



**DISPARITIES IN PATIENT EXPERIENCES,
HEALTH CARE PROCESSES, AND OUTCOMES:
THE ROLE OF PATIENT-PROVIDER RACIAL,
ETHNIC, AND LANGUAGE CONCORDANCE**

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ABSTRACT: Ethnic minorities are poorly represented among physicians and other health professionals. In what is called “race-discordant” relationships, patients from ethnic groups frequently are treated by professionals from a different ethnic background. The research reviewed here documents ongoing racial and ethnic disparities in health care and links patient-physician race and ethnic concordance with higher patient satisfaction and better health care processes. Based on this research, the authors issue the following recommendations: 1) health policy should be revised to encourage workforce diversity by funding programs that support the recruitment of minority students and medical faculty; 2) health systems should optimize their providers’ ability to establish rapport with minority patients to improve clinical practice and health care delivery; 3) cultural competency training should be incorporated into the education of health professionals; and 4) future research should provide additional insight into the mechanisms by which concordance of patient and physician race, ethnicity, and language influences processes and outcomes of care.

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EXECUTIVE SUMMARY

While Hispanics, African Americans, and Native Americans represent more than 25 percent of the U.S. population, they comprise fewer than 6 percent of doctors and 9 percent of nurses. Minority patients frequently are treated by professionals from a different ethnic background in so-called race-discordant relationships. Many research studies provide a strong rationale for increasing diversity among health professionals. They document ongoing racial and ethnic disparities in health care and also link race or ethnic concordance in the patient-physician relationship to health care processes and outcomes. This literature on ethnic discordance has implications for health policy, health care delivery, medical education, and future research.

Based on this research, the authors recommend that health policy be revised to encourage workforce diversity by funding programs that support the recruitment of minority students and medical faculty. To improve clinical practice and health care delivery, health systems should optimize their providers' ability to establish rapport with minority patients. Cultural competency training should be incorporated into the education of health professionals. Finally, future research should provide additional insight into the mechanisms by which concordance of patient and physician race, ethnicity, and language affects processes and outcomes of care.

Many studies of patient-provider race concordance grew out of the debate over whether increasing the number of ethnic minority health professionals would reduce health care disparities for ethnic minorities. For 20 years, this debate has largely been informed by a significant body of literature that examined the role of ethnic minority physicians in caring for underserved populations. This report describes the literature on patient-provider concordance with regard to race, ethnicity, and language. Most of the studies use data collected from primary care physicians or patients who report receiving care from primary care physicians. The authors review the literature on patient-provider concordance with regard to race and ethnicity and compare and contrast these findings to the literature on patient-provider language concordance. To contextualize these studies in the field of health care disparities, they present a conceptual framework for the relation of race, ethnic, and language concordance with health care processes and outcomes.

Recent studies on how patients rate the quality of care they receive from physicians have described differences between race-concordant and race-discordant patient-physician relationships. Patients in race-concordant relationships with their physicians rated their physicians' decision-making styles as significantly more participatory and their care more satisfactory overall than patients in race-discordant relationships.

A Commonwealth Fund–supported study used measures of actual communication behaviors of physicians and patients to compare patient–physician communication in race–concordant and race–discordant relationships, and examined whether communication behaviors explain differences in patient ratings of satisfaction and participatory decision–making (Cooper 2003). The study found that race–concordant visits were longer and had higher ratings of patient positive affect than race–discordant visits. Patients in race–concordant visits were also more satisfied, and rated their physicians as more participatory, regardless of the communication that occurred during the visit. The authors concluded that because the association between race concordance and higher patient ratings of care is independent of patient–centered communication, other factors such as patient and physician attitudes may mediate the relationship. They also suggested that the best strategies to improve health care experiences for ethnic minorities are to increase ethnic diversity among physicians and engender trust and comfort between patients and physicians of different races.

Few studies have examined the impact of patient–physician race concordance on health service utilization or health outcomes. There is reasonable evidence that patient–provider race concordance is associated with better patient ratings of care among adult primary care patients. There is some evidence that race concordance is associated with examples of better patient–physician communication, such as longer visits. There is also limited evidence that race concordance is associated with better health outcomes, as only one study examined this issue. It found that clinicians in race discordant relationships gave patients lower ratings of clinical improvement in only one of 15 health outcomes (Rosenheck 1995). Regardless of whether race concordance is linked to health outcomes, there is support for the notion that increasing racial and ethnic diversity among physicians will provide ethnic minority patients with more choices and better experiences with care processes, including positive affect, longer visit duration, higher patient satisfaction, and better participation in care.

Studies of concordance of other sociocultural indicators—such as language and the limited ability to speak English—may provide insight into the mechanisms of race concordance. The literature focuses on how patient–provider language concordance is related to several factors, including the use of interpreter services and health outcomes for patients with limited proficiency in English.

