

## Performance Improvement

# Leveraging Quality Improvement to Achieve Equity in Health Care

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It is now widely recognized that the performance of the health care system in the United States falls far short of its potential on a wide range of quality indicators, particularly for racial and ethnic minorities and other disadvantaged groups. A robust literature exists for both quality of care and disparities in care, as reflected in two influential Institute of Medicine (IOM) reports, *Unequal Treatment*<sup>1</sup> and *Crossing the Quality Chasm*.<sup>2</sup> The literature demonstrates that the gap between the quality of care that patients *should* receive and the quality of care they *do* receive is large, with adults receiving only about half of recommended health care services.<sup>1,3</sup> It also reveals striking disparities by race and ethnicity for a wide range of health services and conditions, even when controlling for factors such as socioeconomic status and access to care.<sup>1</sup>

Quality of health care and disparities in care are integrally linked. The IOM defines quality in terms of six “pillars,” one of which is equity, so when disparities exist, quality is by definition suboptimal.<sup>2</sup> Although most literature on disparities in health care has focused on racial and ethnic minorities, specifically blacks and to a lesser extent Hispanics/Latinos, for the purposes of this article we use the term *disparity groups* to acknowledge that other groups, including immigrants, persons with disabilities, and those of lower socioeconomic status, may also experience disparate care. Similarly, when we use the term *disparities*, we recognize that factors such as cultural or linguistic barriers, social class, and other sociocultural characteristics may be difficult to disentangle from race/ethnicity and thus represent similarly important targets for intervention. Although one study suggested that the absolute magnitude of the quality gap overshadows the magnitude of disparities in quality, the weight of evidence shows otherwise.<sup>4</sup> Large disparities appear in almost every element of health care delivery, including the measures that hospitals typically use as quality indicators (for example, rates of diabetes control, patient satisfaction measures) and for procedures and outcomes that are not typically measured as part of hospital quality reports (rates of surgery for

## Article-at-a-Glance

**Inequality in Quality:** Disparities in health care and quality for racial, ethnic, linguistic, and other disadvantaged groups are widespread and persistent. Health care organizations are engaged in efforts to improve quality in general but often make little attempt to address disparities.

**Standard Versus Culturally Competent Quality Improvement (QI):** Most QI interventions are broadly targeted to the general population—a “one-size-fits-all” approach. These standard QI efforts may preferentially improve quality for more advantaged patients and maintain or even worsen existing disparities. Culturally competent QI interventions place specific emphasis on addressing the unique needs of minority groups and the root causes of disparities.

**How QI Can Reduce Disparities:** QI interventions can reduce disparities in at least three ways: (1) In some cases, standard QI interventions can improve quality more for those with the lowest quality, but this is unreliable; (2) group-targeted QI interventions can reduce disparities by preferentially targeting disparity groups; and (3) culturally competent QI interventions, by tailoring care to cultural and linguistic barriers that cause disparities, can improve care for everyone but especially for disparity groups.

**Guidelines for Culturally Competent QI:** A culturally competent approach to QI should (1) identify disparities and use disparities data to guide and monitor interventions, (2) address barriers unique to specific disparity groups, and (3) address barriers common to many disparity groups.

**Conclusions:** To achieve equity in health care, hospitals and other health care organizations should move toward culturally competent QI and disparities-targeted QI interventions to achieve equity in health care, a key pillar of quality.

operable lung cancer, referral for renal transplantation).<sup>1</sup> Clearly, the health care system will need to focus on both the elimination of disparities and on quality improvement (QI) simultaneously if we are to achieve the goal of equity in quality. But how should efforts to achieve this dual goal be operationalized within hospitals, health centers, and health plans?

This article (1) reviews a young but growing literature on the intersection between QI and disparities in care; (2) distills a set of practical guidelines—evidence-based in some cases and theoretical in others—that can help health care organizations tailor QI strategies toward the elimination of disparities. We refer to this as *culturally competent quality improvement*, with *cultural competence* defined in its broadest sense as the following:

the ability of individual clinicians and health care systems to provide high quality care to patients with diverse values, beliefs and behaviors, including tailoring delivery to meet patients' social, cultural, and linguistic needs.<sup>5(p. v)</sup>

Whereas other articles have begun to explore the role of QI in reducing disparities, we provide a new perspective and a practical approach for health care organizations to review existing programs and design new QI interventions emphasizing cultural competence.<sup>6-9</sup> By assessing both quality and disparities simultaneously and using disparities data to direct tailored interventions, health care organizations can take a more proactive role in the elimination of disparities.

