Changing Healthcare Professionals' Behaviors to Eliminate Disparities in Healthcare: What Do We Know? How Might We Proceed?

Ronnie D. Horner, PhD; William Salazar, MD; H. Jack Geiger, MD, MPH, DSc; Kim Bullock, MD; Giselle Corbie-Smith, MD; Martha Cornog, MA, MS; and Glenn Flores, MD; for the Working Group on Changing Health Care Professionals' Behavior

The patient–healthcare provider communication process—particularly the provider's cultural competency—is increasingly recognized as a key to reducing racial/ethnic disparities in health and healthcare utilization. A working group was formed by the Office of Minority Health, Department of Health and Human Services to identify strategies for improving healthcare providers' cultural competency. This expert panel, one of several working groups called together to explore methods of reducing healthcare disparities, was comprised of individuals from academic medical centers and health professional organizations who were nationally recognized as having expertise in healthcare communication as it relates to diverse populations. During the 2-day conference, the panel identified, from personal experience and knowledge of the literature, key points of intervention and interventions most likely to improve the cross-cultural competency of healthcare providers. Proposed interventions included introduction of cultural competence education before, during, and after clinical training; implementation of certification and accreditation requirements in cross-cultural competence for practicing healthcare providers; use of culturally diverse governing boards for clinical practices; and active promotion of workforce cross-cultural diversity by healthcare organization administrators. For each intervention, methods for implementation were specified. On-going monitoring and evaluation of processes of care using race/ethnicity data were recommended to ensure the programs were functioning.

(Am J Manag Care. 2004;10:SP12-SP19)

Long-standing disparities in healthcare utilization among US minority populations are well documented across a variety of health conditions. Public awareness of this situation was heightened by the recent Institute of Medicine report on unequal access to healthcare.[1] The causes of these disparities, and their effects on patients' health status, are now major foci of inquiry.

Even a casual review of the literature reveals an extensive number of studies that examine the reasons for, and consequences of, observed racial, ethnic, gender, and socioeconomic disparities in the clinical management of many conditions, including cardiovascular and cerebrovascular diseases,[2-11] congestive heart failure,[12] cancer,[13,14] renal transplantation,[15-17] hip and knee replacement,[18,19] and pain management.[20-23] These studies show that, even within equal-access healthcare systems and the universal healthcare financing programs of Medicare and Medicaid, patients who belong to minority groups are substantially less likely than whites to receive either key diagnostic procedures or effective therapies after adjustment for important clinical indications. Moreover, it is becoming clear that these disparities in the use of diagnostic and therapeutic procedures negatively affect minority patients' health status (see, eg, references 9-11).

There are numerous recommendations for potentially effective interventions; those of the Institute of Medicine report are the most recent.[1] In 1985, the Department of Health and Human Services' *Report of the Secretary's Task Force on Black and Minority Health* identified the healthcare provider, patient, and the healthcare system as key points for intervention to correct the disparities in health and healthcare utilization.[24-31] Among its recommendations, the task force called for educational efforts regarding health and disease that are targeted to minority populations, training healthcare providers and educators to be sensitive to minority cultural and language needs, and modifying services to be more culturally acceptable. Also recommended were ongoing monitoring of health data according to patients' demographic and socioeconomic characteristics, and continued research regarding the relationship between patients' cultural diversity and health outcomes.

From the University of Cincinnati Medical Center, Cincinnati, Ohio (RDH). At the time of writing, Dr Horner was with the National Institute of Neurological Disorders and Stroke, Bethesda, Md and Duke University Medical Center, Durham, NC; the Medical College of Georgia, Augusta, Ga (WS); City University of New York, New York, NY (HJG); the American Academy of Family Physicians, Washington, DC (KB); Emory University School of Medicine, Atlanta, Ga (GCS); the American College of Physicians, Philadelphia, Pa (MC); and Boston University, Boston, Mass (GF).

Prepared for the Conference on Diversity and Communication in Health Care: Addressing Race/Ethnicity, Language, and Social Class in Health Care Disparities; Washington DC; February 17-18, 2000. This study was sponsored by the Office of Minority Health, US Department of Health and Human Services.

Address correspondence to: Ronnie D. Horner, University of Cincinnati Medical Center, PO Box 670840, Cincinnati, OH 45267-0840. E-mail: ronnie.horner@uc.edu.

