

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

## A Perspective From China

A shocking change in the 2017 American College of Cardiology/American Heart Association hypertension guidelines is the shift in the definition of hypertension from 140/90 mm Hg to 130/80 mm Hg for systolic/diastolic blood pressure.<sup>1</sup> It was indeed a major change since the definition of hypertension was changed from 160/90 mm Hg to 140/90 mm Hg in the fifth report of the Joint National Committee published in 1993.<sup>2</sup> History is often repeated and similarities sometimes emerge. Very similar to the change in 1993,<sup>2</sup> the current change in the 2017 guidelines was mainly based on epidemiological evidence but not randomized controlled clinical trials.<sup>1</sup> There is strong and consistent evidence that lower blood pressure is associated with lower cardiovascular risk, even if not to the point of the lower the better. There is little or insufficient evidence on the outcome benefit of antihypertensive therapy from adequately powered, placebo-controlled clinical trials even in the range of systolic blood pressure from 140 to 159 mm Hg, needless to say for 130 to 139 mm Hg. However, the current change,<sup>1</sup> like the previous one,<sup>2</sup> is probably not only conceptually encouraging, but also eventually beneficial for cardiovascular prevention. The concept of treating early is actually in line with the life course approach proposed in the call to action of the Lancet Hypertension Commission published in 2016.<sup>3</sup>

To judge the usefulness and appropriateness of the new threshold, we have to look at its influence in both short- and long-term perspectives. The latter, of course, requires time and can only be judged historically according to the incidence of the cardiovascular complications of hypertension. However, a short-term judgment can be accomplished shortly according to whether the change would improve blood pressure control, without substantially increasing the cost, workload, and side effects of treatment. If we apply the 130/80 mm Hg threshold to the most recent China national survey data, the prevalence of hypertension would increase from ≈25% to 50%. However, because, in the 130 to 139/80 to 89 mm Hg range of systolic/diastolic blood pressure, only those with clinical cardiovascular disease, ie, coronary heart disease, congestive heart failure, and stroke, or with a 10-year atherosclerotic cardiovascular disease risk >10%, would require antihypertensive treatment,<sup>1</sup> the increment in the number of patients requiring treatment would be marginal. Indeed, in our studies in a general population<sup>4</sup> and an elderly population,<sup>5</sup> the increase was 2.0% and 5.5%, respectively (Figure). If the <50% of the overall awareness rate of hypertension in China were taken into account, the increase in the number of treated hypertensive patients would be almost negligible.

In line with the change in the diagnostic threshold of hypertension, the therapeutic target was also changed from 140/90 mm Hg in general and 130/80 mm Hg in patients at high risk to 130/80 mm Hg in general.<sup>1</sup> This change may have an impact on the intensity of antihypertensive treatment and ultimately

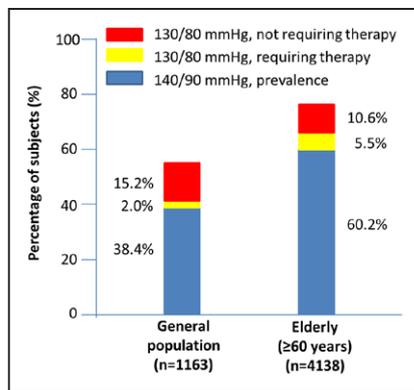
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**Figure.** Prevalence of hypertension and the proportion of patients who would require antihypertensive treatment according to the 140/90 mmHg and 130/80 mmHg criteria, respectively, in a general population<sup>4</sup> and an elderly population.<sup>5</sup>

The total number of study subjects is given at the bottom.

blood pressure control and prevention of both acute cardiovascular events and chronic cardiovascular illnesses. Targeting 130/80 mmHg will definitely increase the control rate as assessed according to the 140/90 mmHg criteria. Increasing treatment intensity will theoretically increase the cost for medication and care from health professionals. However, treating early and intensively may retard the progression of hypertension, prevent resistant hypertension, and, in the long run, reduce cost. Thus, the totality is not only cost saving, but probably also lifesaving. In addition, with the increasing use of efficacious and safe generic medications, increasing sales volume does not necessarily mean an increase of cost.

The new guideline is a comprehensive document.<sup>1</sup> There are several gems hidden by the striking changes in the diagnostic threshold and therapeutic target of hypertension. First, ambulatory blood pressure was recommended for the first time in an American guideline document for the management of hypertension in adults. This is indeed an important step forward. Ambulatory blood pressure monitoring is useful in the identification of white coat and masked hypertension, and the only reliable method for the diagnosis of nocturnal hypertension, which confers cardiovascular risk independent of clinic and daytime ambulatory blood pressure. Second, this new guideline re-recommended cardiovascular risk stratification for the decision to use antihypertensive therapy that had been proposed in the sixth report of the Joint National Committee. This new risk assessment approach was not exactly the same as the one used in the fifth report of the Joint National Committee, and because of its quantitative nature may be clinically useful on the basis of the individual patient. Third, the new guidelines clearly recommended screening for secondary hypertension and provided information on who (or when), which, and how secondary

hypertension should be screened. Systematic screening might lead to a much higher detection rate of all forms of secondary hypertension and to a paradigm shift from blood pressure control alone with or without risk management to the treatment of disease.

After publication of the new guidelines,<sup>1</sup> a question was repeatedly asked by colleagues in China and those from other countries, including the United States, whether the Chinese hypertension guidelines will follow the definition of hypertension. The short answer is no. The full answer is definitely not for the moment. The Chinese hypertension guidelines have to seriously consider the current situation in the management of hypertension in China. A major concern is the extremely low awareness of hypertension. However, with the establishment of nationwide community health services for noncommunicable chronic disease management and the increasing use of home blood pressure monitoring, the situation is improving rapidly.<sup>5</sup> The awareness and control rates of hypertension have increased substantially in some of the better-developed areas in China. In an elderly population study in Shanghai, the awareness and control rates of hypertension in 2006 to 2007 reached 71.2% and 25.7%, respectively.<sup>5</sup> We are fully confident that we will soon catch up. Then, probably in 5 to 10 years, we may have the imperative to change the definition of hypertension in the Chinese hypertension guidelines.

## DISCLOSURES

None.

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## FOOTNOTES

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