## What Factors Lead to Disparities in Care?

The root causes of disparities in health and in health care are complex. The IOM report *Unequal Treatment* lays out a broad theoretical framework based on three categories of root causes at the level of the patient, processes of care, and the health system.<sup>1</sup> To be more specific, disparities arise from the interplay of a range of overlapping factors within this framework, including doctor–patient communication barriers and lack of trust; limited cultural competence of providers and health care organizations; stereotypical thinking and biased decision making among providers; patients' health beliefs and behaviors; problems due to limited general and health literacy and to limited English proficiency; difficulty in navigating the health care system; and differential access to high-quality hospitals, providers, and other services.<sup>8-9</sup> These root causes can provide direction for potential areas of intervention through mechanisms of QI. Given the complexity of the possible causes of disparities, it is clear that there will be no simple solution for addressing them.

## Standard Versus Culturally Competent QI

In response to the overall quality gap in the United States, the past decade has witnessed a major movement to improve quality in hospitals, health plans, and other health care organizations. Most efforts to improve quality are broadly targeted to the general population, relying on a “one-size-fits-all” approach that we refer to as *standard quality improvement*. Standard QI efforts place no specific emphasis on addressing the unique needs of disparity groups. Even *Crossing the Quality Chasm*, a widely cited and respected treatise on quality, makes no mention of specific approaches for tailoring QI toward minority patients or other groups, although the related concept of patient-centeredness is emphasized.<sup>2</sup> Although the QI movement has led to significant improvement in quality overall, racial- and ethnic-minority populations and other disparity groups have not benefited proportionately to their need, such that for many quality indicators, disparities have remained the same or even worsened.<sup>10</sup>

Consider the following scenario:

A health care organization that serves a fairly diverse patient population implements a diabetes registry, which shows that patients are doing poorly on all of the major diabetes quality indicators. The CEO wants to take action and calls for a broad-scale QI intervention. This is implemented over the next year and includes report cards and educational sessions for clinicians: educational letters sent to patients' homes, and case management relying primarily on phone calls to encourage patients to follow up with their physicians for diabetes testing, lipid management, eye exams, and so on. After one year, the program is modestly successful, with a 5%–10% improvement in performance on all of the diabetes quality indicators. However, the hospital leaders fail to realize that the program has actually worsened or maintained existing disparities in care between white and Latino patients.

What happened? First, this organization failed to recognize the disparity in the first place. In a 2006 survey of hospitals, 78% reported collecting data on race, 50% on ethnicity, and 50% on primary language. However, only 20% of hospitals used these data to stratify quality indicators to look for racial/ethnic or linguistic disparities.<sup>11</sup> This simple but essential step would have alerted the hospital leadership to the existence of a disparity before beginning the QI intervention and would have allowed for longitudinal tracking of its effect on disparities.<sup>9</sup>

Second, this organization failed to assess the unintended consequences of the QI intervention. A standard QI interven-

tion can affect disparities in several ways (Figure 1, right). Disparities can increase even while quality overall improves, remain constant despite overall improvement for both minority and majority patients, or decrease or disappear completely. Casalino has reviewed a range of studies that demonstrate these possible outcomes.<sup>12-13</sup> Two more recent studies describe a worsening of disparities caused by a standard QI intervention. In one of the studies, standard HIV prevention counseling offered during substance abuse treatment improved HIV-related risk behavior for white and Latino patients but not for black patients. In the other, the use of physician report cards for coronary artery bypass grafting (CABG) in New York lead to an initial worsening of disparities in CABG rates for blacks and Hispanics compared with whites.<sup>14</sup> Worsening disparities may occur because of minorities' lesser access to or lesser benefit from QI programs compared with majority patients. Programs may also lead to unintended consequences, such as pay-for-performance initiatives causing physicians to avoid "difficult" patients.

A standard QI intervention may have differential effects on disparities for different quality indicators.<sup>15-17</sup> Sequist and colleagues studied a large-scale diabetes QI intervention using information systems to perform focused patient outreach and to deliver clinical reminders to physicians. Racial disparities decreased for rates of low-density lipoprotein (LDL) testing and LDL control, but disparities remained for statin use and for glycohemoglobin control. The literature is still nascent in the area of QI and disparities. Most interventions remain unpublished because they are not intended as research studies, and very few examine the impact on disparities.

