

# Global Impact of 2017 American Heart Association/American College of Cardiology Hypertension Guidelines

## A Perspective From India

The most recent guidelines for the diagnosis and management of hypertension<sup>1</sup> have radically redefined what constitutes high blood pressure (BP) and normal BP. This dramatic feature of the new guidelines will likely influence the management of hypertension globally but especially in countries such as India already facing an enormous public health challenge (with the previous definition of hypertension  $\geq 140/90$  mm Hg). The new classification designates a BP level of  $\geq 130/80$  mm Hg as hypertension (Table). Although the new definition of hypertension is based on considerable evidence and abundant data, the global ramifications are nearly unimaginable at present. The new classification is scientifically sound on the basis of the established link between the level of BP (starting at a systolic BP level of 115 mm Hg) and the risk of cardiovascular disease.<sup>2</sup> How do we apply and translate the observational/epidemiological data for regions of the world (such as India and China) already facing an escalating prevalence of hypertension based on the previous threshold of  $\geq 140/90$  mm Hg? This galling prospect is not addressed by the new guidelines. The challenge therefore is to acclimatize to the new definition of hypertension not by confrontation but by reconciling with regional realities to eliminate the consequences of high BP on the community.

India, with a population of 1.32 billion, is experiencing increasing cardiovascular disease, driven mainly by uncontrolled hypertension. The current prevalence of hypertension (based on the  $\geq 140/90$ -mm Hg threshold) in India is estimated to be 28.9% in both men and women.<sup>3</sup> BP is controlled in only  $\approx 25\%$  of treated patients. These figures will instantly mount if the new definition of hypertension is embraced. Unlike the Western world, a mixture of social, cultural, and economic factors in India will make it extremely difficult to manage hypertension in the community with newer lower thresholds of defining high BP. India is not yet ready to use out-of-office BP measurements on a wide scale. Both home and ambulatory BP measurements are not adopted to any measurable degree in India, and the cost of medical care is borne directly by the patient, not by a third party. These differential features of healthcare delivery in India will be a hurdle for quick adoption of the new hypertension guidelines.

Ironically, the goal BP levels recommended in the Indian hypertension guidelines of 2013 are not yet followed fully in clinical practice.<sup>3,4</sup> How then can practitioners welcome the new 2017 American Heart Association/American College of Cardiology guidelines? In a random sample of 6106 adults in urban India, 2815 individuals had prehypertension,<sup>5</sup> reflecting an additional 14% prevalence of (new) stage 1 hypertension. If this figure were to be applied to the entire population of India, the abrupt surge in the prevalence of hypertension would be bewildering. In nearly all the epidemiological and observational studies, prehypertension is defined as a systolic BP between 120 and 139 mm Hg. However, in the new US guidelines, the conventional category of prehypertension is subdivided into elevated BP and stage 1 hypertension. Thus, it is not possible to estimate the percentage of individuals

Gurpreet S. Wander, MD,  
DM  
C. Venkata S. Ram, MD

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**Correspondence to:** C. Venkata S. Ram, MD, Dallas Nephrology Associates, Hypertension, 1420 Viceroy Drive, Dallas, TX 75235. E-mail [draram\\_v@apollohospitals.com](mailto:draram_v@apollohospitals.com)

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**Table. BP Categories**

Systolic and Diastolic BPs, mm Hg	JNC 7	2017 AHA/ACC	Indian Hypertension Guidelines
<120 and <80	Normal BP	Normal BP	Optimal
120–129 and <80	Prehypertension	Elevated BP	Normal
130–139 or 80–89	Prehypertension	Stage 1 hypertension	High normal
140–159 or 90–99	Stage 1 hypertension	Stage 2 hypertension	Stage 1 hypertension
≥160 or ≥100	Stage 2 hypertension	Stage 2 hypertension	Stage 2 hypertension

AHA/ACC indicates American Heart Association/American College of Cardiology; BP, blood pressure; and JNC 7, Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.

with prehypertension who will now be reclassified as having elevated BP or stage 1 hypertension.

The high incidence of hypertension in India (a result of lower thresholds), however, should not be dismissed as absurd or impractical. Rather, it is a clarion call to reduce the dreadful consequences of chronic disease burden driven by elevated BP levels. Time has come (but not run out) to implement effective public health policy on a war footing for accurate measurement of BP and effective treatment of hypertension of any degree. Even with the current threshold to define hypertension (BP >140/90 mmHg), BP control rates in India are abominable. To achieve improved control of hypertension, the country should adopt and enforce hypertension screening and diagnosis programs on a massive scale and increase awareness and access to medical care. Protocol-driven standardization of treatment regimens must be implemented and physician inertia should be tackled concurrently to achieve therapeutic objectives proposed in the new guidelines. Countries like India with its vast population of patients with elevated BP and its complications will be the ultimate beneficiaries of a militant approach to combat the dangers of hypertension (by any definition).

India has been trying to overcome the menace of communicable diseases by thorough surveillance, proper planning, public health policy, and swift execution of therapeutic and preventive measures through multiple public-private partnerships. A similar approach to combat the menace of noncommunicable diseases is attainable by applying multilevel conventional and innovative methods with collective zeal and time-bound objectives.

## DISCLOSURES

None.

## AFFILIATIONS

Cardiology Department, Hero DMC Heart Institute, Dayanand Medical College, Ludhiana, India (G.S.W.). Apollo Institute for Blood Pressure Management, World Hypertension League/South Asia Office, Apollo Hospitals, and Apollo Medical College, Hyderabad, India (C.V.S.R.). Texas Blood Pressure Institute, Dallas Nephrology Associates, University of Texas Southwestern Medical Center (C.V.S.R.). India Campus Macquarie University, Medical School, Sydney, Australia (C.V.S.R.).

## FOOTNOTES

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## REFERENCES

- Whelton PK, Carey RM, Aronow WS, Casey DE Jr, Collins KJ, Dennison Himmelfarb C, DePalma SM, Gidding S, Jamerson KA, Jones DW, MacLaughlin EJ, Muntner P, Ovbigele B, Smith SC Jr, Spencer CC, Stafford RS, Taler SJ, Thomas RJ, Williams KA Sr, Williamson JD, Wright JT Jr. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APHA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: executive summary: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines [published online ahead of print November 13, 2017]. *Hypertension*. doi: 10.1161/HYP.000000000000065. <https://www.ncbi.nlm.nih.gov/pubmed/29133356>.
- Lewington S, Clarke R, Qizilbash N, Peto R, Collins R; Prospective Studies Collaboration. Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet*. 2002;360:1903–1913.
- Anchala R, Kannuri NK, Pant H, Khan H, Franco OH, Di Angelantonio E, Prabhakaran D. Hypertension in India: a systematic review and meta-analysis of prevalence, awareness, and control of hypertension. *J Hypertens*. 2014;32:1170–1177. doi: 10.1097/HJH.0000000000000146.
- Association of Physicians of India. Indian guidelines on hypertension (IGH)-III-2013. *J Assoc Physicians India*. 2013;61:1–33.
- Gupta R, Deedwania PC, Achari V, Bhansali A, Gupta BK, Gupta A, Mahanta TG, Asirvatham AJ, Gupta S, Maheshwari A, Saboo B, Jali MV, Singh J, Guptha S, Sharma KK. Normotension, prehypertension, and hypertension in urban middle-class subjects in India: prevalence, awareness, treatment, and control. *Am J Hypertens*. 2013;26:83–94. doi: 10.1093/ajh/hps013.

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Gurpreet S. Wander and C. Venkata S. Ram

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