IN THE AMERICAS

"No Data - No Progress.

HEARTS is a data-driven program"

Revisiting HEARTS technical package Module S

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With thanks Ramon Martinez, Yenny Rodriguez, Gloria Giraldo, Roberta Caixeta, Dolores Ondarsuhu, Kristy Joseph, Taskeen Khan, Andrew Moran and Norm Campbell

Pan American Health Organization

World Health Organization

Americas

PAHO

HEARTS
IN THE AMERICAS

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   ▪ HEARTS, an implementation strategy

❑ Premise of HEARTS interventions

   ▪ Goal and expected outcomes

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PAHO

PAHO approach on System for monitoring and evaluation in the context of HEARTS

Hypertension Control

"We are going to improve hypertension control. We do not know the current control rate, we do not know how we are going to improve the control rate, we will not know when or if the control rate will be increased and we do not have a target control rate".

-Prof. Norm Campbell
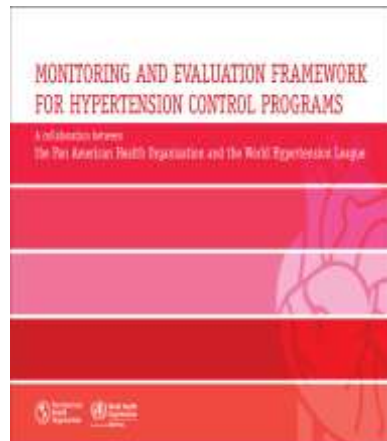
PAHO approach to monitoring and evaluation

1. Fully aligned with WHO HEARTS technical package
2. PAHO-WHL Monitoring and Evaluation Framework = WHO HEARTS TP +
3. Finetuning the process and the indicators = more action-oriented and greater feasibility

WHO Framework for action

High blood pressure kills more people than any other condition – approximately 10 million people each year, more than all infectious diseases combined.

Reducing blood pressure

prevents stroke, heart attack, kidney damage, and other health problems

Global Target 6. A 25% relative reduction in the prevalence of **raised blood pressure**

(≥140/90 mmHg in adults aged 18 years and over)

Reducing the incidence of hypertension through **population-wide** policies (alcohol, physical inactivity, overweight and obesity, high salt intake

**Control of hypertension** through a total CVD risk approach

PAHO

Number (%) of Major All CVD for Different Sub-Groups in PURE (n=152,609)

Baseline Condition	Total no. with Condition (%)	Follow-up Major CVD N = 3,488 (2.23 %)
Prior CVD	7,743 (5.1)	673 (19.3)
Hypert (History or 140/90)	62,034 (40.7)	2,317 (66.4)
Current Smoker	31,397 (20.6)	1,021 (29.4)
CVD, HTN or Smoker	**84,078 (55)**	**2,822 (80.9)**
Diabetes(History or FPG >7mmol)	16,071 (10.5)	905 (26.0)
CVD, HTN, Smoker or Diabetes	**88,326 (57.9)**	**2,929 (84.0)**

S Yusuf 2016, PURE study
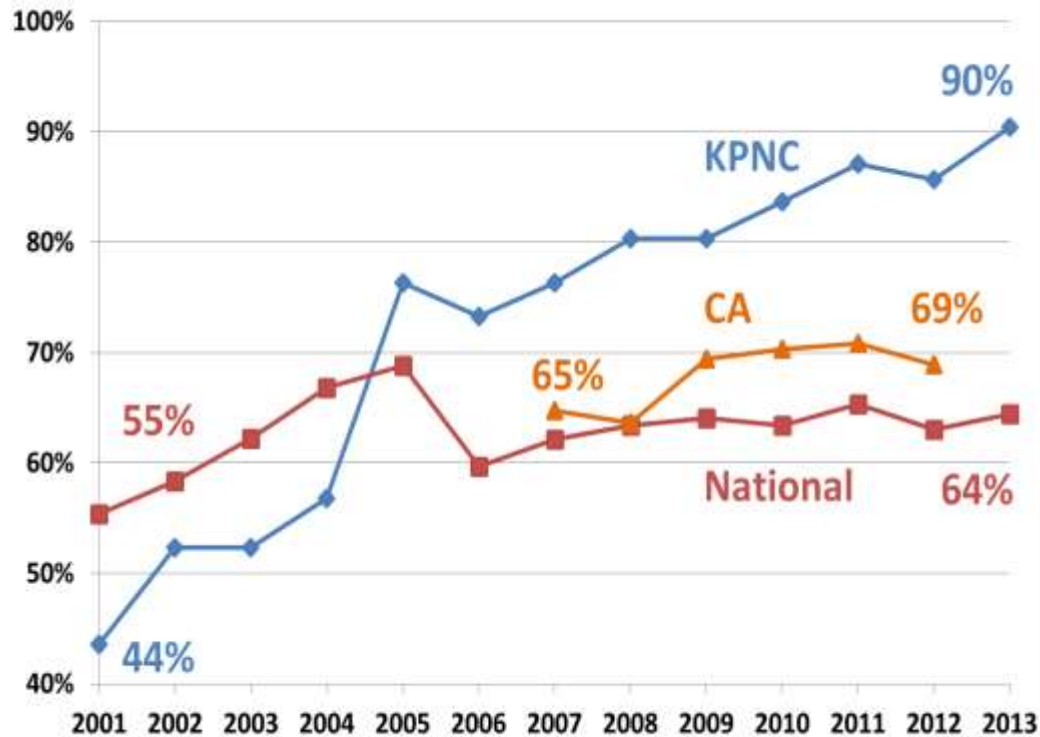
Premise of HEARTS interventions

The scaling of a successful and an innovative hypertension control program should lead to a significant reduction of the CVD burden including morbidity, mortality and disabilities

