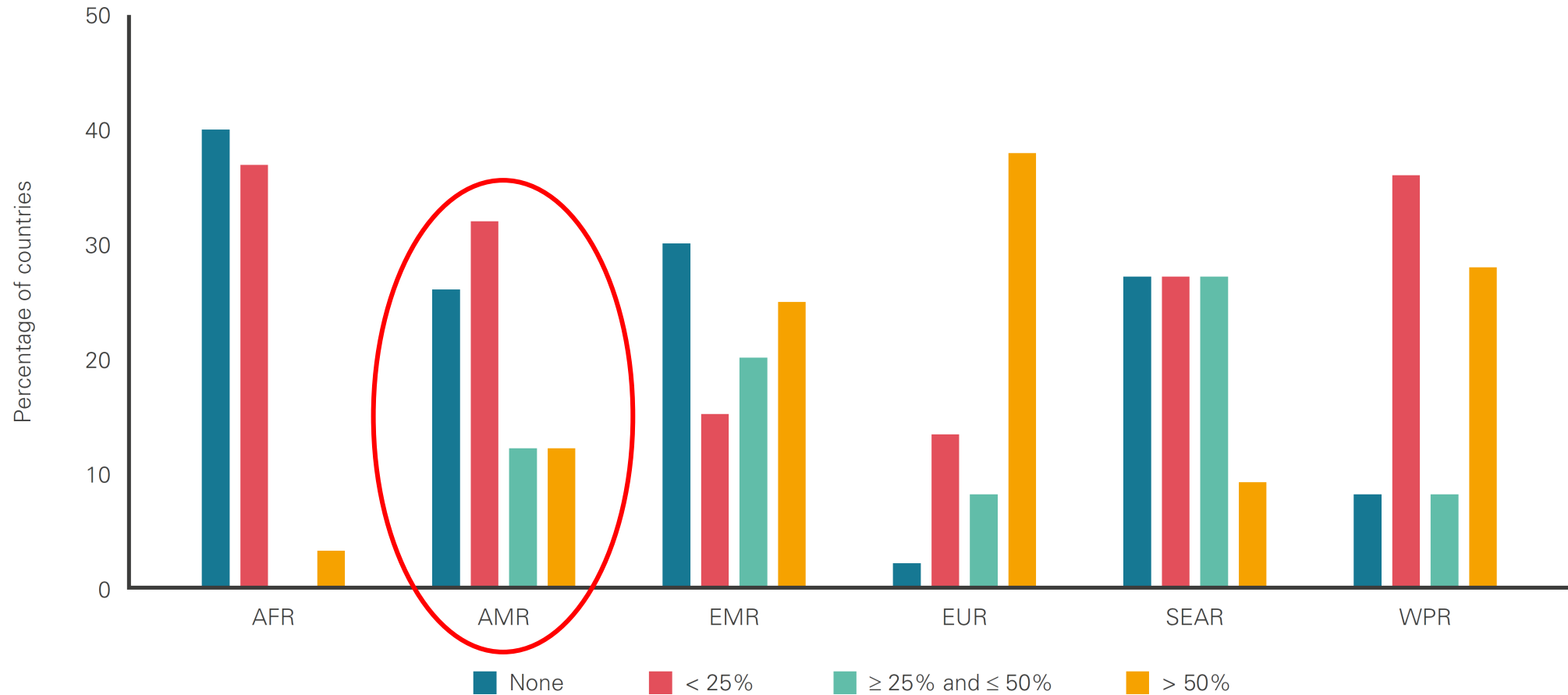
ASCVD?

