Trends in Racial Disparities in Care

TO THE EDITOR: The Special Articles by Jha et al.,1 Vaccarino et al.,2 and Trivedi et al.3 (Aug. 18 issue) generate serious misconceptions. Reducing the disparity in health outcomes between black patients and white patients is very important. The approach that will substantially reduce racial disparities in health is a reduction in the prevalence and improved treatment of key risk factors, especially elevated blood pressure, diabetes, obesity, and cigarette smoking. Blacks and whites with low levels of cardiovascular risk factors have extremely low rates of death from cardiovascular disease and low total mortality.5 There has been a very substantial decline in total mortality from cardiovascular disease and stroke. The decline per year is similar for blacks and whites.6 This decline is due to effective therapies for lowering blood pressure and lipid levels and a decline in cigarette smoking. We continue to spend far too much money focusing on tertiary expensive care and little on underfunded public health initiatives and preventive-medicine approaches to reducing disparities in the United States. The extremely high prevalence of hypertension among blacks and the poor control of blood pressure7 contribute to a higher risk of cardiovascular disease, dementia, disability, and death.8 The use of polio vaccination is far better than improvements in the distribution of ventilators.

Lewis H. Kuller, M.D., Dr.P.H.
University of Pittsburgh
Pittsburgh, PA 15213
kullerl@edc.pitt.edu


TO THE EDITOR: Vaccarino et al. report that differences according to sex and race in the management of acute myocardial infarction have not narrowed over the past decade and that “some unmeasured characteristic of patients or a health care factor” may explain these differences. Environmental factors, including inferior access to or inadequate delivery of medical care, or both, for blacks and women...
clearly contribute. However, the markedly lower amounts of calcified coronary plaque among black patients, despite poorer control of conventional risk factors for cardiovascular disease,1,2 the significantly lower black:white ratio of rates of cardiovascular disease given equivalent access to health care,3,4 and the presence of biologic differences in susceptibility to cardiovascular disease between races and sexes are probably the “unmeasured” characteristics referred to by the authors. Racial and sex disparities in access to good-quality health care and improved socioeconomic status urgently need to be addressed. A balanced discussion of racial and sex differences in susceptibility to cardiovascular disease that are potentially due to biologic factors, as well as the role of these factors in health care delivery, should also be addressed in studies of this type.

Barry I. Freedman, M.D.
Lynne E. Wagenknecht, Dr.P.H.
Donald W. Bowden, Ph.D.
Wake Forest University School of Medicine
Winston-Salem, NC 27157
bfreedma@wfubmc.edu


**Table 1. Reanalysis of Adherence to HEDIS Measures of Quality of Care According to Adverse Events and a Relative Measure of Disparity.**

<table>
<thead>
<tr>
<th>Measure (Initial Year–Final Year)</th>
<th>Initial Rates</th>
<th>Final Rates</th>
<th>Change in Disparity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White Black</td>
<td>White Black</td>
<td>Absolute Relative</td>
</tr>
<tr>
<td></td>
<td>% %</td>
<td>% %</td>
<td>Disparity percentage</td>
</tr>
<tr>
<td>Breast-cancer screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye examination (1999–2003)</td>
<td>36 45</td>
<td>28 20</td>
<td>-7‡</td>
</tr>
<tr>
<td>Control of glycosylated hemoglobin level (1999–2002)</td>
<td>29 33</td>
<td>25 7</td>
<td>-3‡</td>
</tr>
<tr>
<td>Testing of LDL cholesterol level (1999–2003)</td>
<td>30 39</td>
<td>6 8</td>
<td>-7‡</td>
</tr>
<tr>
<td>Control of LDL cholesterol level (1999–2003)</td>
<td>64 77</td>
<td>27 4</td>
<td>-6‡</td>
</tr>
<tr>
<td>Cardiovascular care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control of LDL cholesterol level (1999–2002)</td>
<td>53 67</td>
<td>32 49</td>
<td>-3‡</td>
</tr>
</tbody>
</table>

Rates are expressed as percentages of those not receiving care. The absolute disparity is the simple difference in percentage points (rate for blacks minus rate for whites). The relative disparity is the percent difference (rate for blacks minus rate for whites) divided by the rate for whites and multiplied by 100. HEDIS denotes Health Plan Employer Data and Information Set, and LDL low-density lipoprotein. The HEDIS measures are described in Table 1 of the article by Trivedi et al.5

† P=0.002.
‡ P<0.001.
the data in Table 3 in the article by Trivedi et al. are analyzed in this way, reductions in absolute disparities for four measures become relative increases and small increases for two measures become substantial relative increases (Table 1). Although there may be sound policy reasons or management reasons for presenting data on disparities with the use of other methods, greater consistency is needed in what we mean when we say that disparities are being reduced.