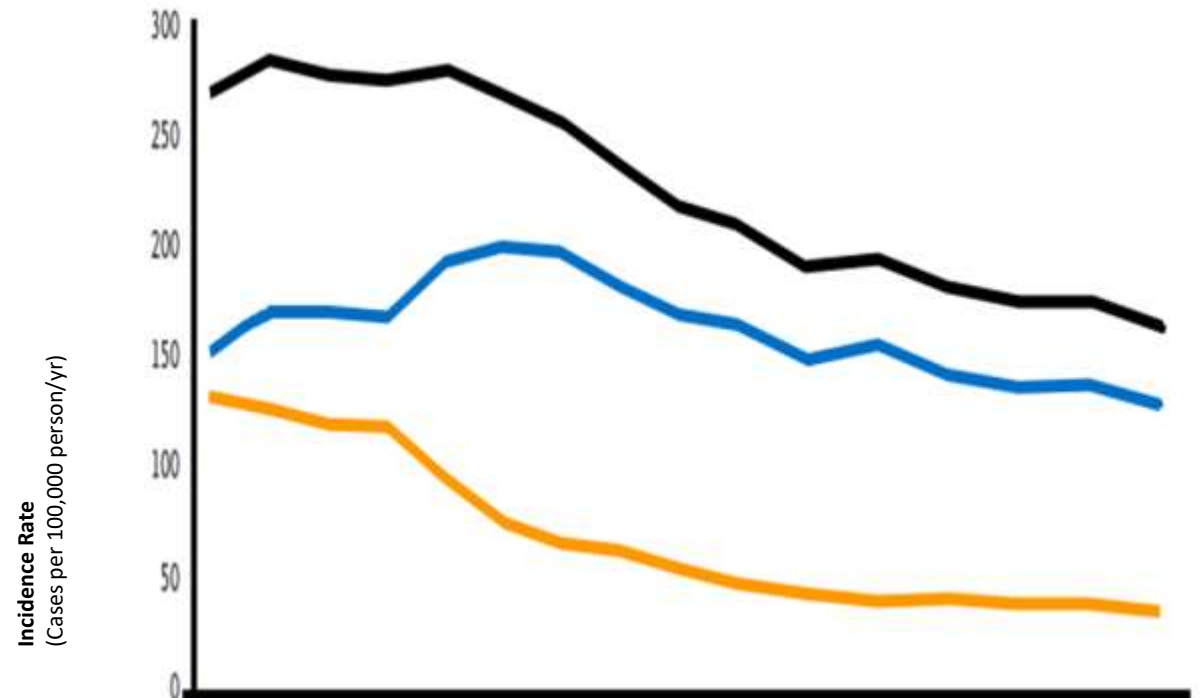# Outcome indicators on Hypertension Control
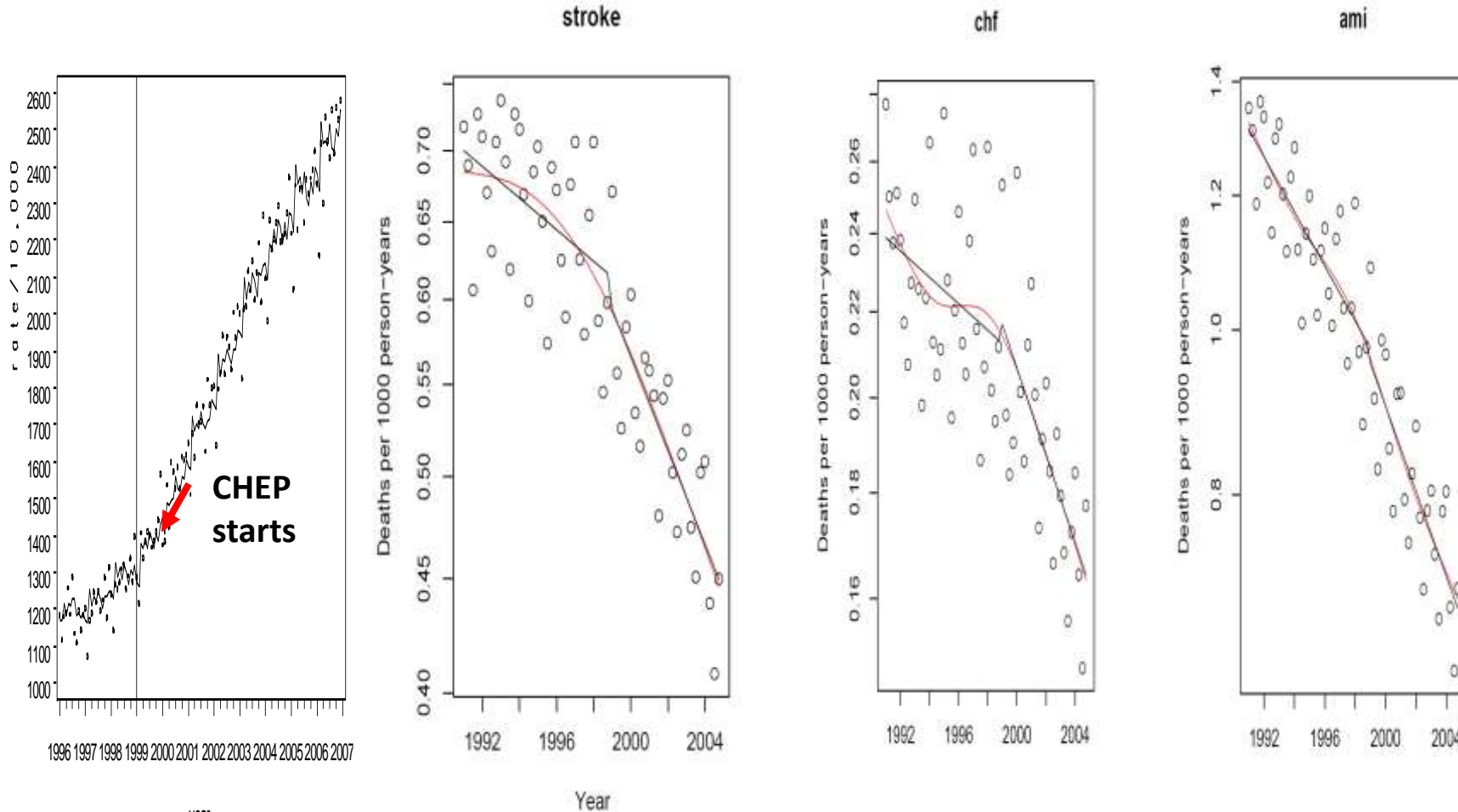
Outcome Indicators for Hypertension Control

KPNC vs. National and California HTN Control

Falling Heart Attack Rates 1999-2014 - KPNC

Objectives and priority actions to improve hypertension control in a HEARTS scenario

HEARTS Objectives: improve CVD management in PHC to reduce the burden of CVD

Population

Objectives
- Reduce the **incidence** through population-wide policies
- Improve **control** of hypertension