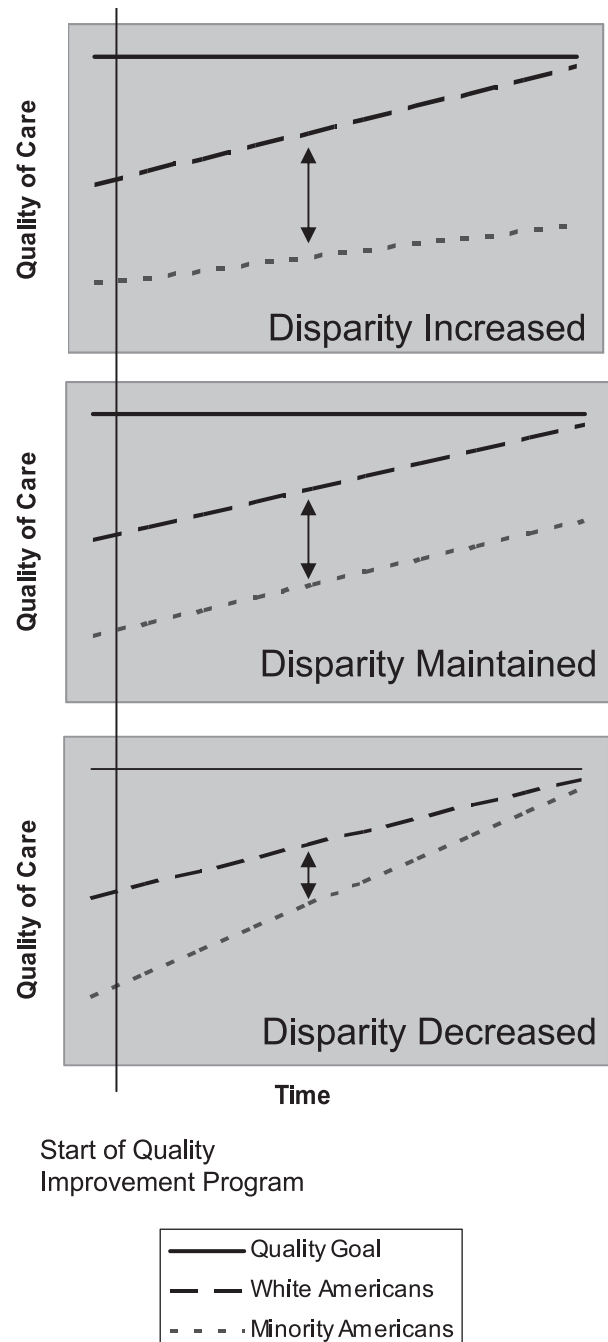
The diabetes QI intervention described in the scenario improved care for white patients but did not reach Latino patients, leading to an overall worsening of the existing disparity. The letters were sent in English; there were no Spanish-speaking, Latino case workers; and many of the Latino patients had nonworking phone numbers or avoided calls from strangers. In addition, the clinician report cards were not stratified by race/ethnicity, and provider education did not emphasize the specific challenges facing Latino patients with diabetes.

### HOW CAN QI REDUCE OR ELIMINATE DISPARITIES?

There are three basic mechanisms to reduce or eliminate disparities. However, these three mechanisms are not clearly distinct; there is significant overlap. (In addition, QI could reduce disparities through other mechanisms such as reducing overuse of procedures by majority patients.)

**1. Standard QI Interventions.** Standard QI interventions

### Three Possible Scenarios Illustrating the Effects That Quality Improvement Programs Have on Disparities Over Time



**Figure 1.** Disparities can increase even while quality overall improves, they can remain constant despite overall improvement for both minority and majority patients, or they can decrease or disappear completely.

have the potential to improve quality for disparity groups more than for majority patients.<sup>12,13,18–20</sup> However, on the basis of the mixed results in the literature, their effect on disparities (as previously described) is unpredictable and variable, so it would be unrealistic to assume that standard, one-size-fits-all approaches alone will dramatically reduce disparities in care.

**2. Group-Targeted QI Interventions.** Such interventions selectively target specific disparity groups. There are two primary ways for this to work:

a. Interventions may be carried out at health care organizations (including, for example, many community health centers, public hospitals) that predominantly serve disparity populations.<sup>21–24</sup> This approach has a long history and is gaining momentum as studies demonstrate that health care organizations (and providers) serving large proportions of minority patients may offer lower-quality care.<sup>25,26</sup> Thus, effective QI interventions (culturally tailored or not) undertaken by these institutions have the potential to reduce disparities on a regional or national level even if they do not measure local disparities.

b. Interventions may target disparity groups within a diverse, general population by using sociodemographic data, such as race/ethnicity or language data, or other methods.<sup>27,28</sup> For example, Aetna, a major national health plan, launched a diabetes disease-management pilot program targeting black and Latino members and showed improved rates of LDL cholesterol screening and glycosylated hemoglobin testing for those groups.<sup>29</sup>

Both of these types of interventions often include culturally tailored strategies for the specific disparity populations targeted, thus overlapping significantly with mechanism 3, as now described.

