

Death Toll From Uncontrolled Blood Pressure in Ethnic Populations: Universal Access and Quality Improvement May Not Be Enough

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Cardiovascular disease (CVD) is the number 1 cause of death globally.¹ An estimated 17.5 million people died from CVD in 2005 (7.6 million from coronary heart disease and 7.6 million from stroke), representing 30% of all global deaths.² Globally, two-thirds of stroke and one-half of ischemic heart disease are attributable to nonoptimal blood pressure. Worldwide, nonoptimal blood pressure contributes to approximately 12.8% of all deaths (7.1 million) and 4.4% of all disability-adjusted life years (64.3 million) in the year 2000. These proportions are highest in more developed countries, such as the United States and the United Kingdom.³ Racial and ethnic disparities in cardiovascular disease prevalence, treatment, and outcomes are well documented in the United States, and racial and ethnic differences in hypertension are no exception.⁴⁻⁷ Cardiovascular disease accounts for 35% of excess overall mortality in US blacks, largely because of hypertension.⁸ In Europe, ethnic differences in hypertension prevalence and morbidity and mortality from cardiovascular disease have also been described.^{9,10}

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Two articles in this issue of the *Annals of Family Medicine* address ethnic disparities in hypertension care and control; each study examines the disparities problem from a different vantage point. The study by Fiscella and Holt¹¹ quantifies the impact of racial differences in hypertension control on cardiovascular and cerebrovascular mortality in the United States using NHANES data, a meta-analysis of observational studies of systolic blood pressure, and a meta-analysis of systolic blood pressure treatment trials. The study by Millett et al uses survey and electronic medical record data from family practices in the United Kingdom to examine the impact of a systems-level intervention (pay for performance) on reducing racial and ethnic disparities in the management of hypertension. Both studies highlight the fact that persons of African descent (Caribbean and African blacks and African Americans) have a higher prevalence of hypertension than persons of European descent (whites) and therefore may be at increased risk of cardiovascular disease. Both studies compare rates of hypertension control for blacks and whites; the Millett et al study also provides comparison data for South Asians.

Fiscella and Holt found that a reduction in mean systolic blood pressure among blacks to that of whites would reduce the annual number of black deaths from heart disease by 5,590 and from stroke by 2,190. This study contributes greatly to the literature on the impact of racial disparities on cardiovascular mortality and highlights the substantial public health impact that reducing disparities in hypertension control in

the United States could have. As the authors acknowledge, however, the best strategy for eliminating racial and ethnic disparities in hypertension control remains elusive. They argue that in the absence of evidence for disparities in hypertension treatment or severity, efforts should focus on addressing patients' adherence barriers.

Millet et al¹² found that whereas no ethnic disparities existed in blood pressure measurement, disparities in medication prescribing and in the achievement of blood pressure control persisted despite a major investment in quality improvement initiatives, including pay for performance. These disparities in control were particularly marked in patients with multiple cardiovascular comorbidities, who arguably may be the sickest patients.

What can we learn from these studies on racial and ethnic disparities and systems-level interventions to reduce disparities? First, it seems clear that racial and ethnic disparities in hypertension control are pervasive and persistent regardless of whether access to health care is provided. In the United Kingdom, which has universal access to health care, thus eliminating major financial barriers to care for ethnic populations, disparities in care and outcomes persist. Furthermore, these disparities persist despite a sustained period of investment by the United Kingdom in improving health care quality. In the United States, the Veterans Affairs (VA) health system is the closest surrogate to a universal access environment. In studies conducted in the VA system, where access barriers are fewer (including access to affordable medications), racial disparities in hypertension control are reduced but still not eliminated.¹³ It appears, therefore, that while improving access to health care is an important and necessary step, efforts to eliminate racial and ethnic disparities must extend beyond simply improving access.

Second, given that overcoming traditional access barriers, such as health insurance and primary care, does not eliminate disparities in health outcomes, we must seek to understand and address factors that initiate and sustain disparities among those who are in care, as well as the more upstream or fundamental causes of disparities. Doing so will include a closer examination of differences within ethnic groups that contribute to blood pressure control. Such an approach may allow us to better understand the variability in health practices within ethnic groups. We submit that greater effort should be directed at understanding positive deviance as it relates to racial and ethnic disparities in cardiovascular outcomes. Positive deviance is the observation that in most settings a few at-risk individuals follow uncommon, beneficial practices and consequently experience better outcomes than their neighbors who share similar risks.¹⁴ Positive deviance approaches can

be applied for use with existing data sets as a tool for understanding and reducing health disparities.¹⁵ This framework shift in our thinking about disparities may prove valuable as we design interventions to improve disease outcomes.

