

## Determining Best Strategies for Improving Hypertension Care

Walsh JME, McDonald KM, Shojania KG, et al. Quality improvement strategies for hypertension management: a systematic review. *Med Care* 2006;44:646–57.

### Study Overview

**Objective.** To assess the effectiveness of different hypertension quality improvement (QI) strategies for lowering blood pressure.

**Design.** Systematic review.

**Methods.** Patient- and cluster-randomized trials, quasi-randomized trials, controlled before–after studies, and interrupted time-series studies that reported QI strategies for hypertension and assessed blood pressure outcomes were included. A QI strategy was defined as an intervention aimed at reducing the quality gap for a group of patients representative of those encountered in routine practice. Studies were collected using MEDLINE and the Cochrane Effective Practice and Organisation of Care registry of QI strategies. Studies published before 1980 or after July 2003 were excluded. QI strategies were classified as provider education, provider reminders, provider audit and feedback, facilitated relay of clinical data to providers, patient education, patient reminders, promotion of self-management, team change, and financial incentives/regulation or reimbursement changes. The majority of articles described interventions that used more than 1 strategy. Two independent reviewers abstracted data.

**Main outcome measures.** Net change in systolic blood pressure (SBP) or diastolic blood pressure (DBP) and/or the percentage of patients achieving a goal blood pressure compared with the control group. Not all studies examined both SBP and DBP.

**Main results.** Of 110 fully abstracted articles, 44 (reporting 57 comparisons) were included for analysis. The majority of studies showed modest improvements in SBP and DBP. The mean effect across all interventions were net reductions in SBP of 4.2 mm Hg (95% confidence interval, 1.8–6.6) and DBP of 1.9 mm Hg (95% confidence interval, 0.7–3.1). Team change was the only strategy that showed significant reductions in both SBP and DBP. Interventions that included patient education and self-management were associated with a significant reduction in DBP. Overall, QI strategies increased the percentage of patients at target for SBP and DBP by 16.2% (interquartile range, 10.3–32.2) and 6.0% (interquartile range, 1.5–17.5),

respectively. For studies that included team change, the mean reduction in SBP and DBP was 9.7 mm Hg and 4.2 mm Hg compared with SBP and DBP of 2.0 mm Hg and 0.6 mm Hg for studies without team change. In all cases of team change, patient care responsibility was assigned to someone other than the patient's doctor (eg, pharmacist, nurse, physician assistant, or worksite physician). Studies with smaller sample sizes generally showed larger reductions in blood pressure.

**Conclusion.** QI strategies for hypertension were associated with reduced blood pressure and an increased percentage of patients meeting hypertension goals, particularly when strategies involved care from someone other than the patient's physician.

### Commentary

The high prevalence of hypertension in the adult population and the frequent problem of inadequately controlled blood pressure (even for adults receiving medical care), make a strong case for implementing effective strategies for improving the care of patients with hypertension. Although several studies have addressed this issue, it is still not clear which strategies are best for optimizing hypertension management. Walsh et al provided a good synthesis of QI techniques applied to hypertension up to July 2003. Perhaps their strongest conclusion was that team change, whereby a clinician other than the patient's regular physician helps to manage a patient's hypertension, emerged as a beneficial QI strategy compared with other techniques, such as provider education, provider audit and feedback, or provider reminders. Other promising techniques were facilitating the relay of clinical data to providers and patient education or self-management training. Patient education was also shown to be effective in a study published too recently to be included in the Walsh et al study [1].

Clinicians who hope to adopt QI strategies for hypertension management in their own practices face challenges, however, both in how to best interpret these data and in how to overcome the structural obstacles to implementing these changes. In the case of data interpretation, the smaller blood pressure effects seen in the larger studies raises the concern that small studies with negative findings were not published (ie, publication bias) and that we could expect only small

blood pressure reductions to be achievable in actual practice. Alternatively, it is possible that larger, multicenter studies may have had more difficulty generating enthusiasm for the interventions across different practices and that a single motivated practice could achieve a substantial reduction in patients' blood pressure.

A major barrier to adopting team change or patient education is that these services typically are not reimbursed by health care payors. Currently in the United States, there are few if any financial incentives for clinicians who want to improve the quality of care provided for hypertension. Until more explicit financial gain can be achieved for providing these services, most practices may find it too daunting to take on the cost of implementing team change or providing additional patient education or self-management training.

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Lastly, if practices are not able to routinely monitor the blood pressures achieved by their patients (because it is recoded only in paper records), they will not be in the position to monitor hypertension QI for success or failure.

### **Applications for Clinical Practice**

QI strategies, especially team change, should be considered for practices caring for adults with hypertension.

*—Review by Stephen D. Persell, MD, MPH*

### **Reference**

1. Roumie CL, Elasy TA, Greevy R, et al. Improving blood pressure control through provider education, provider alerts, and patient education: a cluster randomized trial. *Ann Intern Med* 2006;145:165–75.