

## Commentary

# Challenges for Hypertension Control in India

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Hypertension leads to almost 10-12% of all deaths in our country, more than 17,00,000 deaths per year.<sup>1</sup> Successive Global Burden of Diseases Study reports have identified raised blood pressure (BP) as the most important cause of deaths and disease burden globally, including India.<sup>2</sup> In our country it leads to significantly greater deaths than air pollution, unsafe water, and maternal and childhood causes of deaths.<sup>1</sup> Clinical studies have reported that better control of hypertension can prevent a large proportion of this mortality and a 10 mmHg decline in mean systolic BP can reduce cardiovascular events and deaths by 20-30%.<sup>3</sup> Given the fact that most of the interventions for BP control (increased physical activity, salt and alcohol control, healthy diet, and medical therapies) reduce the systolic BF by 20-30 mmHg, we can extrapolate that almost 30-40% or 5,00,000 deaths can be prevented annually. This is more than any other intervention in the chronic disease management arena.

### Challenges

There are multiple challenges to the target of hypertension control and many of these are unique to India as shown in table 1.

**Table 1: Challenges for efficient hypertension control in India**

Epidemiological evidence	
1	The increasing burden of hypertension in India: More in the young, rural and deprived populations
2	Geographic and socioeconomic variation in hypertension prevalence
3	Low level of hypertension awareness, treatment, and control
4	High rates of hypertension-associated cardiovascular events and deaths

Global Burden of Diseases Study<sup>2</sup> and UK-based Non Communicable Disease Risk Factors Consortium<sup>4</sup> have reported trends in blood pressure and hypertension

prevalence in more than 190 countries from all regions of the world from the year 1990 to date. Accordingly, mean systolic BP and hypertension are increasing in South Asian countries (also in South East Asian and African countries). This contrasts with findings from most developed countries where it has declined over the same period. An important difference from developed countries in India is the fact that hypertension is increasing more rapidly in the young and in rural, tribal, and urban slum (deprived) populations.<sup>5,6</sup>

Secondly, large studies within India have reported significant geographical variation in hypertension prevalence with high levels reported from most Southern, Eastern, and North-Eastern states and districts.<sup>5</sup> An important finding of National Family Health Surveys (NFHS-4, NFHS-5) is a high prevalence of hypertension in the young which is more in the North Eastern and Sub-Himalayan regions of the country.<sup>6</sup> High prevalence has also been reported among tribal populations and in urban slum-dwelling individuals.<sup>7</sup> This shows an inequitable distribution of this condition that results from multiple factors that are operative across the life-course (maternal health, low birth neonates, lack of healthy nutrition across the lifespan, social stressors, and other determinants of hypertension). In contrast to the common perception that hypertension is more among the upper and middle-class populations, recent studies from India have reported that hypertension is presently equally prevalent among the developed districts of the country (NFHS-5).<sup>6</sup> This is an important challenge and requires a focus on strategies to ameliorate hypertension related inequities in some of the least developed regions of the country.

Thirdly, multiple regional and national studies from India (including the NFHS) have reported low rates of hypertension awareness, treatment, and control.<sup>8</sup> Hypertension awareness rates are more than 85-90% in most developed countries while in India they are only 35-50% in urban and rural regions of the country. Status of treatment levels among individuals with hypertension are also lower

than in developed countries (20-30% v/s 60-80%).<sup>9</sup> The status of BP control (defined as <140/90 mmHg on treatment) rates is less than 10% in India,<sup>8</sup> in contrast to a control rate of >60-80% in many developed countries.<sup>9</sup> In Jaipur Heart Watch, the only observational study of hypertension awareness, treatment, and control in India, we reported that over a 25-year period (from the year 1991-2015) the awareness rates have increased from 30% to 55-60% but control rates have lagged behind and are currently about 20%.<sup>10</sup> We also reported that at the current trends, we are not likely to achieve the BP control target of more than 60% suggested by the United Nations Sustainable

Development Goals initiative.

