

Hypertension Prevention and Control in Latin America and the Caribbean

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It has long been recognized by the Pan American Health Organization (PAHO) and the World Health Organization (WHO) that hypertension assessment and management was critical to the prevention and control of cardiovascular diseases (CVDs). In 2000, PAHO's Directing Council called for the implementation of surveillance systems, development of national prevention plans, and greater emphasis on controlling hypertension.¹ In 2006, PAHO adopted its first regional strategy and plan of action for chronic diseases and their risk factors,² with hypertension being a key element of that strategy.

In Latin America and the Caribbean (LAC), a region with significant socioeconomic disparities and countries at different stages of epidemiological transition, the prevention and control of hypertension has been prioritized quite unevenly. The purpose of this brief report is to give an update on the burden of the problem, the mandates and priorities, surveillance activities, and some initiatives on the current agenda based on lessons learned for prevention and control of hypertension in LAC.

BURDEN OF THE PROBLEM

CVD (International Classification of Diseases, 10th Revision [ICD-10] codes 100-199) account for 29% of deaths in LAC, and are the leading cause of death in all countries of LAC — even in the lowest-income countries (Haiti, Bolivia, and Nicaragua). Every year, an estimated 1.6 million people die from these diseases in LAC, half a million of them before 70 years of age.³ Mortality caused by CVDs in the region declined at a rate of 1.9% per year from 2000 to 2010, although low- and medium-income countries had higher rates of cardiovascular mortality at 56.7% and 20.6%, respectively, as compared with high-income countries.⁴ Hypertension, which is the main risk factor for ischemic heart diseases and cerebrovascular diseases, affects between 20% and 40% of adults in LAC.^{5–7} It is estimated that hypertension in LAC accounts for 6.62% of disability-adjusted life years (DALY) corresponding

to CVD, surpassed only by all dietary risks combined (7.16% of DALYs) and followed by high body mass index (3.13% of DALYs).⁸

MANDATES AND PRIORITIES

The prevention and the control of CVD plays a prominent role in terms of the goals and indicators agreed to at the World Health Assembly,⁹ in response to the Political Declaration of the 2011 High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases (NCDs) and their risk factors.¹⁰ In fact, reducing premature mortality caused by NCDs by 25% by 2025 will depend to a large extent on what occurs with mortality caused by CVD. The remaining eight WHO voluntary targets agreed upon⁹ are also directly or indirectly related to hypertension.

The Region of the Americas has an NCD prevention and control plan¹¹ aligned with the global mandates.⁹ What is unique, however, is that this region is placing more emphasis on the control of hypertension. In fact, the target agreed upon for 2019 is to achieve a rate of hypertension control in the population of 35%.¹² This would imply figures above 70% in terms of those who know their hypertension status (awareness), the percentage of those treated among those who know their status (treatment), and the percentage whose hypertension is controlled (<140/90 mm Hg) among those who receive treatment (control among treated).

Unfortunately, there are few population-wide hypertension control success stories in the region. For example, the Hypertension in Seven Latin American Cities: The Cardiovascular Risk Factor Multiple Evaluation in Latin America (CARMELA) trial reported that 24.3% to 46.9% of patients were unaware that they had hypertension, more than half of those with hypertension were untreated, and 12.0% to 41.0% were treated and controlled.¹³ More recently, the Prospective Urban Rural Epidemiological (PURE) study for South America (Argentina, Chile, and Brazil) reported an awareness rate of 57.1%, a treatment rate of 52.8%, a control rate among those receiving treatment of 35.5%, and a population control rate of 18.8%.¹⁴ In Chile, the 2010 national survey¹⁵ reported an awareness rate of 65.0%, treatment rate of 37.3%, control among treated rate of 45.3%, and a population control rate of 16.5%. The rate of population control recently reported in Cienfuegos, Cuba, was slightly higher than that in Chile,¹⁶ although the Cuban population control rates had been reported to be higher in the past.¹⁷

[Correction added after initial online publication on February 28, 2015: On the first page of the article, the first sentence under the heading, "Burden of the Problem" has been revised.]