Actions
- Prevention
- Treatment
    o Awareness
    o Treatment
    o Control

Health Services/Program

Objetives
- Improve **control** of hypertension through a total CVD risk approach
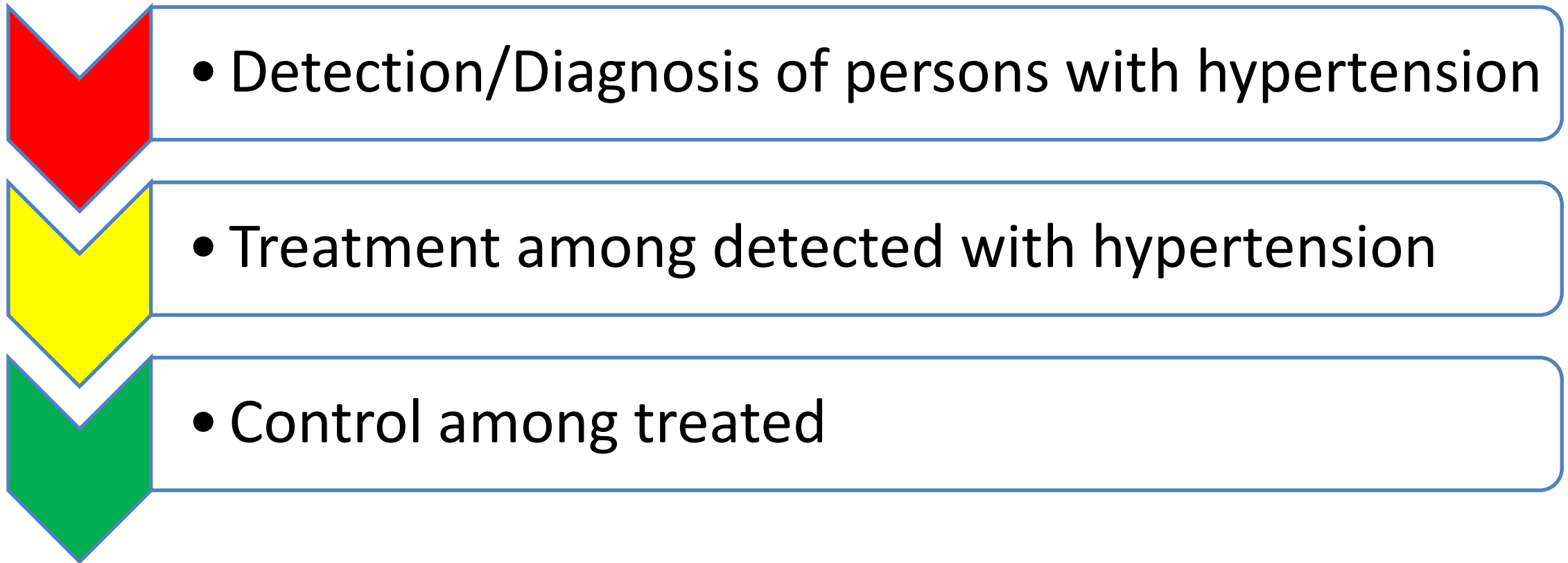
Actions
- Reduce the health care-gaps
    o Increase the detection/diagnosis
    o Ensure quality treatment for all those detected
    o Improve control among treated

HEARTS. Health Facility/Program Indicators

- Cascade of treatment
- Key definitions at Health Facility/Program level
- Actions and indicators to improve the coverage of the program
- Actions and indicators to improve control of persons with hypertension in the program

Actions and indicators to improve
the **coverage of the program** in a HEARTS scenario

Actions	Indicators
	Core
Increase the detection/diagnosis of persons with hypertension	**Percentage of persons with hypertension covered by the program by sex, age, SES**
	Expanded
Increase the CVD risk evaluation in persons with hypertension	**Percentage of persons with hypertension by age, sex and SES with CVD risk evaluation**
Improve the clinical follow-up of persons with hypertension according their CVD risk	**Average number of visits by persons with hypertension by CVD risk score group (low, moderate, high)**

Actions and indicators to improve control of persons with hypertension in the program in a HEARTS scenario

Actions	Indicators
	Core
Improve BP control in persons with hypertension	Percentage of persons with hypertension with BP controlled by sex, age, SES
	Expanded
Improve BP control in persons with hypertension according the CVD risk	Percentage of persons with hypertension with BP controlled by age, sex and SES by CVD risk score group
	Mean of SBP and DBP by age, sex and SES by CVD risk score group
Improve the treatment quality & Secondary prevention treatment according the CVD risk	Percentage of persons with hypertension by age, sex and SES in treatment using combination of BP lowering medications by CVD risk score group
	Percentage of persons with hypertension by age, sex and SES in treatment using combination of BP lowering medications + Statins by CVD risk score group
	Percentage of persons with hypertension by age, sex and SES in treatment using combination of BP lowering medications + Statins + Aspirin in CVD high risk score group

Key definitions at Health facility/Program level

Data source: registries of hypertensives

❑ **Hypertension**

- SBP ≥ 140 mm Hg, or a DBP ≥ 90 mm Hg, or current use of blood pressure–lowering medications.

❑ **Registry of persons with hypertension**

- Registry of persons with the diagnosis of hypertension and taking blood pressure–lowering medications.

❑ **Treatment of hypertension**

- Persons with hypertension taking blood pressure–lowering medications

❑ **CVD risk score**

- Persons with hypertension with CVD risk assessed (low, middle, high)

PAHO

6 Steps to estimate hypertension program coverage and hypertension program control in a HEARTS scenario

1. Total reference population of the catchment area

2. Total adult (≥ 18 years of age) population of the catchment area

3. Best estimate of prevalence of hypertension at population level

4. Total estimated number of people with hypertension based on the best estimate of prevalence of hypertension at population level

5. Total numbers of patients in the registry with the diagnosis of hypertension and taking blood pressure–lowering medications.

6. Number of patients in the registry with controlled blood pressure (SBP <140 and DBP <90 mmHg)

Coverage indicators

Short name of the indicator	Indicators Components and metric
	Core
Program coverage **Stratified by sex, age, SES**	**A/B x 100 %** **A: Number of persons with hypertension in the registry**
	B: Number of persons with hypertension based on the best estimate of prevalence
	Expanded
Program CVD risk evaluation **Stratified by sex, age, SES**	**A/B x 100 %** **A: Number of patients with hypertension in the registry CVD risk evaluation**
	B: Number of persons with hypertension in the registry
Visits **Stratified by CVD Risk**	**Average number of visits by persons with hypertension**

Control indicators

Short name of the indicator	Indicators Components and metric
Core	
Program Hypertension control **Stratified by sex, age, SES**	**A/B x 100 %** **A: Number of persons with hypertension in the registry with BP < 140/90**
	B: Number of persons with hypertension in the registry
Expanded	
Hypertension control by CVD risk **Stratified by age, sex and SES by CVD risk score group**	**A/B x 100 %** **A: Number of persons with hypertension in the registry with BP < 140/90**
	B: Number of persons with hypertension in the registry
Mean SBP and DBP by CVD Risk **Stratified by age, sex and SES by CVD risk score group**	**Mean of SBP and DBP**