**3. Culturally Competent QI Interventions.** Culturally competent QI interventions are designed to improve care for everyone but with particular attention paid to disparity groups. This involves specifically tailoring QI interventions to emphasize cultural and linguistic competence and access for disparity groups, while not excluding majority patients. For example, we have implemented a colorectal cancer (CRC) screening project focusing on increasing screening colonoscopy rates for all patients, but with tailored interventions for patient groups that had a history of significantly lower rates within our system. On the basis of a qualitative study of barriers to CRC screening, we developed a QI intervention involving a full-time bilingual (English/Spanish) patient navigator, several part-time navigators for other languages, and various systems interventions to improve access to the program for minority groups.<sup>30,31</sup> The intervention improved screening rates for patients with lan-

guage barriers.

Given the persistent and multifaceted nature of disparities in care, all three approaches will need to be applied in a multifaceted and blended way if we are to move toward health care equity. Group-targeted interventions may have the largest and most immediate impact on the magnitude of national disparities, given that 89% of minorities get their care in 36% of hospitals,<sup>32</sup> but, ideally, such interventions should include some cultural tailoring as well. However, refining existing QI programs to be culturally competent interventions (and developing new ones) may be the most broadly applicable approach because most health care organizations in the United States serve somewhat diverse, but not minority-predominant, populations and are already engaged in ongoing QI efforts. These organizations may not be eager to invest resources into interventions targeted only to certain groups when overall quality is suboptimal. However, an emphasis on cultural competency (broadly defined) may improve the chances that these interventions will reduce disparities in care by focusing on their root causes. Although we acknowledge the short-term economic implications of organizations addressing disparities in this way, there is also a strong business case that can be made for addressing disparities that includes increasing market share among minority patients, increased pay-for-performance revenue, and other factors that can lead to long-term return on investment.<sup>33,34</sup>

## **Recommendations for Developing Culturally Competent QI Interventions to Address Disparities**

Several articles review the types of interventions that may reduce disparities in health care, and new studies have been published since, many of them emphasizing cultural competence.<sup>21–24,28,29,31,35–41</sup> Culturally competent QI interventions should be guided by this evidence, along with established principles of culturally competent care, community-based participatory research, and the recommendations of the the IOM reports.<sup>1,2,7,42,43</sup> On this basis, we provide a set of practical recommendations to help health care organizations improve the cultural competency of their QI efforts (Table 1, page 439).

### **RECOMMENDATION 1. IDENTIFY DISPARITIES AND USE DISPARITIES DATA TO GUIDE AND MONITOR INTERVENTIONS**

Part of the necessary infrastructure to address disparities in care is the ability to identify where they exist and for whom. This requires a mechanism for tracking at least patients'

**Table 1. Recommendations and Examples for Improving Cultural Competency of Quality Improvement Interventions\***

<b>Recommendation</b>	<b>Examples</b>
Identify disparities to guide interventions.	Collect race/ethnicity and language data, stratify quality data, and identify disparity conditions and populations.
Identify barriers to care for specific disparity groups.	Focus groups, interviews or informal communication with patients and staff, engagement of communities
Address common barriers:	
Communication barriers: language, general literacy, and health literacy	Interpreters, language-concordant providers/staff and navigators/coaches/CHWs, materials in target languages and at an appropriate literacy level
Difficulty accessing and navigating the system	Simplified appointment logistics; flexible hours; peer support networks and referrals; minimized costs (financial and time); patient navigators/coaches/CHWs
Patient-centered, culturally competent care	Cultural competence training for clinicians and staff, culturally competent navigators/coaches/CHWs
Conscious and unconscious biases in clinical decision making	Evidence-based guidelines and physician report cards stratified by race/ethnicity/language

\* CHW, community health worker

race/ethnicity data, and ideally also English proficiency, insurance status, and other sociodemographic variables. This process is described in detail elsewhere.<sup>44–46</sup> Many current QI efforts already depend on creating patient registries that track data for specific conditions such as diabetes or asthma. To be culturally competent, these data systems should stratify measures by race/ethnicity, language, and so on, to enable the identification and monitoring of disparities in care.<sup>7,8</sup> This is greatly facilitated by systemwide implementation of electronic medical records (EMRs).<sup>47–49</sup> One successful example (previously described) tracks disparities in diabetes quality measures using EMR data after a standard QI intervention.<sup>15</sup>

Ideally, HIT (health information technology) would help not only with identification and tracking of disparities but also with intervention. To date, however, efforts have focused on facilitating the implementation of EMR systems, especially within community health centers.<sup>50</sup> The Massachusetts eHealth Collaborative and the New York City Primary Care Information Project, for example, have facilitated the successful adoption of electronic health records in hundreds of health practices by addressing financial and other key barriers to adoption.<sup>51</sup> The National Health IT Collaborative for the Underserved was formed in 2008 to convene, research, and propose solutions to reducing and eliminating health disparities through advances in HIT. One experimental study suggested that HIT in its present form could have a mixed effect on disparities—increasing or decreasing them or leaving them

unchanged.<sup>52</sup> However, we did not find studies in the literature that used an HIT approach tailored to address specific disparities. Future efforts could emphasize the use of HIT to target culturally competent outreach to patients via printed materials, videos, or navigators/ coaches/case managers. HIT could also facilitate other strategies such as physician “report cards” with certain performance measures stratified by race/ethnicity or reminders to physicians, including messages or links to culturally relevant information or resources. At the very least, HIT should be implemented equally at minority-serving institutions, otherwise lack of access to this technology could lead to worsening disparities.<sup>53</sup>