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SURVEILLANCE IS CRITICAL

In 2001, PAHO showed the methodological limitations of community-based studies for surveillance of hypertension in LAC¹⁸ and promoted an instrument to improve the quality of population estimates.¹⁹ In a joint effort with the National Heart, Lung, and Blood Institute known as the Pan American Hypertension Initiative, a standard procedure was agreed upon to measure blood pressure in population studies.^{20,21}

One decade later, hypertension surveillance in LAC still suffered from significant methodological limitations.⁶ For example, while the number of LAC studies published between 2000 and 2010 increased, the percentage that met the minimum methodological requirements to be regarded as useful for surveillance purposes did not increase significantly. In fact, only 46% of the studies published reported rates of hypertension awareness, treatment, and control. Furthermore, a majority of the studies published were primarily conducted in urban centers, and the quality and geographical distribution of those published reveal significant differences among countries. In short, improving the quality of hypertension surveillance will be an essential step to better understand the magnitude of the problem and the effectiveness and efficiency of the actions underway in LAC. Promoting the use of a common methodology to standardize surveillance reports is one approach that has been called for repeatedly.²²

COMPREHENSIVE EFFORTS IN PREVENTION

Hypertension prevention cannot be separated from prevention of other CVDs and the primary health-care strategy. That is one of the most important recommendations PAHO gave to decision makers.^{23,24} Nevertheless, there are certain interventions that play an essential role beyond the clinical area.²⁵ Certainly, one of the most cost-effective interventions is reducing salt/sodium in the diet, an initiative that PAHO is putting at the center of its prevention strategy.²⁶ As was to be expected, this is encountering a range of obstacles because, among other reasons, it collides with powerful economic interests, mainly in the food industry.

Another much more all-encompassing and longer-term strategy is that of preventing obesity in children and adolescents.²⁷ In fact, the Americas is the first WHO region to adopt an action plan that includes specific public health measures that range from promoting breastfeeding, through promoting physical activity at schools, to fostering fiscal policies to discourage the consumption of unhealthy foods and ban misleading advertising of foods.²⁷ A large component to achieving success in these arenas rely on partnerships with governmental, nongovernmental, private, and health-care organizations.

SIMPLICITY FOR TREATMENT AND AVAILABILITY OF MEDICATIONS

PAHO is interested in sharing best practices and promoting successful initiatives in hypertension control.

In this regard, two cases in particular stand out, namely that achieved in Canada at a population level and that by Kaiser Permanente of Northern California (KPNC) in the United States whose more local experience with practical implications make it attractive.

The prevalence of hypertension has remained stable in Canada during the past two decades, and rates of treatment and hypertension control have improved significantly over time. In fact, the rate of population control of hypertension is above 50% as a result of a combination of a better awareness rate (82.5%), treatment rate (95.8% of those aware), and rate of control among the treated (81.8% of those treated).²⁸ This outcome has been attributed to a marked increase in the use of antihypertensive drugs in Canada since 1990,²⁹ and also the strong influence of the Canadian Hypertension Education Program.³⁰

From 2001 to 2009, KPNC almost doubled the number of patients in its hypertension registry, and, based on NCQA Healthcare Effectiveness Data and Information Set measures, increased control among the treated from 43.6% to 80.4% (of those diagnosed). These improvements were markedly better than the national commercial figures for hypertension control, which increased modestly from 55.4% to 64.1% (of those diagnosed) over the same time period.³¹ The KPNC program's successes are attributable in part to the fact that they actively manage a registry of patients, maintain and share standardized performance metrics, implement evidence-based clinical guidelines, include visits by medical assistants to measure blood pressure, and accommodate single-pill combination pharmacotherapy.³¹

The Centers for Disease Control and Prevention (CDC), PAHO, World Hypertension League (WHL), and other stakeholders such as the Inter American Society of Cardiology, Latin American Society of Hypertension, Latin American Society of Nephrology and Hypertension, Latin American Society of Internal Medicine, Latin American Federation of Obstetrics and Gynaecology, Healthy Caribbean Coalition, and some Ministers of Health of the Region, among others, share the conviction that hypertension control on a larger scale is achievable, even in the lower- to middle-income countries, and that these good examples could be replicated appropriately. To achieve this, they launched an initiative known as the Global Standardized Hypertension Treatment Project (GSHTP), which aims to support the development of an approach to standardize pharmacologic treatment of hypertension and improve control rates. The concept is aimed to apply what we learned from large-scale management of tuberculosis and HIV/AIDS treatment to managing hypertension. Emphasis is placed on three components, namely: (1) standardized treatment protocols, (2) identification and availability of a core set of affordable and effective drugs, and (3) a focus on service delivery.^{32,33}