Although the patient exercises some control over the outcome of the clinical decision-making process,[32,33] the healthcare provider (eg, the physician) has the primary role in determining the clinical management of a condition.[21,23,34-36] A recent study documents that among patients with a similar presentation of cardiac disease, there is significant variation in the physician's decision to refer a patient for cardiac catheterization based on the patient's sex and race. Black women were referred less often for further diagnostic evaluation than white men, black men, or white women.[34] Similarly, another report indicates that for procedures involving a higher as opposed to a lower degree of provider discretion (eg, hysterectomy vs acute appendectomy), there is lower utilization among black patients.[36] Because interventions directed at healthcare professionals seem more likely to effect change in healthcare utilization and, ultimately, patient outcomes, provider-focused interventions have a higher priority for implementation than interventions targeted at either patients or healthcare systems.

There is a long-standing need for an action agenda that will systematically move the nation from recommendations to impact. This process involves identifying optimal points of intervention, the potentially most effective interventions at each point, a method for implementation, and a plan for ongoing monitoring and evaluation. This report presents the recommendations from the Working Group on Changing Health Care Professionals' Behavior regarding the most effective approaches to improving healthcare providers' cultural competency so as to reduce disparities in healthcare utilization.

STUDY DESIGN AND METHODS

The Working Group

As part of the larger Conference on Diversity and Communication in Health Care sponsored by the Office of Minority Health, US Department of Health and Human Services, a working group was formed with the charge of developing a set of recommendations for effecting changes in healthcare professionals' behaviors to reduce healthcare disparities in the near term. Other working groups focused on effecting changes in patient behavior and healthcare systems. The working group members were identified by the conference organizers within the Office of Minority Health based on national recognition of expertise in the area of diversity and communication within the healthcare setting. Working group members were drawn from academic institutions and from healthcare professional organizations.

Methods

The major underlying premise of the working group was that observed disparities in healthcare utilization are primarily a function of healthcare professionals' lack of cultural competence. That is, healthcare professionals generally do not understand the health-related and health-system–related beliefs and attitudes of other racial, ethnic, or social class groups, as well as lack awareness of (usually covert or unconscious) biases that they themselves may bring to the processes of patient care.

The working group began with a brainstorming session from which a broad array of options for modifying providers' cultural competency were generated. Then, the group identified a subset of approaches they believed were most likely to be effective. Subgroups were formed to develop specific recommendations regarding the content and implementation of each approach.

RESULTS

Mechanisms for Changing Provider Behavior

The group began by considering the currently available mechanisms through which to change healthcare providers' behaviors, whether that behavior relates to cost containment, preferred diagnostic or therapeutic practices, or cultural competence.[37] These mechanisms include (1) educational programs, (2) peer review and feedback, (3) administrative changes, (4) active participation, and (5) systems of rewards and penalties. It was recognized, though, that some of these mechanisms may not be either the most appropriate or the most useful approaches to improving healthcare providers' cultural competence. Great creativity may be required to identify administrative changes to increase the cultural competence of healthcare providers, whereas development of educational programs is more straightforward in conceptualization.

It is now well documented that the more passive forms of education such as consensus statements regarding clinical practice guidelines and didactic lectures (even with follow-up sessions) are generally ineffective,[38-40] although this may be a consequence, in part, of organizational barriers.[41] Indeed, organizational characteristics may explain the relative ineffectiveness of low-intensity educational programs; it is reported, for example, that an educational memorandum regarding appropriate use of less expensive histamine H_2 blockers with feedback on personal prescribing patterns resulted in a significant change in prescribing patterns among group-based but not network-based HMO physicians.[42]

One intensive educational approach proven to be effective in changing healthcare providers' behaviors is educational outreach.[43] Educational outreach or "detailing" is not the typical continuing-education program. It is based on marketing techniques routinely used by pharmaceutical companies.[44] Key elements of detailing include the following:

- The interaction between the healthcare provider and the educational agent or facilitator is brief (generally no more than 10 minutes) but highly focused.
- Communication is targeted to the area of practice of highest concern.
- Information is presented in terms relevant to the motivations of the provider.
- Highest priority often is given to providers identified as "opinion leaders" or to providers whose changed behavior would have the greatest impact on practice patterns. (In the case of cultural competence, the high-priority providers would include the most influential providers in a given healthcare facility and those providers shown by actual practice patterns to have the lowest cultural competence. It is worth noting here that a healthcare organization must have an effective mechanism of monitoring practice patterns in order to identify the latter type of providers.)
- The educational agent or facilitator provides a balanced presentation of the issue and involves the provider in the discussion.
- The message is kept simple; that is, only a few points are emphasized.
- There is a feedback mechanism established with reinforcement of the sought-after behavior.

An effective means of educating healthcare providers in training may be to incorporate the principles of detailing into the classroom setting.