Control indicators

Short name of the indicator	Indicators Components and metric
	Expanded
Combination of BP medications by CVD risk Stratified by age, sex and SES and by CVD risk	A/B x 100 % **A: Number of persons with hypertension in the registry using combination of BP lowering medications**
	B: Number of persons with hypertension in the registry
BP medications + Statin by CVD Risk Stratified by age, sex and SES and by CVD risk	A/B x 100 % **A: Number of persons with hypertension in the registry using combination of BP lowering medications + Statins**
	B: Number of persons with hypertension in the registry
BP medications + Statin + Aspirin by CVD Risk Stratified by age, sex and SES and by CVD risk	A/B x 100 % **A: Number of persons with hypertension in the registry using combination of BP lowering medications + Statins + Aspirin**
	B: Number of persons with hypertension in the registry

Clinical variables needed to expand the analysis of coverage and control of the program in a HEARTS scenario

Socio-demographic
- Age [18-19, 20-29 [18-29], 30-39, 40-49, 50-59 [30-59], 60-69, 70-79, 80+] * STEPS compatibles
- Sex
- SES [as best definition for each country]

BP measurements
- SBP and DPB

Anthropometrics measurements
- Height and Weight

CVD Risk Score
- Low, moderate, high

Other diagnosis
- Diabetes
- CKD
- Coronary heart disease, ever
- Stroke, ever

BP medicines
- ACE-I angiotensin-converting enzyme inhibitors
- ARB angiotensin receptor blockers
- Diuretics
- CCBS calcium channel blockers
- Beta-blockers
- Fixed-dose combinations

Other medicines
- Statins
- Aspirin
- Others [Diabetes??]

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❑How to interpret the data for the WHO global hypertension report

HEARTS. System for Monitoring and Evaluation

Premises

- All the patients in the registry have been diagnosed with hypertension and are receiving antihypertensive treatment on a regular basis.
- Most of the patients are treated according a standardized treatment protocol
- Frequency of follow-up of patients according to CVD risk (low, medium and high).

Assumptions

- All patients with hypertension attend / have at least one consultation a year.
- Patients who do not have at least one visit a year will be considered uncontrolled.
- Patients who are not controlled with drug treatment require more frequent follow-up (2-4 weeks)

Excel File Demo

HEARTS implementation. National Dashboard.
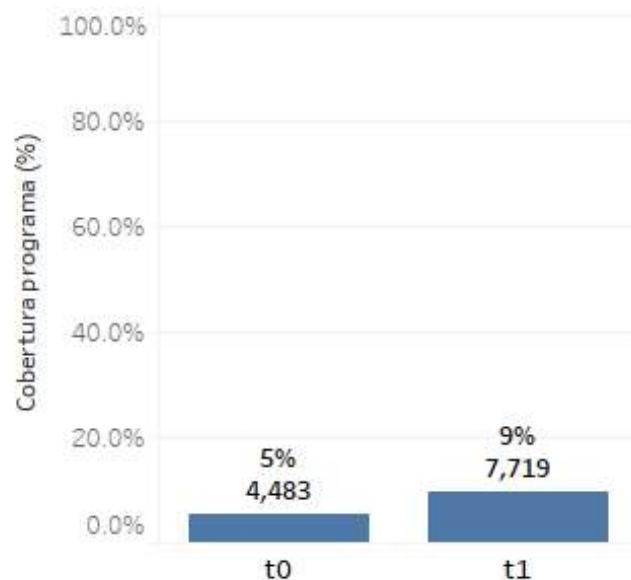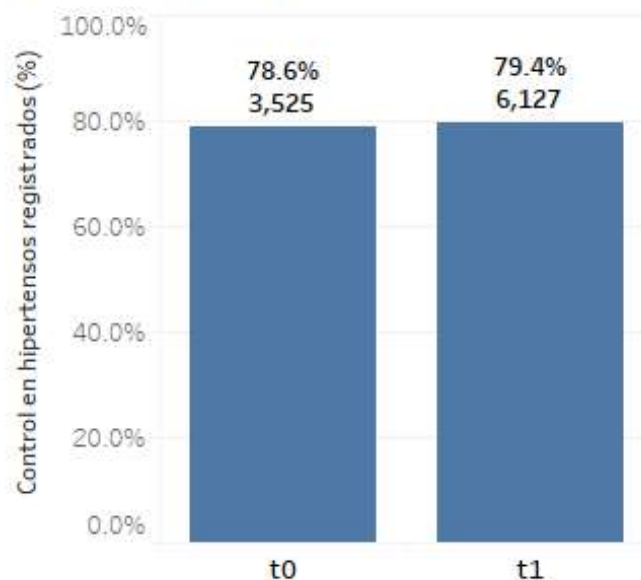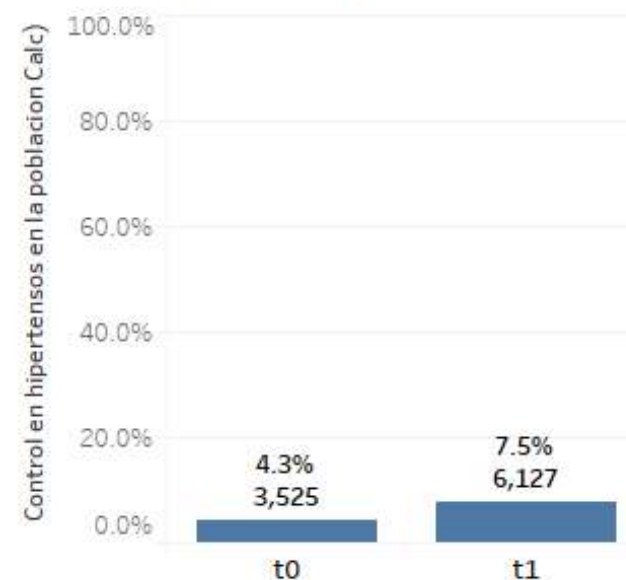
Fuente: Datos reportados por los países parcipantes en el programa HEARTS en las Américas