Third, there is some evidence that patient adherence contributes to disparities in control of high blood pressure. The authors of both articles highlight the issue of adherence and acknowledge that their studies did not account for variations in adherence to medications—a factor that undoubtedly affects blood pressure control and is known to differ by race and ethnicity. Understanding how racial and ethnic disparities in adherence contribute to suboptimal hypertension control is critical for developing and evaluating interventions. Patient adherence to health-supporting behaviors (eg, taking their medications as directed, exercising, eating a healthy diet, avoiding smoking and illicit substance use) and clinician adherence (eg, following evidence-based guidelines, intensifying antihypertensive medications as appropriate) are both important for optimal blood pressure control. In addition to the typical barriers to adherence, for ethnic minorities it is important to consider the roles of disparate beliefs about health and illness, acceptability of various treatments, issues of trust in health care clinicians, and previous experiences of unfair or discriminatory treatment in health care.¹⁶

Even so, focusing solely on individual-level characteristics of either patients or clinicians may not be sufficient to truly understand the multiple determinants of a phenomenon as complex as adherence. We need to also examine how aspects of the broader social environment (eg, neighborhood or community characteristics, social networks, and social support) contribute to racial and ethnic disparities in health behaviors and outcomes through the use of multilevel modeling, social network analyses, and studies that use mixed qualitative and quantitative methods. Ultimately, interventions to improve adherence, reduce disparities, and improve blood pressure control should be targeted at multiple levels (eg, individual patient, patient-clinician interaction, health care system, and the social environment).

Finally, fundamental questions remain regarding the effectiveness of quality improvement initiatives for reducing or eliminating racial and ethnic disparities in health care and outcomes. Although in theory generic quality improvement initiatives should improve care and outcomes for all, it is unclear whether those at greatest risk, such as ethnic minorities, will benefit the most. Strategies to reduce disparities have targeted individual patient factors,¹⁷⁻¹⁹ clinician factors,^{20,21} health systems factors,^{19,22-24} or a combination of these.²⁵⁻²⁷ Addition-

ally, performance incentive programs, such as pay for performance and public reporting systems, have been instituted to improve health care quality and to reduce racial and ethnic disparities in care.^{28,29}

Systematic reviews and other studies that examine the impact of quality improvement strategies on various processes of care and health outcomes, including their impact on disparity reduction, have inconclusive results.^{24,28,30} Some studies show that ethnic disparities in processes of care can be reduced or eliminated.^{31,32} Others show that generic quality improvement programs reduce ethnic disparities in some processes of care, but not necessarily health outcomes.^{30,33,34} At least 1 empirical study shows that a major public reporting program actually increases disparities.²⁸ Few studies specifically examine strategies to improve the quality of health care for minorities, and even fewer examine the reduction of racial disparities as an outcome.³⁵ A systematic review of the effect of culturally tailoring interventions on disparities found that most interventions did not actually assess health outcomes, and when they did, the effect was marginal.¹⁹ In summary, although the evidence is growing, the particular characteristics that make quality improvement programs successful at reducing disparities, their impact on health outcomes and their sustainability over time are largely unknown. The definitive answer to the question of whether quality improvement initiatives for reducing or eliminating racial and ethnic disparities in health care and outcomes lies in the design of the programs and the rigor of the evaluation methods.

Together, the articles by Fiscella and Holt and Millet and colleagues in this issue of the *Annals of Family Medicine* are valuable additions to the literature on ethnic disparities in health care. They serve as an urgent call for clinicians, researchers, health care administrators, social activists, and policy makers in the United States and the United Kingdom to work together to gain a better understanding about how critical barriers experienced by ethnic minorities within and outside the health care system interact and to develop intensive and comprehensive strategies to overcome them. As we strive to eliminate disparities in care, we must realize that disparities in outcomes will persist until we address the social and political environments, within which health care exists, that perpetuate global health disparities.

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