Promising Approaches to Improving Cultural Competency

The working group identified various ways to improve communication between diverse patient groups and healthcare providers, with emphasis given to improving cultural competence among healthcare providers. Although a recent review indicates a lack of empirical evidence on the effectiveness of many of the mechanisms to achieve cultural competency with healthcare systems,[45] 5 interrelated initiatives were considered to have the greatest potential to improve healthcare providers' cultural competence. These initiatives are described in detail below and in **Table 1.**

Training in Cultural Competence. Cultural competence training for healthcare professionals should be a fundamental part of the curriculum and be required for professional certification. It is worth emphasizing that training in cultural competence is not similar to training in other "competencies" (eg, mastery of procedures). It is a complex mix of specific types of knowledge, self-awareness, and their application to the processes of diagnosis, treatment, and clinical decision making.[46] The instruction in cultural competence should be continuous throughout the formal training period and during practice. The target audience for cultural competence training includes all healthcare professionals either in training or currently involved in direct patient care (eg, dentists, nurses, physicians, physician assistants, psychologists, social workers). Clinic staff and administrators also may benefit from cross-cultural training programs. The programs could be integrated into clinical care; that is, the training could occur in a clinical setting (eg, during a physical diagnosis). It also must be recognized that cultural competence is an incremental process that is unlikely to be achieved by a 1-time course of study.

As indicated previously, the concept of cultural competence includes awareness of one's own value system or cultural perspective, understanding of culture and its interaction with health and healthcare, sensitivity to the cultural issues of each patient, and understanding how to address the patient's healthcare needs in a manner congruent with his or her culture.[47] One might add to this list of defining characteristics an understanding of one's own (often unconscious) biases toward individuals of different races, ethnic backgrounds, social classes, or language groups.

The curricular content needs to address knowledge, attitudes, and skills. This content should include but not be limited to:

- Epidemiologic data on race, ethnic, socioeconomic, and other culturally related differences in the incidence and prevalence of disease and disease pathology (eg, location of atherosclerotic lesions).
- Fundamental skills in effective communication with diverse populations.
- Basic knowledge regarding cultural competence.
- Ability to communicate (through interpreters if necessary) with the predominant patient populations served by a given healthcare facility.
- Skill in the use of interpreters.
- Evidence-based cross-cultural training specific to races, ethnicities, and social classes of the provider's practice. Evidence-based information should be provided about normative cultural values, language issues, folk illnesses, patient beliefs about health and sickness,[48] and specific cultural practices (eg, infant head molding[49]), particularly as they relate to the predominant cultural groups served by the given healthcare facility.

Table 1. Working Group Recommendations Regarding Programs for Improving the Cultural Competence of Healthcare Professionals*

Recommended Program	Description	Target Audience	Responsible Parties for Implementation	Time Table
Cultural competence education	Evidence-based training program in cultural competence	All healthcare professionals in training and in clinical practice	Educational organization (eg, medical school) Continuing-education organizations	Identify or create program of study in cultural competence within 2 years Implement program within 3 years
On-going monitoring and evaluation of processes of care	Collection, analysis, and dissemination to healthcare professionals of information on the processes of care according to the races, ethnicities, social classes, and languages of the patient population Incorporation into quality assurance program	All healthcare professionals of the health organization (eg, clinica practice, hospital)	Healthcare organization	Create infrastructure (eg, programs for analysis) within 1 year Implement within 2 years
Certification and accreditation	Certificate of cultural competence training	All healthcare professionals	Professional society (eg, ANA)	Create criteria for evaluation within 2 years
	Healthcare professional staff certified as culturally competent	Healthcare organization (eg, clinical practice, hospital)	Accrediting organization (eg, JCAHO)	Implement criteria within 3 years
Clinical practices' governing boards	Oversight board on cultural competence comprised of stakeholders (healthcare providers, administrators, 3rd party payers, members of professional societies, patients, cultural brokers such as folk healers,interpreters)	Healthcare organizations	Healthcare organizations	Create and implement governing boards within 2 years
Promotion of workforce diversity	Mentoring and support programs for pre-, college, undergraduate, and graduate minority students	Healthcare professional schools and healthcare organizations	Healthcare professional schools Federal government	Identify or create a mentoring/support program within 2 years and implement within 3 years
	Use of interpreters		Federal government	Enforce now
	Enforcement of title VI provisions		Federal government	Enforce now
	Monetary incentive to healthcare organizations to recruit minority healthcare professionals to staff		Local, state, or federal government	Identify or create an incentive program within 2 years and implement within 3 years

*ANA indicates American Nurses Association; JCAHO, Joint Commission on Accreditation of Healthcare Organizations.