Performance Evaluation. Coverage and Control. Selected PHC. Demo
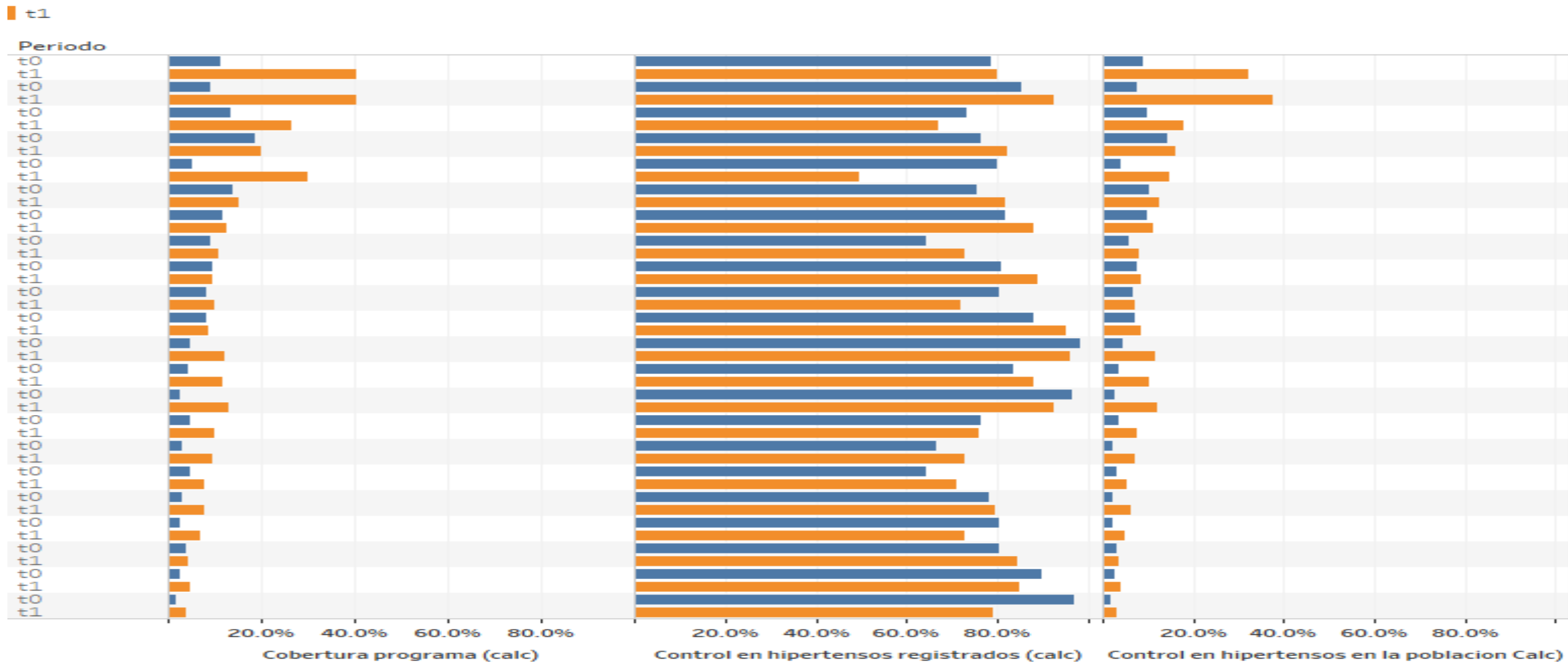
How to interpret the data for the WHO hypertension report?

A. LOW LEVEL OF DATA COMPLETION

❑ The letter S of the acronym HEARTS = Monitoring and Evaluation System (M&E).

❑ The M&E System is the brain of HEARTS.

❑ An M&E System to be effective needs:

- to generate good quality data (accurate and complete),
- to do so in a timely manner (meaning, frequently),
- to provide feedback to everyone who participates in the program and,
- to lead to the adoption of corrective measures appropriately. (Program evaluation and implementation research play a role here)

❑ Without M&E you cannot implement a program, among other things because:

- participants are not being informed of the results of their efforts and,
- because those who lead the programs have no evidence of how the program is working

Health centers that are "implementing HEARTS" (or countries) but **do not report data** as often as needed (or that do so incompletely) signifies that these centers (or countries) are not implementing the program (in the strict sense of evaluation) because they are not being able to document their results.

How to interpret the data for the WHO hypertension report?

B. THE MAIN RESULTS AND INDICATORS DO NOT CHANGE OVER TIME OR EVEN WORSEN

- **Coverage:** health system's ability to detect and treat people at risk and with hypertension (access).
  - Coverage is represented by completion of the registry and is based on the estimated prevalence of hypertension for the health center.

- **Control:** health system's ability to meet the treatment standard, including clinical monitoring and therapeutics.(quality)
  - Control is represented as a percentage of patients being treated with blood pressure figures < 140/90 mmHg.

If a program does not change its results over time it means that this program is not meeting two of its main objectives: increasing coverage and improving control. It also means that the program needs to re-evaluate and modify intervention strategies. (Program evaluation and implementation research play a role here)

How to interpret the data for the WHO hypertension report?

LOW COVERAGE AND ACCEPTABLE CONTROL	ACCEPTABLE COVERAGE AND LOW LEVELS OF CONTROL	LOW LEVEL OF SCALE OF THE PROGRAM
Very low (< 50%) and low coverage (< 70%) and acceptable control (> 70% control among treated)	Acceptable coverage scenarios (> 70%) and low levels of control among the treated (< 60%),	HEARTS is viewed as the model of cardiovascular care for primary health care in this Region by 2025 and consequently HEARTS countries should have a strategic plan to achieve this goal by 2025.

How to interpret the data for the WHO hypertension report?

C. LOW COVERAGE AND ACCEPTABLE CONTROL: CAN BE MISLEADING.

- Usually the "controlled" patients have better access to the health care system, have greater motivation, are more educated, have higher socioeconomic status. In short, they have a different and more favorable risk profile.

- In this scenario, the most at-risk and most vulnerable remain out of the care system.

- This may be a misleading scenario because it gives the false impression that the program works well when it is actually excluding those who have less access and possibly more needs.

This is the scenario that typifies systems where
access to services is an important barrier to hypertension control

How to interpret the data for the WHO hypertension report?

D. ACCEPTABLE COVERAGE AND LOW LEVELS OF CONTROL

- In acceptable coverage scenarios (> 70%) and low levels of control among the treated (< 60%),

  the problem seems more related to the quality of the system to provide quality care.

- This may depend on multiple factors:

  a) treatment protocol that is not operating well,

  b) therapeutic inertia,

  c) problems with medications, including access to quality medicines.

