

## Closing the Quality Gap: A Critical Analysis of Hypertension Care Strategies

Agency for Healthcare Research and Quality



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The mission of AHRQ is to improve the quality, safety, efficiency, and effectiveness of health care by:

- Using evidence to improve health care.
- Improving health care outcomes through research.
- Transforming research into practice.



U.S. Department of Health  
and Human Services  
Public Health Service

### Background

Nearly one in every five people in the United States—about 58 million Americans—suffers from high blood pressure (hypertension), making it the Nation’s most common medical condition. In 2001, hypertension was the primary diagnosis for some 35 million office visits. Almost one-third of those with high blood pressure are not aware they have it, and the risk of developing the condition increases with age.

Defined as an elevation in systolic blood pressure greater than 140mm Hg, and/or an elevation in diastolic blood pressure greater than 90mm Hg, hypertension has been named the third leading cause of death worldwide by the World Health Organization (WHO). It is relatively more common in blacks than in whites or Hispanics, and occurs in women slightly more often than in men.

The benefits of successful hypertension treatment have been known for many years. Hypertension is a major risk factor for cardiovascular disease, including coronary heart disease (CHD), heart failure, and stroke. Patients with high blood pressure often

have no clinical symptoms until organ damage begins, giving the disease its reputation as a “silent killer.”

The Institute of Medicine’s 2003 report, *Priority Areas for National Action: Transforming Health Care Quality*, identified hypertension as one of 20 priority conditions. These were defined as conditions affecting a large portion of the Medicare/Medicaid population and for which best practice treatment methods have been established using a strong body of clinical evidence.

In addition to the millions of undiagnosed hypertension patients, recent studies indicate only about 58 percent of patients diagnosed with high blood pressure nationwide are receiving appropriate treatment. High-quality care for hypertension includes:

- Awareness of preventive care for high blood pressure
- Regular blood-pressure screening
- Involvement of other clinical specialties
- Effective communication between health care providers and their patients
- Active self-management by patients.



The difference between the present success rates for hypertension treatment and those thought to be achievable using the most advanced standard of care is known as a *quality gap*. The poorer health outcomes associated with such a gap and the relative ease with which hypertension can be controlled led the Agency for Healthcare Research and Quality (AHRQ) to examine how hypertension research is translated into medical practice.

## Evidence

AHRQ commissioned a study in 2003 of the scientific literature related to improving the quality of hypertension treatment, in an attempt to translate research into practice and improve the overall standard of patient care. Findings from the hypertension study are being published as part of a new AHRQ Technical Review series, *Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies as Vol 3: Hypertension Care*.

Researchers at the Stanford University–University of California at San Francisco Evidence-based Practice Center (EPC)<sup>1</sup> were asked to carefully examine all valid studies of attempts to improve the quality of treatment and patient care for hypertension, focusing on nine *quality improvement (QI) strategies*. The researchers defined a QI strategy as any tool or process aimed at reducing the quality gap for a group of patients typical of those seen in routine practice. For further details about how the study was conducted, see *Vol 1: Background and Methodology*.

Examples of QI strategies include:

- Physician and patient reminder systems;
- Using a telephone, fax, or e-mail to transmit patient data from outpatient specialty clinics to the patient's primary care physician; and
- Continuing education for physicians and patients.

Target measures addressed in the survey of studies focused on disease identification and control (blood pressure screening and follow-up treatment), including:

- how well providers adhere to best-practice treatment guidelines (keeping track of blood pressure in the patient's chart, counseling patients, and prescribing medications for them); and
- how well patients adhere to treatment guidelines (whether they take their medicines as prescribed and come to their follow-up visits).

More than 3,000 journal articles and conference papers were initially considered for the hypertension study. The field was narrowed first to 110 articles, and later to 63 articles, using strict study criteria developed by the EPC researchers. Another 47 articles dealt solely with the effectiveness of patient education strategies; these may be reviewed in a subsequent volume of the *Closing the Quality Gap* series.

The 63 articles that represent the study sample feature a total of 82 comparisons of quality improvement strategies, including 42 unique

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<sup>1</sup> AHRQ oversees 13 EPCs, which analyze and distill the essence of the scientific literature related to prominent medical conditions and issues that affect large numbers of Medicare or Medicaid users and that consume a significant share of health care resources. The contractor organizations operating the EPCs include universities, nonprofit research organizations, and health care organizations (<http://www.ahrq.gov/clinic/epc/>).

combinations. The findings of the literature review suggest that quality improvement strategies in general appear to provide improved hypertension detection and control. Each of the strategies may be helpful under some circumstances, and in varying combinations. Most of the included studies looked at more than one QI strategy, so it was not possible to confidently identify particular strategies that have the greatest effect on patient outcomes.

Most QI strategies led to some improvement in screening for high blood pressure, though no single intervention was shown to be superior to any other strategy. Studies that examined organizational change as a QI initiative showed the largest change in outcomes—but researchers caution this trend might be influenced in part by the size of the samples in these studies.

## Findings

Surprisingly, few of the QI strategies had any discernible impact on how well providers adhered to optimal treatment guidelines. This may be due in part to mixed results in the included studies that addressed this outcome.

Differences in practice settings and barriers to overcome in providing the best possible treatment also may be responsible.

Patient education (in combination with other QI strategies), organizational changes within the care provider's practice, the direct transmission of patient data from one clinical provider to another, and patient self-management all may provide improved patient adherence to treatment guidelines. However, relatively few studies assessed this specific outcome.

Even small improvements in blood pressure control can have major public health impact. A 1990 systematic review of 14 randomized treatment trials for hypertensive patients showed that lowering diastolic blood pressure (DBP) by 5 to 6 points reduced stroke rates by 42%. Another recent study showed that lowering DBP by only 2 points could result in a 6% reduction in the risk of coronary heart disease, along with a 15% reduction in the risk of stroke and one type of heart attack.

## Future Research

Despite clear evidence showing that hypertension treatment reduces the incidence of stroke, heart attacks, and premature death, high blood pressure care in the United States often does not conform to evidence-based guidelines. The report calls for greater study into the adoption of best practices and the partnership between researchers, practitioners, and patients. Furthermore, Americans need to become more aware of the dangers of high blood pressure and its potential impact on their lives.

AHRQ researchers and others throughout the health care community are continuing their investigations into strategies for improving patient outcomes. Those involved with this Technical Review series hope it will generate new ideas for turning evidence-based research into new clinical practices, while stimulating new studies and more advanced explorations into high-quality and affordable health care.

## For More Information

For additional information on AHRQ's projects involving evidence-based treatment practices and quality



improvements in the delivery of health care, visit the AHRQ Website ([www.ahrq.gov](http://www.ahrq.gov)) or contact:

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AHRQ Pub No. 04-P018  
April 2004