The training program should utilize multiple learning methods that are known to be effective, including role-playing, standardized patients (ie, an actor playing a patient with a specific condition or disease), critical incidents, specific case presentations, and interactive lectures. Trainers for cultural competence programs should include patients, outside consultants such as indigenous healers and culture brokers, and interdisciplinary healthcare professionals.

There should be ongoing evaluation of the training programs, with particular emphasis on measurement of specific effects. One primary measure is the utilization of diagnostic procedures and treatments within marker diseases or conditions. The target conditions include, but are not be limited to, the high-priority areas of Healthy People 2010, such as cancers, diabetes mellitus, heart disease and stroke, and HIV/AIDS.[50,51] Other candidate marker conditions are those for which racial, ethnic, and socioeconomic differences in the diagnostic or therapeutic processes have been documented (eg, pain management[21,23]). Additional measures of the effect of a training program could be patient and healthcare provider satisfaction with the healthcare communication process during appointments.

Monitoring of Healthcare Processes and Outcomes. It is essential to measure progress in elimination of inequities. Each healthcare facility should monitor those health conditions with known disparities in processes of care (ie, diagnosis and treatment), patient satisfaction, and outcome of care related to race, ethnicity, non–English-language status, and patient social class.

The monitoring program could be part of institutional quality assurance programs. If so, facilities would need to modify their current quality assurance programs to allow for the routine collection and analysis of these types of data, and for the feedback of results to healthcare providers at all levels. Correction of identified disparities would be the responsibility of the facilities.

Certification and Accreditation Requirements. As an additional requirement for professional certification, each healthcare professional could be required to document cultural competence. This process might be most effective if it involved the active participation by the various certification and accreditation organizations: the Joint Commission on Accreditation of Healthcare Organizations, licensing boards, and national, state, and local accrediting boards, including organizations that approve continuing education (eg, Association of American Medical Colleges, American Nurses Association, National Association of Social Workers). Federal and state initiatives and regulations regarding cultural competence among healthcare professionals also could be initiated and enforced. Currently, at the federal level, there is the Healthcare Fairness Act; model legislation at the state level is the proposed New Jersey bill requiring cultural competence training of healthcare professionals.

Diversity in the Membership of Governing Boards. Key stakeholders in healthcare facilities should be involved in changing provider behaviors related to cultural competence. Thus, the oversight or governing boards should include representatives from all groups of healthcare providers, administrators, third-party payers, members of professional societies, patients, interpreters, and other cultural brokers (eg, folk healers). Healthcare facilities involved in international healthcare should include the appropriate international representatives or contacts among the members of their oversight or governing committees.

The members of the cultural-competence oversight or governing boards would be responsible for monitoring and evaluating healthcare provider behavior as it relates to cultural competence. Among their key tasks would be defining the outcomes to be monitored, setting goals, and assessing whether the goals are being met. The governing boards also could establish media liaisons through which to publicize the progress toward cultural competence among all the staff of community healthcare facilities.

Enhancing and Retaining Diversity in the Healthcare Workforce. Healthcare facilities could seek work place diversity that reflects the demographics of the population being served. It is recognized that a balance will need to be achieved between the need for cross-cultural competence and the other demands of patient care. Balance could be achieved by employing interpreters who meet the needs of the facility and by actively identifying the visits that will require an interpreter's services. Professional healthcare interpreters should be employed whenever possible. In general, clinic staff should not be used routinely as interpreters, but if so used, the staff member should be released from his or her primary responsibilities. Additional time for the visit also should be planned into the schedule when interpreters will be involved.

One approach to help ensure effective recruitment of minorities at all staffing levels is to develop an adequate "pipeline" for professional training.[52-55] This activity must begin at the earliest levels of education. From kindergarten through high school, programs for mentoring and support of students interested in the health sciences can be effective in increasing the number of minority students who have majors relevant to the healthcare professions at the undergraduate level. Potentially effective ways to increase the number of minority students in health professional schools include education grants or scholarships, loan repayments,

guaranteed employment in underserved communities, and other such incentives. Programs designed to facilitate the application process and to support underrepresented applicants are another promising approach.

To recruit and retain providers, broadly based community partnerships with local healthcare providers, businesses, and educational and service organizations could be developed. Moreover, monetary incentives could be made available to healthcare organizations in communities with large minority populations to encourage the hiring of healthcare professionals to match the diversity of the community. The amount of the incentive could be based on the diversity among the consumers of care in the particular community. That is, facilities located in highly diverse communities would receive a larger monetary incentive than facilities in less racially or ethnically heterogeneous communities. Each facility would be responsible for assessing the diversity of its consumers of care.