The second component of the GSHTP aims to improve the availability of drugs, and it has identified

TABLE. BP-Lowering Drugs Selected as Core Set of Medications by the GSHTP and Included in the List of PAHO SF for Medications^{32,34}

Medication Class	Primary	GSHTP	PAHO SF	Backup	GSHTP	PAHO SF
Diuretic	Chlorthalidone	X	X	Hydrochlorothiazide	X	X
ACE inhibitor	Lisinopril	X		Enalapril	X	X
ARB	Losartan	X	X	Valsartan	X	
CCB	Amlodipine	X	X	None		
β-Blocker	Bisoprolol	X	X	Metoprolol SR	X	X
Other	Spironolactona	X	X	None		

Abbreviations: ACE, angiotensin-converting enzyme; ARB, angiotensin receptor blocker; BP, blood pressure; CCB, calcium channel blocker; GSHTP, Global Standardized Hypertension Treatment Project; PAHO SF, Pan American Health Organization Strategic Fund.

an important role to be played by PAHO through the PAHO Strategic Fund.³⁴ This is a mechanism to assist member states, particularly to promote the acquisition of high-quality medicines and essential public health supplies at affordable prices for countries of the Americas. The Strategic Fund has been recognized as an effective mechanism for improving access and availability of essential medicines for noncommunicable diseases and particularly for hypertension.³⁴ In fact, the drugs selected by the GSHTP as the core set of medications for the appropriate treatment of most adults with hypertension, were quickly incorporated into the list of drugs under the PAHO Strategic Fund and are now available so that countries can acquire them at more competitive prices. The core set of medication selected by GSHTP meet the following criteria: efficacy and safety, evidence-based clinical and effectiveness outcomes, scored tablet, tolerability (few side effects), once-a-day dosage, cost/affordability/availability, regional considerations (ie, diversity of the population), and inclusion on the WHO model list of essential medicines³² (Table).

HEALTH SYSTEM APPROACH

Available data suggest that the models of care adopted for hypertension control in both high- and low- to middle-income countries have not worked even though most countries have evidence-based clinical guidelines and an enormous list of safe and effective antihypertensive drugs. These are critical elements leading us to urgently advocate a change of approach marked by innovations in care.

Recognizing the challenges inherent in managing NCD, of which hypertension is a prime example, PAHO is promoting an innovative, more comprehensive model of care, which includes long-term follow-up.³⁵ As part of this chronic care model, both the health-care team (not only the physician) and the patient and community stay more informed and are more actively involved in defining and monitoring the plan of care in order to achieve better clinical outcomes. This model is completely compatible with what the American Heart Association, the American College of Cardiology, and the CDC promote as the most effective way to control

hypertension.³⁶ Adding to its effectiveness is that the model is based on simple and practical services and treatment algorithms that have been recommended for controlling high blood pressure.^{36,37}

Finally, PAHO has initiated an intervention that is considered one of the best ways to reduce CVD (to which hypertension often serves as the gateway), namely, promoting assessments of cardiovascular risk, providing counseling and offering multi-drug therapy to people with high cardiovascular risk in low-middle income countries.³⁷ Unfortunately, many countries still have not yet incorporated cardiovascular risk assessment into the set of interventions offered at the primary care level.³⁸ In order to facilitate this type of assessment while empowering the general public, PAHO has launched an application for mobile devices and computers that can be used by both health-care providers and the general public to estimate cardiovascular risk. It provides advice on nonpharmacologic interventions to reduce risk, calculates body mass index, and helps patients remember when it is time to take their medications.³⁹

CONCLUSIONS

PAHO is prioritizing the prevention and control of hypertension through a series of systematic interventions and strong partnerships. Enhanced surveillance methods will assess the impact of health promotion and clinical interventions. Efforts to promote physical activity and healthy diets (especially lowering dietary salt) aim to reduce the prevalence of hypertension and improve control. The program has already developed a mechanism to make antihypertensive drugs more available and affordable within the Americas as a key short-term success. Assisting countries implement chronic care models focusing on hypertension control using simplified approaches is an ongoing focus as are efforts to incorporate risk assessment into routine hypertension management. It is hoped that the PAHO effort will achieve and surpass the United Nations target of a 25% decrease in uncontrolled hypertension and provide global best practices.

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