The final challenge in hypertension management in India is preventing cardiovascular deaths. The Prospective Urban Rural Epidemiology study, the only prospective study of risk factor outcome associations in our country, has reported that hypertension associated cardiovascular events and deaths are 2-3 times more in our country compared to high and upper-middle-income countries.<sup>11</sup>

**Interventions**

Some of these challenges have been highlighted earlier.<sup>1,5</sup> Policy responses focussing on population-level public

**Table 2: Actions for achieving hypertension control in India**

Priority action	Themes	Policy intervention
Primordial prevention: Health promotion and risk reduction	Maternal and neonatal health promotion	<ul style="list-style-type: none"> <li>• Maternal and childhood nutrition programs</li> <li>• Universal breastfeeding</li> </ul>
	High-quality education	<ul style="list-style-type: none"> <li>• High-quality primary, secondary, and tertiary level education</li> <li>• Promotion of health literacy</li> <li>• School and college health promotion activities, sports, yoga, etc.</li> </ul>
	Health-friendly urban and rural design	<ul style="list-style-type: none"> <li>• Better and environmentally sustainable urban design</li> <li>• Urban and rural designing to promote physical activity, creation of walking and cycle lanes, alternative energy sources</li> <li>• Pollution control</li> </ul>
	Provision of safe and healthy foods	<ul style="list-style-type: none"> <li>• Provision of high-quality pollution free foods</li> <li>• Policies to curb the intake of sugars, salt, and trans fats</li> <li>• Focus on the adverse impacts of comfort foods, trans fats, tobacco, and alcohol</li> </ul>
	Right to health	<ul style="list-style-type: none"> <li>• Universal health coverage and free primary care</li> <li>• Creation of centres-for-excellence for hypertension-related health outcomes</li> <li>• Patient empowerment</li> </ul>
Hypertension surveillance, monitoring, and evaluation	Empowerment of all levels of healthcare professionals	<ul style="list-style-type: none"> <li>• Community health worker engagement in hypertension surveillance and monitoring</li> <li>• Technology-based data generation and transfer and AI-based solutions</li> <li>• Promotion of adherence using technology and cost-effective and context-specific solutions</li> <li>• Physician literacy and continuous medical education programs</li> <li>• Patient empowerment</li> </ul>
Public policy, advocacy, and communications	Focus areas for hypertension control	<ul style="list-style-type: none"> <li>• Recognition that non-communicable diseases are major social, economic and health issues</li> <li>• Deployment of context-, culture-, and socioeconomic status-specific policies for BP treatment and control</li> </ul>

health interventions and individual-based clinical strategies are available.<sup>12,13</sup> Government of India has rolled out rural, urban and national health missions focussing on non-communicable diseases. Focus on hypertension prevention, management, and control is a key component of the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCS) and more recently in the National Programme for Prevention and Control of Noncommunicable Diseases (NP-NCD). The G-20 group of India has recommended a life-course approach for hypertension prevention and control focusing on maternal health, pregnancy, neonatal period, and child and adult education. A number of actions for achieving hypertension control in India have been suggested to the G-20 group (Table 2). These include a focus on primordial and primary prevention of hypertension using a life-course approach.<sup>12</sup> Widespread screening for hypertension and technological interventions for its control have also been suggested by the International Society of Hypertension.<sup>12,14</sup>

Indian Society of Hypertension has been running a public awareness campaign for hypertension along with the international May Measurement Month program. Our society has been running continuing medical education programs for physicians and primary care doctors for better management of hypertension. Non-physician health professionals and workers are the most important component of our healthcare system. A task-shifting strategy (from physician-centric to health-worker-led healthcare system) by training of millions of our primary health workers including community health workers and ASHA's for detection of hypertension, preventive education to implement proven lifestyle interventions including promotion of active lifestyle and regular physical activity, control of indoor air and ambient pollution, tobacco cessation, alcohol avoidance, salt control and healthy diet, is crucial. Non-physician health workers have been successfully deployed to promote adherence to BP medications and patient empowerment. Hypertension is an important contributor to health-related social inequities. Joint efforts by government and non-government agencies, policy-makers, bureaucrats, medical societies, media and people are required to tackle this deadly scourge the most important cause of premature death and disability in our country.

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