There are a number of other means for supporting a diverse workforce. These include:

- Ensuring continuity of cultural competence by providing the staff with continuing education.
- Giving practitioners the resources to be cross-culturally sensitive in practical ways (see Training in Cultural Competence).
- Providing incentives to the staff such as textbooks, pamphlets, Internet access, and subscriptions to journals.
- Guaranteeing that Title VI regulations are followed in practice (eg, making transportation and interpreters available).

The resources for implementation and coordination of these "wraparound" services should be the responsibility of each facility.

DISCUSSION

It is increasingly clear that the healthcare provider plays a pivotal role in the interaction between providers and patients from diverse populations. The experts comprising the Working Group on Changing Healthcare Professionals' Behavior concluded that improved cultural competency among these professionals would yield improved communication with patients from diverse backgrounds, reducing disparities in health and healthcare utilization. A set of 5 approaches were identified as having the highest potential to increase cultural competency among healthcare professionals: cultural competence education before, during, and after clinical training; ongoing monitoring and evaluation of processes of care; certification and accreditation requirements; use of culturally diverse governing boards for healthcare practices; and promotion of workforce diversity. These approaches reflect current understanding and can be implemented now.

Current knowledge is sufficient to begin the process of reducing diversity-related and language-related disparities in healthcare utilization by improving healthcare provider behaviors. However, in order to continue the process, further attention needs to be directed to several areas.

First, current knowledge regarding the reasons for the observed disparities in health and healthcare utilization must be refined. Significant gaps in knowledge remain, particularly about the interpersonal processes of care.[56] The considerations presented in **Table 2** could provide an initial research agenda that would generate studies to extend current understanding of important associations. The elicitation of symptoms and evaluation of signs are highly related to the patient's cultural characteristics.[49,57] The selection, dosage, and monitoring of adverse effects of psychotropic medications need to be done with regard to the patient's culture, as reactions to these medications differ across cultural groups.[58] Patients' racial and socioeconomic characteristics clearly have been shown to influence physicians' beliefs about their patients' intelligence, willingness to comply, and likelihood of engaging in risky behaviors, as well as influencing the physician's approach to presenting treatment options (eg, the physician's decision about how much information to provide).[59]

An area of particular concern and urgency is the presence among healthcare providers of covert or unconscious biases toward patients of diverse cultural backgrounds. Research in this area needs to be expanded to include not only physicians but also other healthcare providers. The importance of these types of studies is that they identify specific points of potential cultural conflicts, knowledge that could be useful in developing the content areas for the cultural competence education programs.

A second area needing further attention is evaluation of the effectiveness of the various interventions that have been suggested. The current status of cultural competence training programs is a case in point.[47,60,61] A recent survey of the 126 US medical schools found that 8% provided no instruction in cultural issues; in 87%, cultural instruction was part of a larger course and consisted of 1 to 3 lectures; and the course was an elective for 16%.[61] Most courses had been taught for less than 6 years, were given only during the initial 2 years of training, used didactic and group-learning formats, and did not specifically address the cultural issues of the largest nonwhite ethnic groups.[61] An earlier survey reported

Table 2. Decision Points and Key Considerations for Healthcare Providers in Provision of Culturally Competent Care

Decision Point	Key Consideration
Assessment and evaluation of patient's clinical presentation	The healthcare professional's state of knowledge regarding racial, ethnic, socioeconomic, and other cultural influences on: • Patient's reporting of symptoms. • Occurrence of signs and symptoms for specific conditions.
Selection of recommendation(s) for clinical management	The knowledge and assumptions of the healthcare professional (vis-a-vis the perceived race, ethnicity, etc, of the patient) regarding: • Patient's preferences about being involved in selecting among the array of options. • Patient's preferences for diagnostic and therapeutic options, and outcomes of healthcare (eg, acceptability of outcomes and treatment requirements). • Patient's ability and willingness to comply with various options, given financial constraints. • Cultural milieu regarding healthcare and the selection of options.
Negotiation of care between patient and healthcare professional	The knowledge and the assumptions of the healthcare professional (vis-a-vis the perceived race, ethnicity, etc, of the patient) regarding: • Patient's desire for information and the amount of information that should be provided relating to the disease, diagnostic procedures, and treatments. • Patient's expectations regarding care for the perceived symptoms. • Personal willingness to allocate to the patient the freedom to choose among the potential healthcare options.

that 14% of undergraduate medical education programs in the United States did not have 1 or more educational opportunities relating to multicultural medicine; however, 13% of the programs reported teaching multicultural medicine as a separate course, as opposed to only 8% of medical schools in the more recent suvey.[47,61] The content of the existing programs has only begun to be delineated and is highly variable.[60]

The program content of cultural competence training is the subject of a follow-up survey by the Association of American Medical Colleges.[47] For the other health professions, we need information regarding the proportion of the professional education programs that have formal training in cultural competence and the content of the cultural competence training programs.