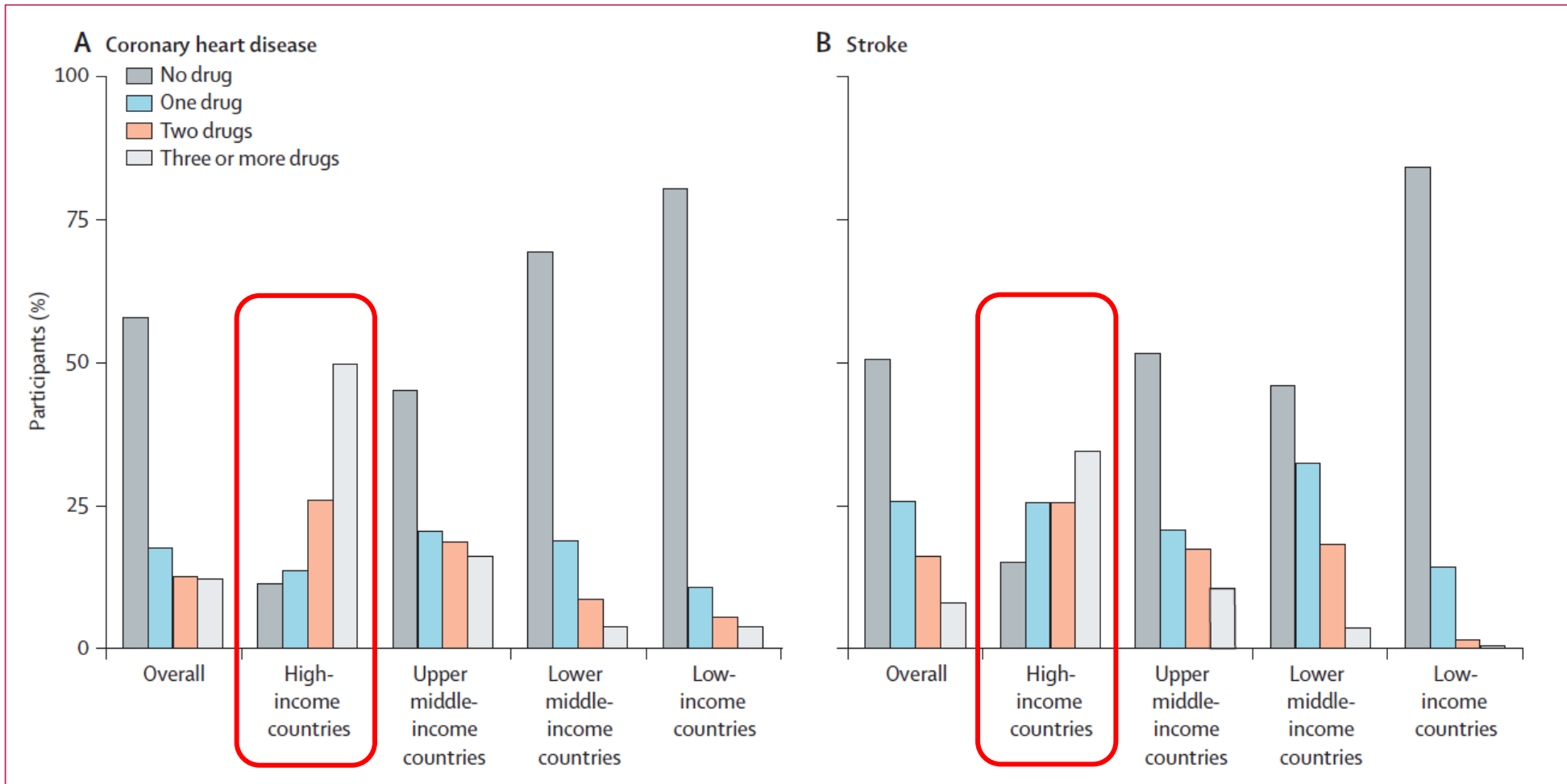
WHO Score?

JBS-3 Score?

QRISK-2 Score?

Primary health care centers offering CVR stratification for the management of patients at high risk of AMI and stroke, by WHO Region





Yusuf S, et al. Prospective Urban Rural Epidemiology (PURE) Study Investigators. Use of secondary prevention drugs for cardiovascular disease in the community in high-income, middle-income, and low-income countries (the PURE Study): a prospective epidemiological survey. *Lancet*. 2011 Oct 1;378(9798):1231-43.