HEDIS Controlling High BP Measure. September 2019

J Brettler. KP 2020
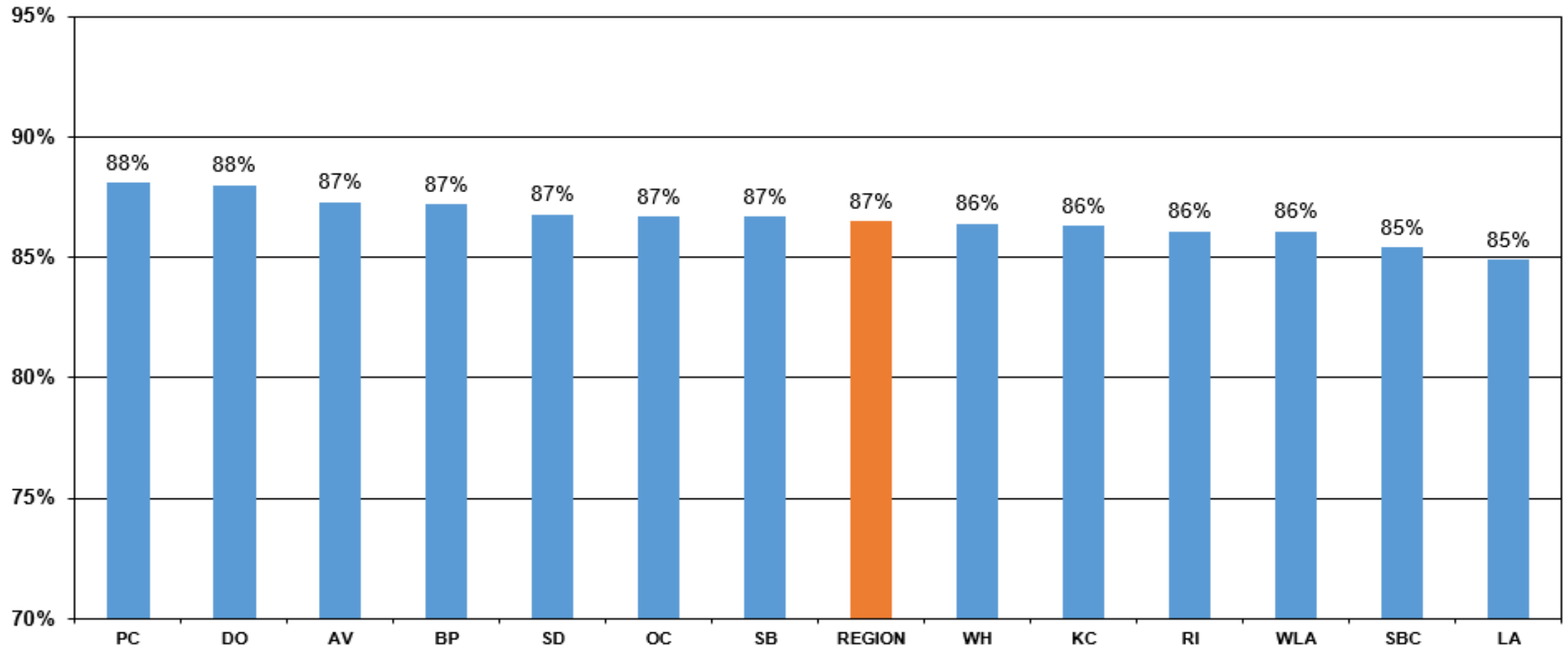
COVID-19 and CVD
A double crisis and opportunities for change