As a third area for future attention, the cost effectiveness of existing training programs in cultural competence needs to be determined. Neither the costs nor the effectiveness of current or potential programs is known. For example, although it is known that educational outreach can be effective, it is less certain that this approach will be effective in developing the cultural competence of healthcare providers. Moreover, there is a need to identify other cost-effective training programs, as well as to develop global cultural competence. The global effort could include collaborations with international medical institutions and organizations through workshops, symposiums, and summit meetings. The United States and United Kingdom are currently involved in such efforts.[62,63]

Acknowledgments

Members of the Working Group on Changing Health Care Professionals' Behavior are Kim Bullock, MD; Karan Cole, ScD (Johns Hopkins Bayview Medical Center, Baltimore, Md); Giselle Corbie-Smith, MD; Martha Cornog, MA, MS; Peter Domoto, DDS (University of Washington School of Dentistry, Seattle, Wash); William Emmet, BA (National Alliance for the Mentally Ill, Arlington, Va); Alicia Fernandez, MD (University of California, San Francisco, Calif); Glenn Flores, MD; H. Jack Geiger, MD, MPH, DSc; Ronnie D. Horner, PhD; Cornelia Porter, PhD (American Nurses Association, Washington, DC, and University of Michigan, Ann Arbor, Mich); William Salazar, MD; and Devi Sengupta, BA, MPhil (University of Washington Medical School, Seattle, Wash).

REFERENCES

1. Smedley BD, Stith AY, Nelson AR. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care.* Washington, DC: Institute of Medicine, National Academy Press; 2002.

2. Goldberg KC, Hartz AJ, Jacobsen SJ, Krakauer H, Rimm AA. Racial and community factors influencing coronary artery bypass graft surgery rates for all 1986 Medicare patients. *JAMA.* 1992;267:1473-1477.

3. Ayanian JZ, Udvarhelyi IS, Gatsonis CA, Pashos CL, Epstein A. Racial differences in the use of revascularization procedures after coronary angiography. *JAMA.* 1993;269:2642-2646.

4. Whittle J, Conigliaro J, Good CB, Lofgren RP. Racial variation in the use of invasive cardiovascular procedures in the Department of Veterans Affairs medical system. *N Engl J Med.* 1993;329:621-627.

5. Oddone EZ, Horner RD, Monger ME, Matchar DB. Racial variations in the rates of carotid angiography and endarterectomy in patients with stroke and transient ischemic attack. *Arch Intern Med.* 1993;153:2781-2786.

6. Escarce JJ, Epstein KR, Colby DC, Schwartz JS. Racial differences in the elderly's use of medical procedures and diagnostic tests. *Am J Public Health.* 1993;83: 948-954.

7. Hannan EL, van Ryn M, Burke J, et al. Access to coronary artery bypass surgery by race/ethnicity and gender among patients who are appropriate for surgery. *Med Care.* 1999;37:68-77.

8. Oddone EZ, Horner RD, Sloane R, et al. Race, presenting signs and symptoms, use of carotid artery imaging, and appropriateness of carotid endarterectomy. *Stroke.* 1999;30:1350-1356.

9. Petersen ED, Shaw LK, Delong ER, Pryor DB, Califf RM, Mark DB. Racial variation in the use of coronary revascularization procedures. Are the differences real? Do they matter? *N Engl J Med.* 1997;336:480-486.

10. Peterson ED, Wright SM, Daly J, Thibault GE. Racial variation in cardiac procedure use and survival following acute myocardial infarction in the Department of Veterans Affairs. *JAMA.* 1994;271:1175-1180.

11. Udvarhelyi IS, Gatsonis C, Epstein AM, Pashos CL, Newhouse JP, McNeil BJ. Acute myocardial infarction in the Medicare population. Process of care and clinical outcomes. *JAMA.* 1992;268:2530-2536.

12. Ayanian J, Weissman JS, Chasen-Taber S, Epstein AM. Quality of care by race and gender for congestive heart failure and pneumonia. *Med Care.* 1999;37:1260-1269.

13. Ball JL, Elixhauser A. Treatment differences between blacks and whites with colorectal cancer. *Med Care.* 1996;34:970-984.