The HEARTS APP

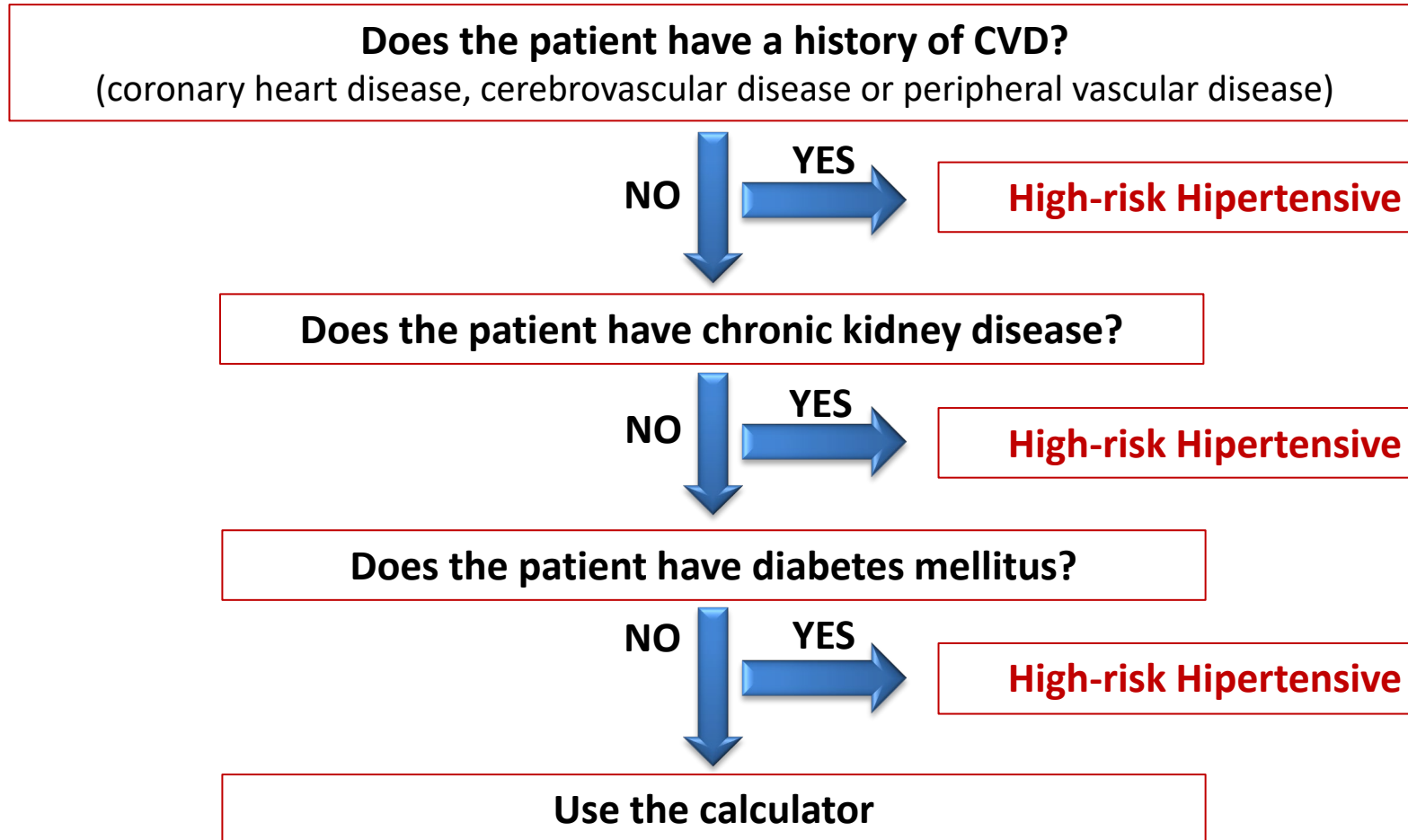


**CVD RISK
CALCULATOR**

FIND OUT YOUR RISK OF HEART
DISEASE
AND HOW TO LOWER IT

This **FREE** app is a cardiovascular risk calculator that estimates
the possible 10-year risk of myocardial infarction, stroke, or

Available at: <https://www.paho.org/en/hearts-americas/cardiovascular-risk-calculator-app>



Hypertension Clinical Pathway

1. BP measurement accuracy

2. CVD risk assessment

3. Standardized Treatment Protocol

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

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 $\geq 140/90$ mmHg in all HYPERTENSIVES.
Systolic Blood Pressure ≥ 130 mmHg in HIGH-RISK HYPERTENSIVES (Established cardiovascular disease, Diabetes, Chronic Kidney Disease, Risk score $\geq 10\%$)

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		✓	✓	✓	✓	✓

Country Name

Entity name

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

Lancet Reg Health Am 2022. May;01:100223. doi.org/10.1016/j.lana.2022.100223.