## **RECOMMENDATION 2. IDENTIFY BARRIERS SPECIFIC TO DISPARITY GROUPS**

Many QI interventions are planned, carried out, and evaluated without ever assessing their potential effect on disparities in care. First, it is useful to engage leaders and staff representing various cultural backgrounds for their views on the unintended consequences of an intervention. Next, it is crucial to hear from patients themselves and the community through focus groups, interviews, or less formal discussions with community representatives or leaders.<sup>6,54</sup> This information can not only help identify the potential for a general QI intervention to worsen disparities but can also help guide and tailor interventions to address specific cultural issues (referred to in one article as using “cultural leverage”).<sup>28</sup>

### RECOMMENDATION 3. ADDRESS COMMON BARRIERS TO CARING FOR DISPARITY GROUPS

The barriers are as follows:

*a. Communication Barriers: Language, General Literacy, and Health Literacy.* Difficulty in communicating (due to language barriers, low general literacy, or low health literacy) is a well-known source of disparities in clinical care.<sup>1,55,56</sup> *General literacy* is the degree to which one is able to read and write, and *health literacy* is the degree to which individuals have the capacity to obtain, process, and understand basic health information and to make appropriate health decisions.<sup>56</sup> Approaches to addressing both language barriers and literacy have been shown in numerous studies to improve care.<sup>56</sup> Studies aimed at improving care for minority populations often emphasize methods of overcoming language barriers, including translated materials, interpreters, and bilingual clinicians and staff (for example, case managers, coaches, patient navigators). Some studies have also specifically emphasized making programs accessible to patients with limited general and/or health literacy.

For QI interventions to be tailored to eliminate disparities, we recommend making sure that patient materials are translated into the most common languages and that staff who interact with patients have ready access to interpreter services, or at least that some staff are bilingual. Written materials should be reviewed and edited to an eighth-grade literacy level ideally,<sup>57</sup> and health care organizations should adopt “Health Literacy Universal Precautions,” which assume that all patients are at risk of not understanding health information.<sup>58</sup> If possible, alternatives to written materials should be considered, including videos, recorded telephone messages, or direct conversation.

*b. Difficulty Accessing and Navigating the Health Care System.* One of the most basic reasons a QI intervention may propagate disparities is that minority patients may not have equal access to it. All the recommendations for tailoring QI efforts to address disparities hinge on the intervention’s ability to reach the patients who suffer from disparate care. Besides the communication barriers described above, minority and lower-socioeconomic-status patients may have less access to resources, such as home computers and convenient transportation, and may have less flexibility with their time. They may also be less likely to respond to mailed letters and other written materials. Programs based on e-mails and in-person visits may need to include other mechanisms of access, such as telephone, evening and weekend hours, and day care availability. Even after patients have accessed the system (or QI intervention), they

may have greater difficulty navigating its complexities and may fail to follow up for care. Clear and simple instructions, peer support networks, and patient navigators may help with this.

*c. Lack of Patient-Centeredness.* Patient-centeredness, one of the IOM’s six pillars of quality, is defined as care that is compassionate, empathic, and responsive to the individual patient’s needs, values, and expressed preferences.<sup>2</sup> These principles are also central to (and overlap significantly with) culturally competent care.<sup>59</sup> Culturally competent QI programs should be flexible and should adapt to the needs of individual patients as much as possible, taking into account social and cultural factors.<sup>7</sup> Individuals carrying out the QI interventions should receive training in culturally competent, patient-centered care. There now exists a fairly robust literature documenting the efficacy of cultural competence–training interventions, with some showing improvements in intermediate patients outcomes such as satisfaction.<sup>35</sup>

*d. Conscious or Unconscious Biases and Clinical Decision Making.* Several studies support the idea that racial/ethnic biases among clinicians (primarily unconscious or inadvertent biases) may contribute to disparities in care.<sup>60–62</sup> These biases may also affect QI programs both at the level of the clinician (for example, a nurse case manager) and at the leadership level as programs are designed. Although this field is still nascent, several approaches may mitigate the effects of bias. Clinicians and others should learn to recognize their own potential for biased decision making on the basis of race, ethnicity, gender, socioeconomic status, and so on.<sup>63</sup> Stratifying clinician performance by race/ethnicity and providing personalized feedback may be effective ways for clinicians themselves to identify and address disparities in their own patient panels.<sup>64</sup> Finally, several experts propose that rigorous use of evidence-based guidelines could minimize subjectivity in clinical care, thereby reducing the likelihood that race, ethnicity, or other sociodemographic characteristics could inappropriately influence clinical decisions.<sup>1,62</sup>