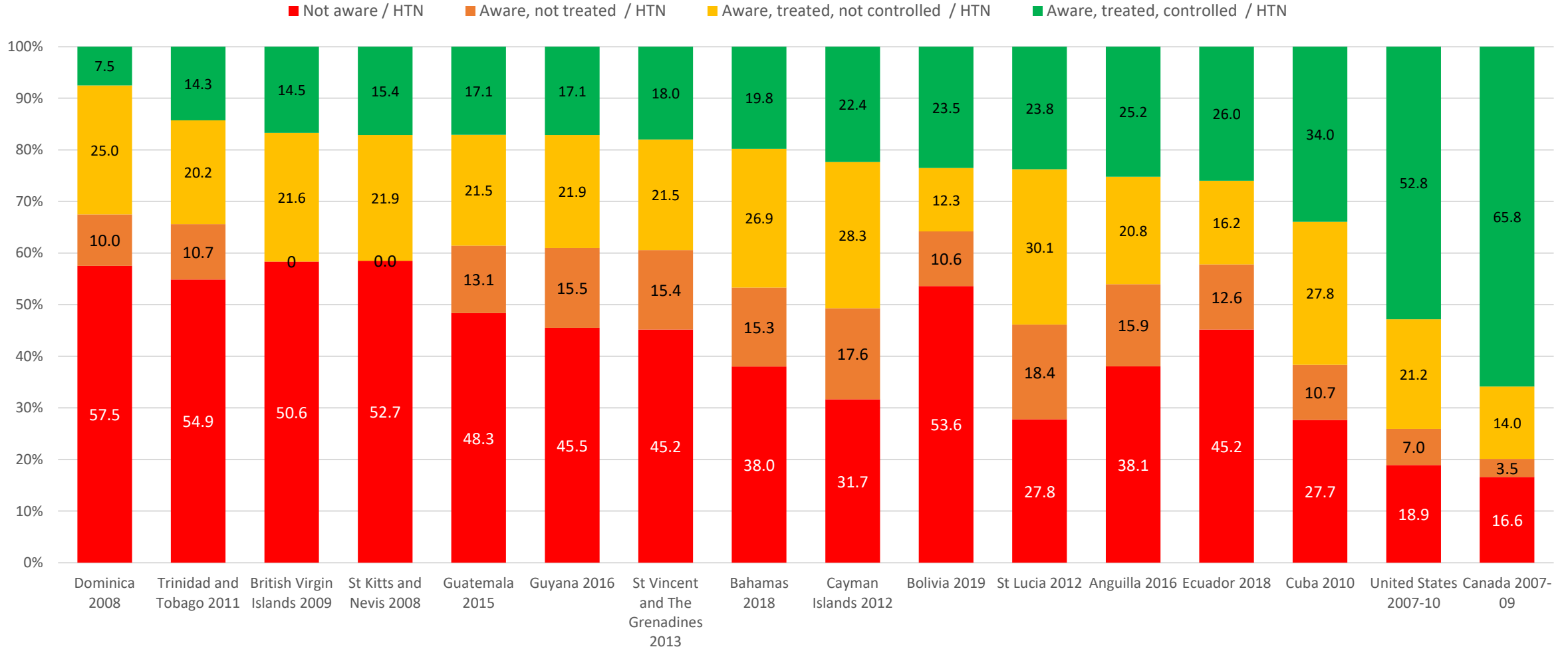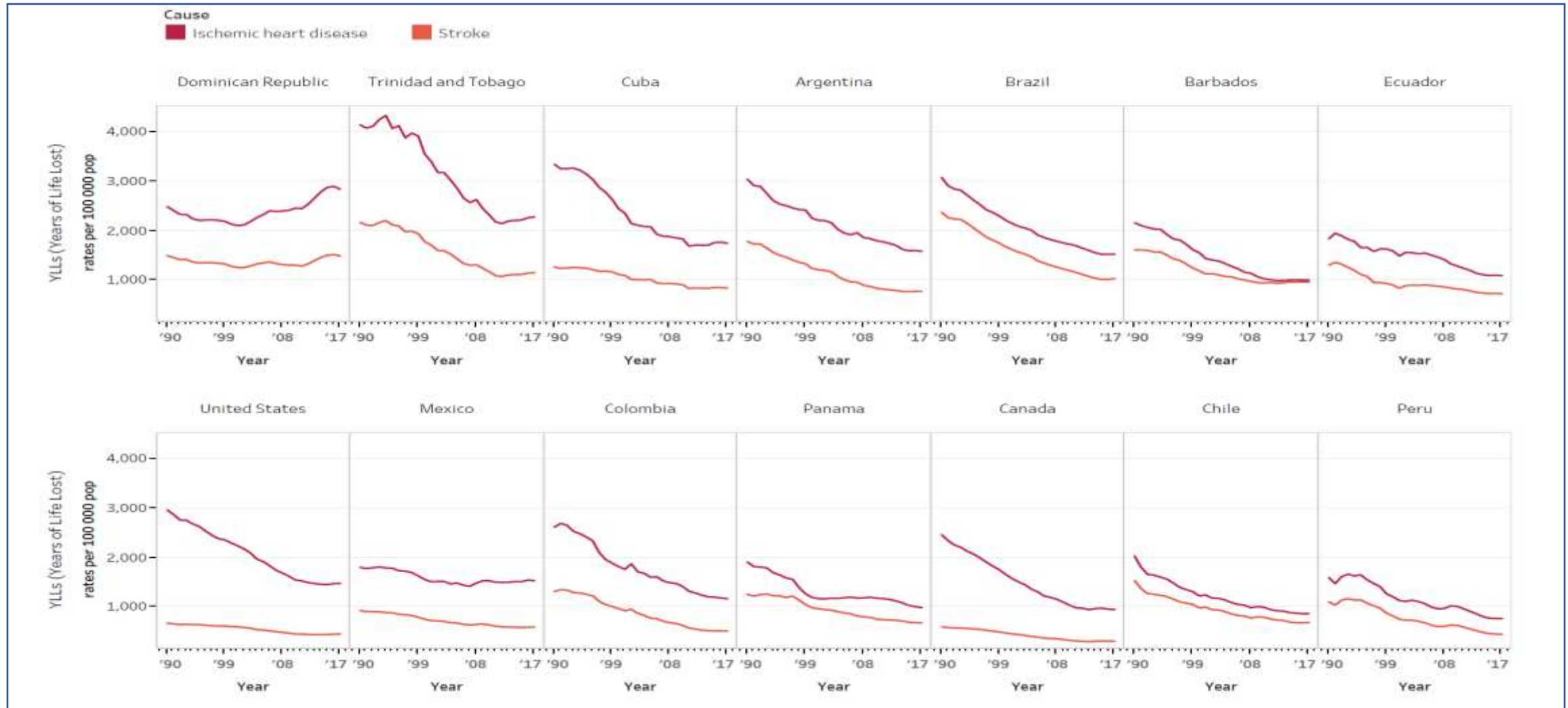# Age-standardized rates of CVD DALYs per 100 000 population in 2017 and average (mean) annual percentage change in 1990-2017 (A) and 2010-2017 (B) in both sexes combined by country
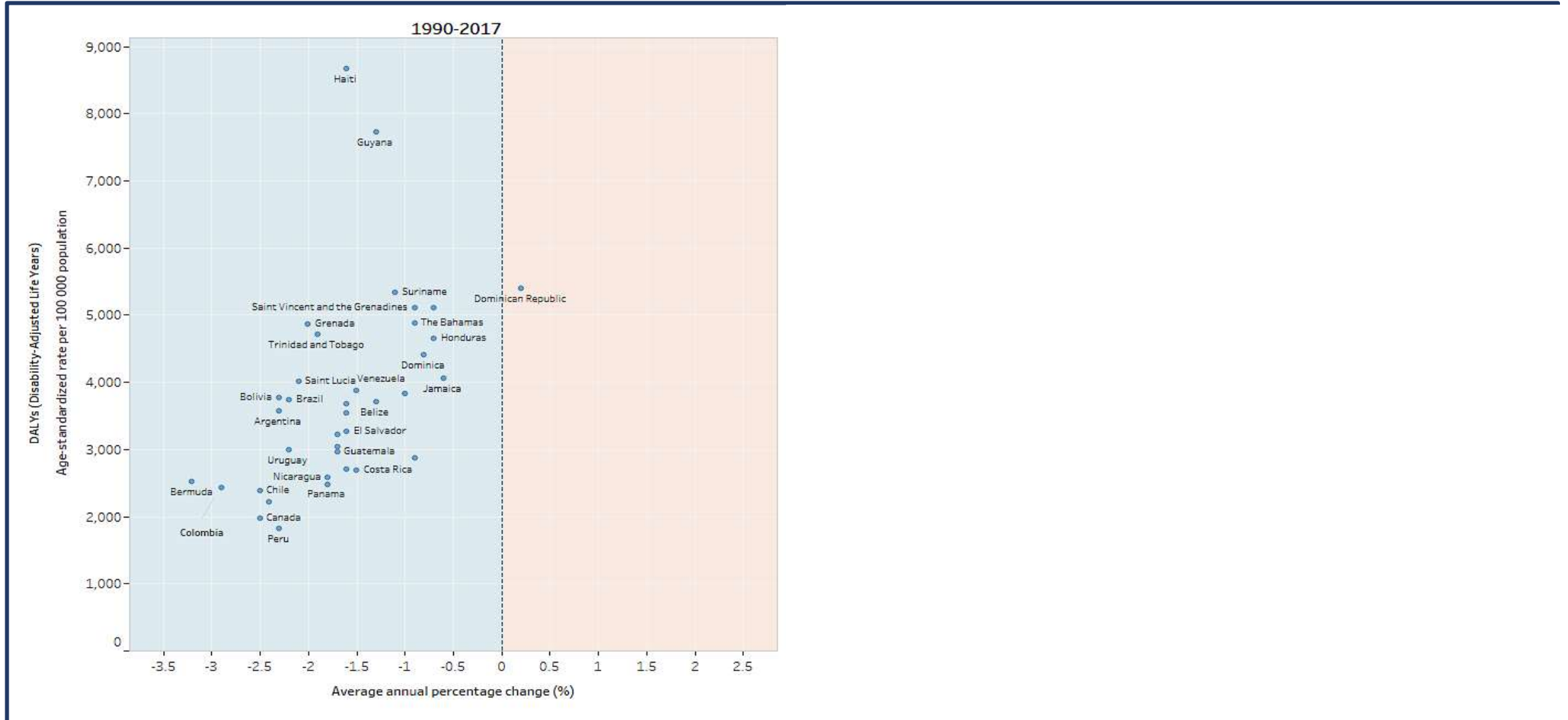
Hypertension cascade of care. Selected countries of the Americas

HE RTS IN THE AMERICAS

Legend: Not aware / HTN · Aware, not treated / HTN · Aware, treated, not controlled / HTN · Aware, treated, controlled / HTN