Kenneth G. Keppel, Ph.D.
Jeffrey N. Pearcy, M.S.
Centers for Disease Control and Prevention
Hyattsville, MD 20782
kkeppel@cdc.gov

Joel S. Weissman, Ph.D.
Harvard Medical School
Boston, MA 02115


TO THE EDITOR: Jha et al. highlight the persistent racial differences in the use of nine major procedures from 1992 through 2001. They note increasing disparity in the rate of carotid endarterectomy since 1992. They note an increase in the rate of carotid endarterectomy in all groups analyzed according to sex and race, with the rate of increase being lower among black patients. This difference was also found in the majority of hospital-referral regions.

The authors speculate that the discrepancy could reflect the adoption of more aggressive surgical treatment methods by white patients and their physicians after the recent publication of expanded indications for carotid endarterectomy.\(^1\)\(^-\)\(^2\) However, we feel that this difference could be attributed to a lower prevalence of extracranial carotid-artery stenosis among blacks.\(^3\)\(^-\)\(^5\) The lower prevalence of extracranial stenosis and the higher prevalence of intracranial disease among blacks have been noted in arteriographic and ultrasonographic studies. This difference might account for the lower rates of carotid endarterectomy among black patients.

Basil E. Akpunonu, M.D.
Anand B. Mutgi, M.D.
Sadik A. Khuder, Ph.D.
Medical University of Ohio at Toledo
Toledo, OH 43614
bakpunonu@meduohio.edu


2. European Carotid Surgery Trialists’ Collaborative Group. MRC European Carotid Surgery Trial: interim results for symptomatic patients with severe (70-99%) or with mild (0-29%) carotid stenosis. Lancet 1991;337:1235-43.


DR. VACCARINO REPLIES: We agree with Dr. Kuller that primary prevention of cardiovascular disease, focused on reducing risk factors, in particular hypertension and diabetes, is crucial for reducing disparities in outcomes related to cardiovascular disease between blacks and whites. However, our study was focused on treatment differences in a sample of patients with acute myocardial infarction. It was not our objective to examine overall causes of race-related health disparities in cardiovascular disease. Treating and controlling risk factors in black patients, as in white patients, to prevent cardiovascular disease are clearly important; however, also important is equity in treatment of persons with established cardiovascular disease.\(^1\) To address this question better, we focused on management strategies that have demonstrated efficacy in improving prognosis in this patient population.\(^2\) Our research question is not in contraposition to a primary-prevention approach to reducing disparities; it is a different area of investigation.

Dr. Freedman and coworkers argue that differ-
ences in susceptibility to or severity of cardiovascular disease according to race, as shown by a lower prevalence of calcified plaques and a lower rate of cardiovascular disease among blacks, as compared with whites, probably play a role in explaining differences in the management of acute myocardial infarction. Although these differences may explain differences in the susceptibility to acute coronary events, they should not influence the management of the disease in patients who have a clinically confirmed acute myocardial infarction. Whether a smaller proportion of black patients than white patients in the general population have calcified lesions is immaterial to whether blacks with an acute myocardial infarction should receive guideline-recommended treatment, such as reperfusion therapy. Future research is needed to improve our understanding of processes underlying persistent racial variation in the treatment of patients hospitalized for acute myocardial infarction.

Viola Vaccarino, M.D., Ph.D.
Emory University School of Medicine
Atlanta, GA 30306
viola.vaccarino@emory.edu

for the National Registry of Myocardial Infarction Investigators


DR. JHA AND COLLEAGUES REPLY: We agree with Dr. Kuller that the reduction of key risk factors for cardiovascular disease is important in improving health outcomes for white and black Americans, and some studies suggest that there may not be large differences in this area.1 Furthermore, we certainly sympathize with the notion that the United States often fails to spend enough resources on simple public health measures that can have a large impact on people’s lives. However, such efforts to fund public health initiatives adequately should not prevent us from ensuring that both white and black Americans have access to tertiary care such as coronary-artery bypass graft surgery and total hip replacement. These procedures, when used appropriately, have a profound effect on people’s lives and well-being, and black Americans should benefit from them as much as white Americans do.