### Conclusion: Moving Disparities Research into the Practical World of QI

Despite the disturbing prevalence of disparities in health care, QI efforts have generally made little effort to overcome the barriers that keep disparity groups from achieving equity in quality. The science on how QI can reduce racial, ethnic, linguistic, and other disparities is still young and evolving. However, we cannot afford to wait for randomized trials, and instead, in the spirit of Plan-Do-Study-Act,<sup>65</sup> we should experiment with a set of QI strategies to address disparities. Standard QI interventions are not likely to solve this problem on their own and

could even worsen it.

To achieve equity in health care, hospitals, and other health care organizations should stratify their quality data by race, ethnicity, and language to identify disparities in care. They should incorporate an emphasis on cultural competence and should specifically target disparity groups in all their QI programs, building on existing QI infrastructure and targeting the root causes of disparities. These culturally competent QI efforts should be studied and disseminated widely to help move us toward an equitable health care delivery system. Only through an intentional and widespread movement to identify and eliminate disparities in quality can we hope to do justice to this sixth pillar of quality. ■

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## References

1. Smedley B.D., et al.: *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academies Press, 2003.
2. Institute of Medicine: *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press, 2001.
3. McGlynn E.A., et al.: The quality of health care delivered to adults in the United States. *N Engl J Med* 348:2635–2645, Jun. 26, 2003.
4. Asch S.M., et al.: Who is at greatest risk for receiving poor-quality health care? *N Engl J Med* 354:1147–1156, Mar. 16, 2006.
5. Betancourt J.R., Green A.R., Carrillo J.E.: *Cultural Competence in Health Care: Emerging Frameworks and Approaches*. New York City: The Commonwealth Fund, Oct. 2002. <http://www.commonwealthfund.org/Content/Publications/Fund-Reports/2002/Oct/Cultural-Competence-in-Health-Care--Emerging-Frameworks-and-Practical-Approaches.aspx> (last accessed Aug. 24, 2005).
6. Kairys J., et al.: Assessing diversity and quality in primary care through the multimethod assessment process (MAP). *Qual Manag Health Care* 10:1–14, Summer 2002.
7. Betancourt J.R.: *Improving Quality and Achieving Equity: The Role of Cultural Competence in Reducing Racial and Ethnic Disparities in Health Care*. New York City: The Commonwealth Fund, Oct. 2006.
8. Nerenz D.R.: Health care organizations' use of race/ethnicity data to address quality disparities. *Health Aff (Millwood)* 24:409–416, Mar. 1, 2005.
9. Fiscella K., et al.: Inequality in quality: Addressing socioeconomic, racial, and ethnic disparities in health care. *JAMA* 283:2579–2584, May 17, 2000.
10. Agency for Healthcare Research and Quality: *2007 National Healthcare Disparities Report*. U.S. Department of Health & Human Services, 2008. <http://www.ahrq.gov/qual/nhdr07/nhdr07.pdf> (last accessed Aug. 23, 2010).
11. Regenstien M., Sickler D.: Race, Ethnicity, and Language of Patients: Hospital Practices Regarding Collection of Information to Address Disparities in Health Care. National Public Health and Hospital Institute, 2006. <http://www.rwjf.org/files/research/RWJNPHIReport-2-06.pdf> (last accessed Aug. 23, 2010).