14. Burns RS, McCarthy EP, Freund KM, et al. Black women receive less mammography with similar use of primary care. *Ann Intern Med.* 1996;125:173-182.

15. Kjellstrom CH. Age, sex, and race inequality in renal transplantation. *Arch Intern Med.* 1995;148:1305-1309.

16. Gason RS, Ayres I, Dooley LG, Diethelm AG. Racial equity in renal transplantation: the disparate impact of HLA-based allocation. *JAMA.* 1993;270:1352-1356.

17. Soucie JM, Neyland JF, McClellan W. Race and sex differences in the identification of candidates for renal transplantation. *J Am Kidney Dis.* 1992;19:414-419.

18. Harris WH, Sledge CB. Total hip and total knee replacement. *N Engl J Med.* 1990;323:801-807.

19. Wilsom MG, May DS, Kelly JJ. Racial differences in the use of total knee arthroplasty for osteoarthritis among older Americans. *Ethn Dis.* 1994;4:57-67.

20. Tood KH, Samaroo N, Hoffman JR. Ethnicity as a risk factor for inadequate emergency department analgesia. *JAMA.* 1993;269:1537-1539.

21. Bernabei R, Gambassi G, Lapane K, et al, for the Sage Study Group. Management of pain in elderly patients with cancer. *JAMA.* 1998; 279:1877-1882.

22. Todd KH, Deaton C, D'Adamo AP, Goe L. Ethnicity and analgesic practice. *Ann Emerg Med.* 2000;35:11-16.

23. Cleeland CS, Gonin R, Baez L, Loehrer P, Pandya KJ. Pain and treatment of pain in minority patients with cancer. *Ann Intern Med.* 1997;127:813-816.

24. Secretary's Task Force on Black and Minority Health. *Executive Summary.* Washington, DC: US Dept of Health and Human Services; August 1985. *Report of the Secretary's Task Force on Black and Minority Health;* vol I.

25. Secretary's Task Force on Black and Minority Health. *Crosscutting Issues in Minority Health.* Washington, DC: US Dept of Health and Human Services; August 1985. *Report of the Secretary's Task Force on Black and Minority Health;* vol II.

26. Secretary's Task Force on Black and Minority Health. *Cancer.* Washington, DC: US Dept of Health and Human Services; August 1985. *Report of the Secretary's Task Force on Black and Minority Health;* vol III.

27. Secretary's Task Force on Black and Minority Health. *Cardiovascular and Cerebrovascular Diseases.* Part 1 and Part 2. Washington, DC: US Dept of Health and Human Services; August 1985. *Report of the Secretary's Task Force on Black and Minority Health;* vol IV.

28. Secretary's Task Force on Black and Minority Health. *Homicide, Suicide and Unintentional Injuries.* Washington, DC: US Dept of Health and Human Services; August 1985. *Report of the Secretary's Task Force on Black and Minority Health;* vol V.

29. Secretary's Task Force on Black and Minority Health. *Infant Mortality and Low Birth Weight.* Washington, DC: US Dept of Health and Human Services; August 1985. *Report of the Secretary's Task Force on Black and Minority Health;* vol VI.

30. Secretary's Task Force on Black and Minority Health. *Chemical Dependency and Diabetes.* Washington, DC: US Dept of Health and Human Services; August 1985. *Report of the Secretary's Task Force on Black and Minority Health;* vol VII.

31. Secretary's Task Force on Black and Minority Health. *Hispanic Health Issues.* Washington, DC: US Dept of Health and Human Services; August 1985. *Report of the Secretary's Task Force on Black and Minority Health;* vol VIII.

32. Mort EA, Weissman JS, Epstein AM. Physician discretion and racial variation in the use of surgical procedures. *Arch Intern Med.* 1994;154:761-767.

33. Oddone EZ, Horner RD, Diers T, et al. Understanding racial variation in the use of carotid endarterectomy: the role of aversion to surgery. *J Natl Med Assoc.* 1998;90:25-33.

34. Schulman KA, Berlin JA, Harless W, et al. The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med.* 1999;340: 618-626.

35. Ayanian JZ, Cleary PD, Weissman JS, Epstein AM. The effect of patients' preferences on racial differences in access to renal transplantation. *N Engl J Med.* 1999;341:1661-1669.

36. Gittelsohn AM, Halpern J, Sanchez RL. Income, race, and surgery in Maryland. *Am J Public Health.* 1991;81:1435-1441.

37. Eisenberg JM, Williams SV. Cost containment and changing physicians' practice behavior: Can the fox learn to guard the chicken coop? *JAMA.* 1981;246:2195-2201.