We appreciate the point raised by Dr. Akpunonu and colleagues that differences in disease prevalence may account for some of the differences in rates of carotid endarterectomy between whites and blacks. Although blacks have much higher rates of stroke,1 there are data suggesting that part of the increase may be due to higher rates of intracranial carotid disease,3 which would not be amenable to surgical repair. However, an examination of more recent data suggests that there may not be substantial racial differences in the rates of extracranial carotid disease. The Northern Manhattan Stroke Study found similar rates of extracranial carotid disease among whites and blacks,4 and another population-based study found higher rates of large-vessel disease among blacks than among whites.5 Most of the other studies that report on racial differences in intracranial and extracranial carotid disease are limited by not being population based and are often dependent on who is referred for imaging of these vessels.

Therefore, although there might be moderate racial differences in extracranial disease, these differences are unlikely to explain the large racial differences in the rates of carotid surgery. Furthermore, they would certainly not explain the dramatic widening of the gap between whites and blacks in the mid-1990s after the release of results of clinical trials that expanded the indications for these procedures.

Ashish K. Jha, M.D., M.P.H.
Arnold M. Epstein, M.D.
Harvard School of Public Health
Boston, MA 02115

E. John Orav, Ph.D.
Brigham and Women’s Hospital
Boston, MA 02115

Correspondence

Dr. Trivedi and colleagues reply: We agree with Dr. Kuller about the importance of reducing racial disparities in the prevention, detection, and treatment of major risk factors and chronic conditions. Indeed, the Health Plan Employer Data and Information Set (HEDIS) measures we studied assess primary and secondary preventive services with substantial health benefits for common medical conditions.1

Dr. Keppel and colleagues raise an important issue about how best to quantify and report disparities over time. Although changes in absolute and relative differences may yield different interpretations in some instances, we would not recommend a single approach to reporting disparities for all measures of health outcomes and utilization.

In our analysis of temporal trends in the HEDIS quality-of-care measures, we chose to report absolute disparities, for several reasons. Most important, absolute differences measure the percentage of eligible health-plan enrollees from the underserved groups who would benefit from the elimination of a disparity, so such measures may be more useful to clinicians and health care managers establishing priorities and programs to improve health care. Second, trends in absolute disparities have a consistent interpretation, regardless of whether the principal outcome is specified as receipt or nonreceipt of a measure. In Table 1 in our article, which Dr. Keppel et al. adapted in their letter, the relative racial disparity in nonreceipt of low-density lipoprotein cholesterol testing among enrollees with cardiovascular disease increased over time, whereas the relative disparity would be decreased if defined as receipt of this test.

Furthermore, changes in absolute and relative disparities may have sharply divergent policy implications depending on the proportions being compared. In particular, relative disparities are greatly magnified when adherence (or nonadherence) approaches 0 or 100 percent. Consider, for example, hypothetical decreases in absolute nonadherence from 90 percent to 2 percent among blacks and from 60 percent to 1 percent among whites. Such changes would represent a substantial decrease in absolute disparity from 30 percent to 1 percent but a paradoxical increase in the corresponding relative disparity from 1.5 to 2.0.

For these reasons, rather than adopt a uniform method of reporting, the decision to report absolute disparities, relative disparities, or both should depend on the purpose of the analysis and the reasoned judgment of the investigators.

Amal N. Trivedi, M.D., M.P.H.
Alan M. Zaslavsky, Ph.D.
John Z. Ayanian, M.D., M.P.P.
Harvard Medical School
Boston, MA 02115


Costimulation Blockade with Belatacept in Renal Transplantation

To the editor: The recent trial of belatacept in renal transplantation (Aug. 25 issue)1 reveals three cases of post-transplantation lymphoproliferative disorder. Two of the patients with the disorder had a primary Epstein–Barr virus (EBV) infection. The promise of belatacept is greater specificity in the suppression of the immune response.2 Theoretically, therefore, the use of belatacept should not prevent the development of primary immunity against EBV if the virus is introduced in patients with an allograft. It would be interesting to know from the authors whether the primary infection in these two patients was secondary to an EBV serologic mismatch at transplantation or was subsequently acquired in the community. The simultaneous use of basiliximab, mycophenolate mofetil, and glucocorticoids with belatacept may have been counterproductive, since these are nonselective immunosuppressive agents that could have hindered the development of primary immunity to EBV. Basiliximab, which was initially touted as being selective for activated T cells, may also increase the risk of post-transplantation lymphoproliferative disorder.3 The true value of belatacept in relation to this disorder may thus be evident only in trials that do not incorporate the use of nonselective immunosuppressive agents.

Vikas R. Dharnidharka, M.D.
University of Florida College of Medicine
Gainesville, FL 32610
vikasmd@ufl.edu