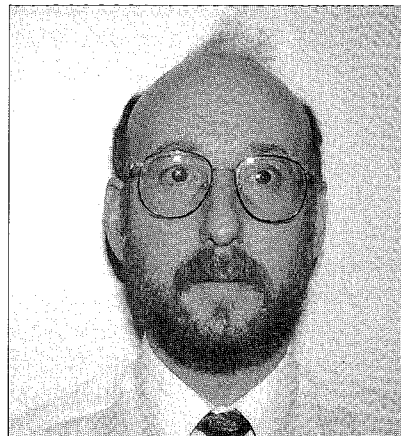


## New Developments in the Treatment of Hypertension: What the HOT Study Means to JNC-VI



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**T**his Special Report supplement to *The American Journal of Managed Care* contains proceedings from a roundtable discussion titled "New Developments in the Treatment of Hypertension: What the HOT Study Means to JNC-VI." The 11 panelists who convened for this meeting were experts drawn from diverse areas including clinical management of hypertension, healthcare economics, managed care practices, and guideline implementation. The recently released Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and

Treatment of High Blood Pressure (JNC-VI)<sup>1</sup> was used as the framework to discuss the medical and economic impact of new findings from recently completed trials, particularly the Hypertension Optimal Treatment (HOT) study, and to address the challenges of hypertension management in a managed care environment.

The demographic profile of the US population is shifting as the numbers and proportion of the elderly in the population are increasing. The healthcare implications of this shift are enormous in terms of both management and cost because the corresponding

increase in chronic illnesses consumes a greater share of healthcare resources.

Hypertension is a chronic illness that is present in a high percentage of the elderly and is a major risk factor contributing to myocardial infarction, stroke, congestive heart failure, peripheral vascular disease, and renal failure.<sup>2</sup> The benefits of treating hypertension in older individuals have been clearly established in several large clinical trials.<sup>3,5</sup> However, disturbing recent analyses show that public awareness of and adequate treatment for hypertension in the United States are declining, so that only 27.4% of the hypertension population has blood pressure controlled to adequate levels.<sup>6</sup>

In response to these discouraging data, the guidelines in JNC-VI, released in November 1997, advocate individualized therapy based on overall cardiovascular risk and target organ disease, stress treatment of patients with isolated systolic hypertension, emphasize lifestyle modifications, and recognize compelling indications for certain types of drugs. Recognizing compliance is a major determinant of the success of antihypertensive therapy, JNC-VI recommends use of long-acting, once-daily drugs and also supports treatment with low-dose drug combinations that may have a more favorable side-effect profile.

The results of the long-awaited HOT study<sup>7</sup> were published 6 months after the release of JNC-VI and have far-reaching implications for the management of hypertension. This international trial, which enrolled close to 19,000 patients, showed that huge reductions in blood pressure of 20 to 24 mm Hg were possible in the vast majority of patients and that the optimal diastolic blood pressure in terms of lowest cardiovascular risk was 83 mm Hg. Current JNC-VI guidelines recommend a target diastolic blood pressure of less than 90 mm Hg. The study also reassured physicians that although aggressive blood pressure lowering to below optimal levels provided no bene-

fits, it did not increase risk, even at levels as low as 70 mm Hg. The study also documented a lowered cardiovascular risk when daily low-dose aspirin was added to the antihypertension regimen.

Although the benefits of intensive blood pressure lowering are readily apparent from a clinical and individual patient viewpoint, the question remains whether such treatment is economically justifiable. A cost-effectiveness analysis of the HOT study data concludes that blood pressure lowering to 90 mm Hg and the use of aspirin are both cost-effective measures in terms of each myocardial infarction averted.

Although several classes of antihypertensive drugs are currently available, a primary beneficial effect has been documented thus far only for the diuretics. Recent debate has centered around the efficacy and safety of the calcium channel blockers (CCBs) following publication of reports of an increased risk of cardiovascular events with these agents, based mainly on inappropriate use of short-acting formulations.<sup>8</sup> However the results of HOT and other large, recently completed trials attest to the safety and efficacy of the long-acting dihydropyridine CCBs<sup>7,9</sup> and JNC-VI endorses their use as first-line therapy for treatment of elderly patients with isolated systolic hypertension. The efficacy of  $\beta$ -blockers for treatment of hypertension in the elderly has also been questioned by a recent analysis of several clinical trials in which no cardiovascular benefit was demonstrable in older patients receiving  $\beta$ -blockers.<sup>10</sup>

Physician adherence to JNC-VI is critical for translating guideline recommendations into improved patient outcomes. As documented in numerous reports, physician nonadherence to practice guidelines poses a special challenge and may be one reason why hypertension control in the population is so poor.<sup>11</sup> The Awareness to Adherence model proposes that adherence to guidelines is the culmination of a series of sequential stages—awareness, agreement, self-efficacy, and outcome

expectancy—through which physicians must proceed. Physician groups can use this model to identify the barriers to guideline implementations and then use appropriate interventions to address the problem.

The aging of the population and need for adequate blood pressure control in the population pose a special challenge for and make added demands on managed care organizations. These organizations will have to develop infrastructures that allow them to deal with chronic lifelong diseases. Many of the principles of managed care can be brought to bear on the management of hypertension, with the focus on prevention, lifestyle changes, evidence-based decision making, outpatient management, and patient and provider education. Although hypertension is an appropriate target for disease management programs, barriers to implementation have been recognized, and the efficacy of hypertension programs has not as yet been established. Nevertheless, the challenges facing the management of diseases such as hypertension afford physicians the opportunity to ensure that quality and delivery of care drive healthcare choices.

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ACRONYM LIST

The following acronyms are found in the pages of this Special Report.

<b>ABPM</b>	Ambulatory blood pressure monitoring
<b>ACE</b>	Angiotensin-converting enzyme
<b>CCB</b>	Calcium channel blocker
<b>FDA</b>	Food and Drug Administration
<b>HBPM</b>	Home blood pressure monitoring
<b>HOT</b>	Hypertension Optimal Treatment
<b>ISH</b>	Isolated systolic hypertension
<b>JNC-VI</b>	Sixth Report of the Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure
<b>MI</b>	Myocardial infarction
<b>NHANES</b>	National Health and Nutrition Examination Survey
<b>SHEP</b>	Systolic Hypertension in the Elderly Program
<b>Syst-Eur</b>	Systolic Hypertension in Europe
<b>VA</b>	Veterans Administration