12. Casalino L.P.: Medicare, the national quality infrastructure, and health disparities. Medicare Brief/National Academy of Social Insurance 14, Oct. 2006. [http://www.nasi.org/usr\\_doc/medicare\\_brief\\_014.pdf](http://www.nasi.org/usr_doc/medicare_brief_014.pdf) (last accessed Aug. 23, 2010).
13. Casalino L.P.: *Individual Physicians or Organized Processes: How Can Disparities in Clinical Care Be Reduced?* Prepared for the Study Panel on Sharpening Medicare's Tools to Reduce Racial and Ethnic Disparities. National Academy of Social Insurance, Mar. 2005. [http://www.nasi.org/usr\\_doc/Casalino.pdf](http://www.nasi.org/usr_doc/Casalino.pdf) (last accessed Aug. 23, 2010).
14. Werner R.M., et al.: Racial profiling: The unintended consequences of coronary artery bypass graft report cards. *Circulation* 111:1257–1263, Mar. 15, 2005.
15. Sequist T., et al.: Effect of quality improvement on racial disparities in diabetes care. *Arch Intern Med* 166:675–681, Mar. 27, 2006.
16. Sehgal A.R.: Impact of quality improvement efforts on race and sex disparities in hemodialysis. *JAMA* 289:996–1000, Feb. 26, 2003.
17. Gitlin L.N., et al.: Variation in response to a home intervention to support daily function by age, race, sex, and education. *J Gerontol A Biol Sci Med Sci* 63:745–750, Jul. 2008.
18. Rhee M.K., et al.: Use of a uniform treatment algorithm abolishes racial disparities in glycemic control. *Diabetes Educ* 34:655–663, Jul.–Aug. 2008.
19. Moylan C.A., et al.: Disparities in liver transplantation before and after introduction of the MELD score. *JAMA* 300:2371–2378, Nov. 26, 2008.
20. Wells K.B., et al.: The cumulative effects of quality improvement for depression on outcome disparities over 9 years: Results from a randomized, controlled group-level trial. *Med Care* 45:1052–1059, Nov. 2007.
21. Ell K., et al.: Patient navigation and case management following an abnormal mammogram: A randomized clinical trial. *Prev Med* 44:26–33, Jan. 2007.
22. Balcazar H., et al.: A promotora de salud model for addressing cardiovascular disease risk factors in the US-Mexico border region. *Prev Chronic Dis* 6:A02, Jan. 2009.
23. Ferrante J.M., et al.: The effect of patient navigation on time to diagnosis, anxiety, and satisfaction in urban minority women with abnormal mammograms: A randomized controlled trial. *J Urban Health* 85:114–124, Jan. 2008.
24. Peteret D.G., et al.: Establishing a patient navigator program to reduce cancer disparities in the American Indian communities of Western South Dakota: Initial observations and results. *Cancer Control* 15:254–259, Jul. 2008.
25. Hasnain-Wynia R., et al.: Disparities in health care are driven by where minority patients seek care: Examination of the hospital quality alliance measures. *Arch Intern Med* 167:1233–1239, Jun. 25, 2007.
26. Jha A.K., et al.: The characteristics and performance of hospitals that care for elderly Hispanic Americans. *Health Aff (Millwood)* 27:528–537, Mar.–Apr. 2008.
27. Charles S., et al.: Satisfaction with genetic counseling for BRCA1 and BRCA2 mutations among African American women. *Patient Educ Couns* 63:196–204, Oct. 2006.
28. Fisher T.L., et al.: Cultural leverage: Interventions using culture to narrow racial disparities in health care. *Med Care Res Rev* 64:243S–282S, Oct. 1, 2007.
29. National Health Plan Collaborative: *National Health Plan Collaborative: Phase One Summary Report*. Nov. 2006. <http://www.rwjf.org/files/publications/other/NHPCSummaryReport2006.pdf> (last accessed Aug. 23, 2010).
30. Green A.R., et al.: Barriers to screening colonoscopy for low-income