38. Kosecoff J, Kanouse DE, Rogers WH, McCloskey L, Winslow CM, Brook RH. Effects of the National Institutes of Health Consensus Development Program on physician practice. *JAMA.* 1987;258:2708-2713.

39. Lomas J, Anderson GM, Domnick-Pierre K, Vayda E, Enkin MW, Hannah WJ. Do practice guidelines guide practice? *N Engl J Med.* 1989;321:1306-1311.

40. Browner WS, Baron RB, Solkowitz S, Adler LJ, Gullion DS. Physician management of hypercholesterolemia. A randomized trial of continuing medical education. *West J Med.* 1994;161:572-578.

41. Cabana MD, Rand CS, Powe NR, et al. Why don't physicians follow clinical practice guideline? A framework for improvement. *JAMA.* 1999;282:1458-1465.

42. Schectman JM, Kanwal NK, Schroth WS, Elinsky EG. The effect of an education and feedback intervention on group-model and network-model health maintenance organization physician prescribing behavior. *Med Care.* 1995;33:139-144.

43. Avorn J, Soumerai SB. Improving drug-therapy decisions through educational outreach: a randomized controlled trial of academically based 'detailing.' *N Engl J Med.* 1983;308:1457-1463.

44. Soumerai SB, Avorn J. Principles of educational outreach ('academic detailing') to improve clinical decision making. *JAMA.* 1990;263:549-556.

45. Anderson LM, Scrimshaw SC, Fullivoe MT, Fielding JE, Normand J, and the Task Force on Community Preventive Services. Culturally competent healthcare systems: a systemic review. *Am J Prev Med.* 2003;24(3S):68-79.

46. Tervalon M, Murray-Garcia J. Cultural humility versus cultural competence: a critical distinction in defining physician training outcomes in multicultural education. *J Health Care Poor Underserved.* 1998;9:117-125.

47. Masters D. Teaching and learning of cultural competence in medical school. *Contemp Issues Med Educ.* 1998;1(5):1-2.

48. Flores G. Culture and the patient-physician relationship: achieving cultural competency in health care. *J Pediatr.* 2000;136:14-23.

49. FitzSimmons E, Prost JH, Peniston S. Infant head molding: a cultural practice. *Arch Fam Med.* 1998;7:88-90.

50. US Department of Health and Human Services. *Healthy People 2010.* Washington, DC: US Dept of Health and Human Services; January 2000.

51. US Department of Health and Human Services. *Healthy People 2010.* Available at: http://www.health.gov/healthypeople/Leading health indications/LHI. Accessed June 29, 2004.

52. Foster WH. Reaching parity for minority medical students: a possibility or a pipe dream? *J Natl Med Assoc.* 1996;88:17-21.

53. Petersdorf RG. Not a choice, an obligation. In: *Proceedings of the 102nd Annual Meeting of the Association of American Medical Colleges.* Washington, DC: Association of American Medical Colleges; 1991:1-13.

54. Jonas HS, Etzel SI, Brazanski B. Education programs in US medical schools, 1993-1994. *JAMA.* 1994;272:694-701.

55. Geiger HJ. Preparing primary care physicians for practice in underserved inner city areas. *Pub Health Rep.* 1980;95:32-37.

56. Stewart AL, Napoles-Springer A, Perez-Stable EJ, et al. Interpersonal processes of care in diverse populations. *Milbank Q.* 1999;77(3):305-339, 274.

57. Lum CK, Koreman SG. Cultural sensitivity training in US medical schools. *Acad Med.* 1994;69:239-241.

58. Pachter LM. Culture and clinical care: folk illness beliefs and behaviors and their implications for health care delivery. *JAMA.* 1994;271:690-694.

59. Lin K-M, Poland RE, Lesser IM. Ethnicity and psychopharmacology. *Culture, Medicine & Psychiatry.* 1986;10:151-165.

60. Van Ryn M, Burke J. The effect of patient race and socio-economic status on physicians' perceptions of patients. *Soc Sci Med.* 2000;50:813-828.

61. Flores G, Gee D, Kastner B. The teaching of cultural issues in US and Canadian medical schools. *Acad Med.* 2000;75:451-455.

62. *Health Gains for Black and Minority Ethnic Communities.* 1st Report of an International Conference between the UK and US. Chichester, West Suffolk, UK: St. Richards Press, LTD; 1998.

63. *Health Care of Racial and Ethnic Minorities.* 2nd Report on the UK and US Collaborative Initiative on Racial and Ethnic Health. Rockville, Md: Office of Minority Health; US Dept of Health and Human Services; 2000.