Lancet Reg Health Am 2022. May;01:100219. doi.org/10.1016/j.lana.2022.100219

Hypertension Clinical Pathway

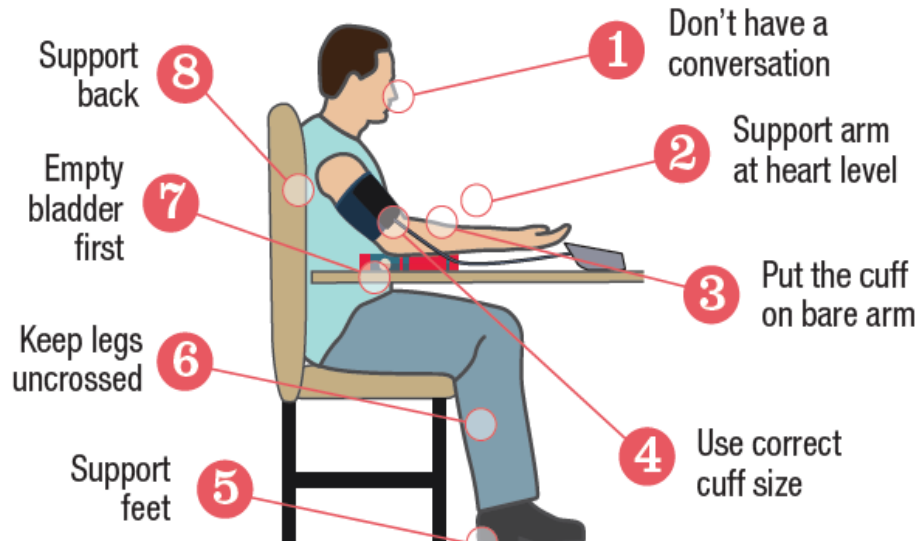
A

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MEASURE BLOOD PRESSURE IN ALL ADULTS AND AT ALL VISITS



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C

TREATMENT PROTOCOL



START TREATMENT IMMEDIATELY AFTER
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Blood Pressure $\geq 140/90$ mmHg in **all HYPERTENSIVES**.

Blood Pressure $\geq 140/90$ mmHg in **all HYPERTENSIVES**.

Systolic Blood Pressure ≥ 130 mmHg in **HIGH-RISK HYPERTENSIVES**
(Established cardiovascular disease, Diabetes, Chronic Kidney Disease, Risk score $\geq 10\%$)

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

2

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

3

Patient above target after repeat measurement
1 Tablet of Telmisartan/Amlodipine 80/10 mg
+ 1/2 Tablet of Chlorthalidone 25 mg

4

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

1 MONTH

1 MONTH

1 MONTH

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		✓	✓	✓	✓	✓

Country name
Entity name



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**

The Hypertension Clinical Pathway is the main tool for HEARTS implementation, promoting a comprehensive approach of CVD risk management in PHC.

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.



IN THE AMERICAS

Conclusion

Hypertension treatment is the top priority, but this treatment is best tailored according to the level of CVD risk, as recommended by the HEARTS Clinical Pathway.

The HEARTS Clinical Pathway allows a pragmatic approach to CVD risk, strengthening the secondary prevention through the appropriate indication of statins and aspirin.



Questions?

Join us for our next
HEARTS in America event:

**Hypertension, Diabetes, and
Chronic Disparities Within
Healthcare**

September 21st @ 12:15pm

CME Process

CME credit and certificate distribution are managed through SMA's **online process**. Within one week after the conclusion of the webinar, **please be on the lookout for an email from the Southern Medical Association (customerservice@sma.org) that will include your unique link to an online form** to complete the evaluation, attendance attestation, and claim credit. Please review the following process to receive your certificate awarding credit (for physicians), or a certificate of participation (for non-physician attendees).

- Southern Medical Association (SMA) **will create an online account for you** including your unique login, **using the email address you provided during registration** (your username/ID is your email address).
- Upon receipt of your post-meeting email, click the link provided, and please **make sure that your name and email address appear at the top of the form before completion**.
- **After you complete and submit your evaluation and attendance documentation, your certificate will be emailed to you as a .pdf attachment from customerservice@sma.org within 24 hours.**



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