Country	Not aware	Aware, not treated	Aware, treated, not controlled	Aware, treated, controlled
Dominica 2008	57.5	10.0	25.0	7.5
Trinidad and Tobago 2011	54.9	10.7	20.2	14.3
British Virgin Islands 2009	50.6	0	21.6	14.5
St Kitts and Nevis 2008	52.7	0.0	21.9	15.4
Guatemala 2015	48.3	13.1	21.5	17.1
Guyana 2016	45.5	15.5	21.9	17.1
St Vincent and The Grenadines 2013	45.2	15.4	21.5	18.0
Bahamas 2018	38.0	15.3	26.9	19.8
Cayman Islands 2012	31.7	17.6	28.3	22.4
Bolivia 2019	53.6	10.6	12.3	23.5
St Lucia 2012	27.8	18.4	30.1	23.8
Anguilla 2016	38.1	15.9	20.8	25.2
Ecuador 2018	45.2	12.6	16.2	26.0
Cuba 2010	27.7	10.7	27.8	34.0
United States 2007-10	18.9	7.0	21.2	52.8
Canada 2007-09	16.6	3.5	14.0	65.8

Data analyzed and compiled by PAHO NMH Surveillance Team. 2020

Age-standardized years of life lost rates per 100 000 population from ischemic heart disease and stroke, both sexes combined in selected countries, 1990-2017. HEARTS implementing countries + United States and Canada

Martinez R et al.. *J Clin Hypertens*. 2020;22:1296–1309. https://doi.org/10.1111/jch.13922

Age-standardized rates of CVD DALYs per 100 000 population in 2017 and average (mean) annual percentage change in 1990-2017 (A) and 2010-2017 (B) in both sexes combined by country
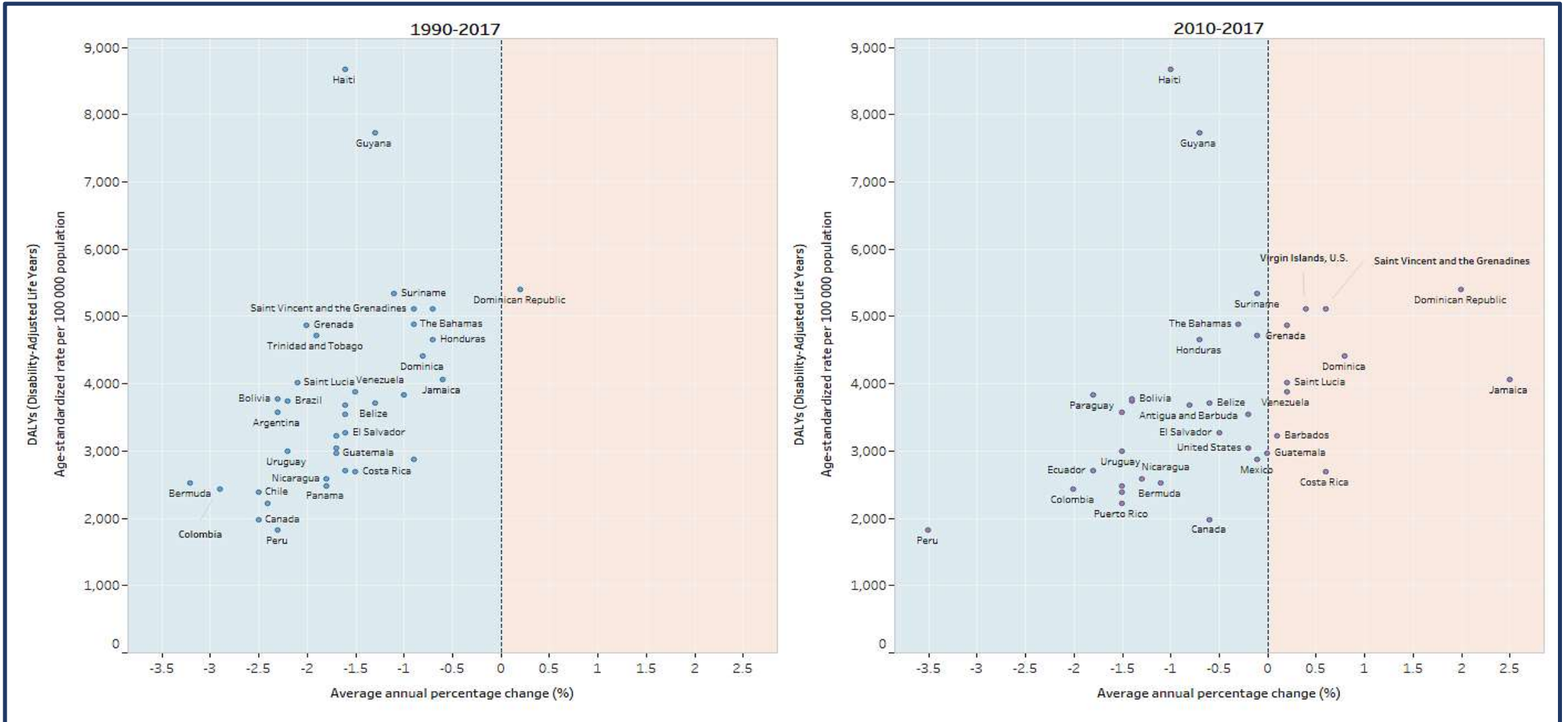
Building Back Better with HEARTS in the Americas

(HEARTS as part of the solution for COVID-19 +)

HE RTS
IN THE AMERICAS

12 implementing countries. 371 PHC centers. > 6 million people (based on the health service catchment areas).

Hospitalizations were 6 times higher and deaths 12 times higher for COVID-19 patients with reported underlying conditions*

MOST FREQUENTLY REPORTED UNDERLYING CONDITIONS

CARDIOVASCULAR DISEASE | DIABETES | CHRONIC LUNG DISEASE

❑ **Bold package.** Strengthen PHC services for CVD management using the HEARTS technical package.

❑ **Smart treatment.** Adapt and update standardized treatment protocols and national formularies for CVD management.

❑ **Accurate BP measurement.** Strengthen BP competency and regulatory environment for exclusive use of validated BP devices.

❑ **Active Care Team.** Team-Based Care Innovation in action.

 ▪ **Risk mitigation & continuity of care innovation** (health services monitoring, risk-based care, intensification treatment approach, self-care, 90-days prescription cycle, telemedicine, BP monitoring, vaccination).

❑ **Data Driven Decision Making.** Building a sustainable data-driven program.

❑ **Continuous learning.** New learning resources for PHC team https://www.paho.org/en/hearts-americas

HEARTS IN THE AMERICAS

THANK YOU

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