

The burden of hypertension in Cuba



Increased blood pressure is the leading risk factor for death worldwide, leads to the greatest disease burden in low-income to middle-income countries (LMICs), and prevalence is increasing.^{1,2} By contrast, the age-adjusted prevalence of hypertension is decreasing in high-income countries.² The global data on hypertension are daunting: four in ten people older than 25 years have hypertension, fewer than 50% are aware of their status, and only 14% have controlled blood pressure.² Increased global attention will improve hypertension control. WHO has a voluntary target for countries to reduce raised blood pressure by 25% by 2025. Leading multiple organisations, WHO and the US Centers for Disease Control and Prevention have also developed supporting tools to aid countries to reduce the burden of hypertension.³ In addition, with more than US\$200 million of philanthropic funding, the Resolve to Save Lives global intervention is focused on controlling hypertension.⁴

In *The Lancet Public Health*, Nurys Armas Rojas and colleagues⁵ report a high-quality, long-term cohort study that adds to the story of the burden of hypertension. In Cuba, which is an LMIC, they surveyed a cohort of 136 111 residents aged 35–79 years in 1996–2002. In face-to-face interviews during household visits, participants were asked about health-related behaviours and medical history, and blood pressure was measured. In 2006–08, a subset of 23 114 participants was resurveyed. The baseline prevalence of hypertension was 34%, which is on a par with the global average of 31%.² Of people who had hypertension, 67% were aware of being diagnosed and 51% were taking antihypertensive drugs. These values are similar to the averages for high-income countries (67% and 56%, respectively).² Among respondents with diagnosed hypertension, three-quarters were receiving treatment, although hypertension was controlled in only 36% of treated patients. Thus, the overall rate of control was 18% among all people with hypertension. This value is between the averages for high-income countries and LMICs (8% and 28%, respectively).² Two-thirds of participants with hypertension who were receiving treatment were taking only one medication, which probably explains why the control-to-treatment ratio was lower than expected. Of note, control of blood pressure increased from 36% to

59% among resurveyed participants who were treated. Overall, uncontrolled blood pressure accounted for about 20% of premature excess cardiovascular deaths. However, about half of blood-pressure-related outcomes are associated with blood pressure that is increased but remains below the threshold for hypertension.¹ Hence, the overall burden of blood-pressure-related premature deaths in Cuba is probably closer to 40%.

Cuba has a well-educated population, a very strong primary-care system with high capacity, universal coverage and access, affordable medications, and robust clinical registries. These features allow researchers to do high-quality clinical and epidemiological studies that would be difficult to replicate in other LMICs.⁵ The cohort in the study of Armas Rojas and colleagues, although not randomly selected from the overall population, shared similar characteristics with Cubans overall and, therefore, is likely to reflect the national situation. By contrast, the unique socioeconomic environment of Cuba, however, also limits the ability to generalise this cohort study to most LMICs.

In many ways, the Cuban cohort findings are not surprising. As noted by Armas Rojas and colleagues, hypertension control has been a priority in Cuba. A survey in the city of Cienfuegos indicated a high rate of hypertension control in 2001–02.⁶ Hypertension control rates in Cuba have probably exceeded those reported by Armas Rojas and colleagues because their latest data were about 10–12 years old and control was increasing at that time. Cuba has collaborated with the Pan American Health Organization and other organisations, including Resolve to Save Lives, to implement system changes to enhance blood-pressure control.⁷ These changes have included widespread implementation of community engagement with World Hypertension Day, task sharing to engage multiple health-care professionals in screening and management of hypertension, development of a simple diagnostic and therapeutic algorithm, and a registry with performance reporting. The interventions have already been successfully introduced in two pilot sites, and upscale of the initiative to the national level has started. To further improve hypertension control, Cuba needs to update its formulary of antihypertensive drugs to include those that are long acting and available in

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fixed dose combinations. The proportion of people with hypertension being treated with multiple medications should also be increased.

Challenges for improving health-care delivery in LMICs, including for blood pressure control, are substantive and include various factors, such as economic changes and natural events. In Cuba, prevalence and incidence of cardiovascular disease and diabetes fell due to long-term economic hardship in the 1990s, but surpassed earlier rates when the economy began to grow again.⁸ Cuba's improvements in hypertension control, therefore, should inspire other countries, many of which have higher socioeconomic status. We believe Cuba is poised to be an early example of a major success in controlling hypertension. Potentially, the next reporting cycle of Armas Rojas and colleagues cohort study will show further improved control and reduced blood-pressure-related premature mortality.

While we applaud Cuba's success in hypertension control, we note with concern the high prevalence of tobacco use and the lack of a substantive national programme to decrease salt consumption. Tobacco use is the leading risk of death in Cuba and reducing dietary salt will effectively lower the prevalence of hypertension, with both strategies yielding very large returns on investment.⁹

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