- Latino and white patients in an urban community health center. *J Gen Intern Med* 23:834–840, Jun. 2008.
31. Percac-Lima S., et al.: A culturally tailored navigator program for colorectal cancer screening in a community health center: A randomized, controlled trial. *J Gen Intern Med* 24:211–217, Feb. 2009.
  32. Weissman J.S., et al.: The design of pay-for-performance programs for reducing disparities: What do the data tell us? Paper presented at AcademyHealth Annual Meeting, Washington, DC, Jun. 8, 2008.
  33. Lurie N., et al.: Challenges to using a business case for addressing health disparities. *Health Aff (Millwood)* 7:334–338, Mar. 2008.
  34. Betancourt J.R., et al.: *Improving Quality and Achieving Equity: A Guide for Hospital Leaders*. <http://www2.massgeneral.org/disparitiessolutions/guide.html> (last accessed Aug. 23, 2010).
  35. Beach M.C., et al.: Improving health care quality for racial/ethnic minorities: A systematic review of the best evidence regarding provider and organization interventions. *BMC Public Health* 6:104, 2006.
  36. Beach M.L., et al.: Can language-concordant prevention care managers improve cancer screening rates? *Cancer Epidemiol Biomarkers Prev* 16:2058–2064, Oct. 2007.
  37. Charles S., et al.: Satisfaction with genetic counseling for BRCA1 and BRCA2 mutations among African American women. *Patient Educ Couns* 63:196–204, Oct. 2006.
  38. Chin M.H., et al.: Interventions to reduce racial and ethnic disparities in health care. *Med Care Res Rev* 64(5 suppl.):S7–S28, Oct. 2007.
  39. Kalauokalani D., et al.: Can patient coaching reduce racial/ethnic disparities in cancer pain control? Secondary analysis of a randomized controlled trial. *Pain Med* 8:17–24, Jan.–Feb. 2007.
  40. Masi C.M., et al.: Interventions to enhance breast cancer screening, diagnosis, and treatment among racial and ethnic minority women. *Med Care Res Rev* 64(5 suppl.):S195–S242, Oct. 2007.
  41. Miranda J., et al.: Improving care for minorities: Can quality improvement interventions improve care and outcomes for depressed minorities? Results of a randomized, controlled trial. *Health Serv Res* 38:613–630, 2003.
  42. Macaulay A.C., et al.: Participatory research with native community of Kahnawake creates innovative Code of Research Ethics. *Can J Public Health* 89:105–108, Mar.–Apr. 1998.
  43. Minkler M., Wallerstein N. (eds.): *Community-Based Participatory Research for Health*. San Francisco: John Wiley & Sons, Inc., 2003.
  44. Health Research and Educational Trust (HRET): *HRET Disparities Toolkit*. <http://www.hretdisparities.org> (last accessed Aug. 23, 2010).
  45. Hasnain-Wynia R., et al.: *Who, When, and How: The Current State of Race, Ethnicity, and Primary Language Data Collection in Hospitals*. New York City: The Commonwealth Fund, May 2004.
  46. America's Health Insurance Plans: *Collection and Use of Race and Ethnicity Data for Quality Improvement: 2006 AHIP-RWJF Survey of Health Insurance Plans*. 2006. <http://www.ahip.org/content/default.aspx?bc=38|82|17974> (last accessed Aug. 12, 2010).
  47. King R.K., et al.: A plan for action: Key perspectives from the racial/ethnic disparities strategy forum. *Milbank Q* 86:241–272, Jun. 2008.
  48. Sequist T.D., et al.: Moving health information technology forward. *J Gen Intern Med* 23:355–357, Apr. 2008.
  49. Sequist T.D., et al.: Information technology as a tool to improve the quality of American Indian health care. *Am J Public Health* 95:2173–2179, Dec. 2005.
  50. Shields A.E., et al.: Adoption of health information technology in community health centers: Results of a national survey. *Health Aff (Millwood)* 26:1373–1383, Sep.–Oct. 2007.
  51. Mostashari F., et al.: A tale of two large community electronic health record extension projects. *Health Aff (Millwood)* 28:345–356, Mar.–Apr. 2009.
  52. Ketcham J.D., et al: Physician clinical information technology and health care disparities. *Med Care Res Rev* 66:658–681, Dec. 2009.
  53. Eng T.R., et al.: Access to health information and support: A public highway or a private road? *JAMA* 280:1371–1375, Oct. 21, 1998.
  54. Quigley D.: Perspective: A review of improved ethical practices in environmental and public health research: Case examples from native communities. *Health Educ Behav* 33:130–147, Apr. 2006.
  55. Chen A., et al.: *Language Barriers in Health Care Settings: An Annotated Bibliography of the Research Literature*. The California Endowment, Aug. 2003. [http://www.hablamosjuntos.org/pdf\\_files/Cal.Endow.Bibliography.pdf](http://www.hablamosjuntos.org/pdf_files/Cal.Endow.Bibliography.pdf) (last accessed Aug. 12, 2010).
  56. Nielsen-Bohlman L., et al. (Eds.): *Health Literacy: A Prescription to End Confusion*. Washington, DC: National Academy Press, 2004.
  57. National Institute of Health Executive Secretariat: *The Plain Language Initiative*. <http://execsec.od.nih.gov/plainlang/index.html> (last accessed Aug. 12, 2010).
  58. Agency for Healthcare Research and Quality: Health Literacy Universal Precautions Kit. <http://www.ahrq.gov/qual/literacy/> (last accessed Aug. 12, 2010).
  59. Saha S., et al.: Patient centeredness, cultural competence and healthcare quality. *J Natl Med Assoc* 100:1275–1285, Nov. 2008.
  60. Green A.R., et al.: Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. *J Gen Intern Med* 22:1231–1238, Sep. 2007.
  61. Schulman K.A., et al.: The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med* 340:618–626, Feb. 25, 1999.
  62. van Ryn M., Fu S.S.: Paved with good intentions: Do public health and human service providers contribute to racial/ethnic disparities in health? *Am J Public Health* 93:248–255, Feb. 2003.
  63. Smith W.R., et al.: Recommendations for teaching about racial and ethnic disparities in health and health care. *Ann Intern Med* 147:654–665, Nov. 2007.
  64. Sequist T.D., et al.: Physician performance and racial disparities in diabetes mellitus care. *Arch Intern Med* 168:1145–1151, Jun. 9, 2008.
  65. Institute for Healthcare Improvement: Testing Changes. <http://www.ihl.org/IHI/Topics/Improvement/ImprovementMethods/HowToImprove/testingchanges.htm> (last accessed Aug. 12, 2010).