Collectively, this research lays the foundation for interventions that target the improvement of patient–provider relationships across racial and ethnic lines throughout the health care system. These interventions are an important strategy for eliminating racial and ethnic health disparities.

DISPARITIES IN PATIENT EXPERIENCES, HEALTH CARE PROCESSES, AND OUTCOMES: THE ROLE OF PATIENT-PROVIDER RACIAL, ETHNIC, AND LANGUAGE CONCORDANCE

Introduction

There is a compelling body of evidence that documents racial and ethnic disparities in quality of care and health outcomes. Ethnic minority patients report less involvement in care, lower levels of trust in providers, and less satisfaction with care (Cooper-Patrick 1999, Doesher 2000, Boulware 2003, Saha 1999). The Commonwealth Fund's 2001 Health Care Quality Survey reported that compared to white patients, ethnic minority patients obtaining health care experience greater difficulty with communication and report being treated with disrespect more frequently (Collins 2002). The Institute of Medicine's report *Unequal Treatment* suggested that several aspects of the patient-physician relationship contribute to racial and ethnic disparities in health care (IOM 2003). Hispanics, African Americans, and Native Americans are under-represented among physicians and other health professionals. Accordingly, patients from these ethnic minority groups frequently are treated by professionals from a different ethnic background in what is called "race-discordant" relationships. Yet relatively few studies of disparity have focused on the potential role of this discordance between patients and providers in influencing disparities in health care quality.

The purpose of this report is to: 1) review the literature on the role of ethnic minority physicians in caring for ethnic minority and underserved populations; 2) describe studies that link patient-physician race/ethnic concordance with patient ratings of care, health care processes, and health outcomes; 3) compare and contrast results of studies of patient-provider language concordance (another sociocultural domain) with those of patient-provider race concordance; and 4) discuss implications of this work for health policy with regard to workforce diversity; clinical practice and health care delivery; education of health professionals; and future research.

Role of Ethnic Minority Physicians in Caring for Underserved Populations

Most studies of patient-provider race concordance grew out of the debate over whether increasing the numbers of ethnic minority health professionals would ameliorate health care disparities for ethnic minority individuals. Over the last two decades, this debate has been largely informed by a significant body of literature that examined the role of ethnic minority physicians in caring for underserved populations. These studies have consistently shown that minority physicians are more likely to care for patients of their own race or ethnic group; practice in areas that are underserved or have health care manpower

shortages; care for poor patients, patients with Medicaid insurance, or no health insurance; and care for patients who report poor health status and use more acute medical services such as emergency rooms and hospital care (Keith 1985, Moy and Bartman 1995, Komaromy et al 1996, Cantor et al 1996, Xu 1997, Brotherton 2000, Murray-Garcia 2001, Rabinowitz 2000). These findings are true for physicians in practice and those in training, and for physicians caring for adults, women, and children. Most of the studies use data collected from primary care physicians or patients who report receiving care from primary care physicians. A summary of selected studies is shown in Table 1.

Table 1. Ethnic Minority Physicians and Care of Underserved Populations: Selected Studies

Author, year	Study population	Main Findings
Keith, 1985	UCLA medical school class of 1975	Minority physicians are more likely to: choose primary care specialties serve patients of their own ethnic group serve Medicaid recipients work in health manpower shortage areas
Moy & Bartman, 1995	Nationally representative sample of 15,000 U.S. adults	Individuals receiving care from minority physicians were more likely to: be ethnic minorities be low income have Medicaid or no insurance report worse health status and more acute service use
Komaromy et al., 1996	Communities in California 718 primary care physicians in California	Communities with high proportions of minority residents more likely to have shortage of physicians Black and Hispanic physicians care for more black and Hispanic patients and practice in areas where the percentage of black and Hispanic residents is higher than areas where majority physicians practice. Minority physicians care for more Medicaid and uninsured patients than other physicians
Cantor et al., 1996	Physicians from several states	Minority and women physicians are more likely to serve the following patient populations: minorities the poor Medicaid recipients
Xu et al., 1997	1581 generalist physicians from class of 1983 or 1984	Generalist physicians from underrepresented minorities (URMs) more likely to serve medically underserved populations
Brotherton et al., 1996	1044 pediatricians	URM pediatricians more likely to care for: minority patients Medicaid-insured patients uninsured patients

Author, year	Study population	Main Findings
Murray-Garcia et al, 2001	Patients of pediatric residents	Minority physicians more likely to serve patients of their own ethnicity regardless of language proficiencies
Rabinowitz, 2000	2955 generalist physicians who graduated in 1983 or 1984	Predictors of providing care to underserved populations include: Being URM Having participated in National Health Services Corps Having a strong interest in serving underserved prior to medical school Growing up in an underserved area

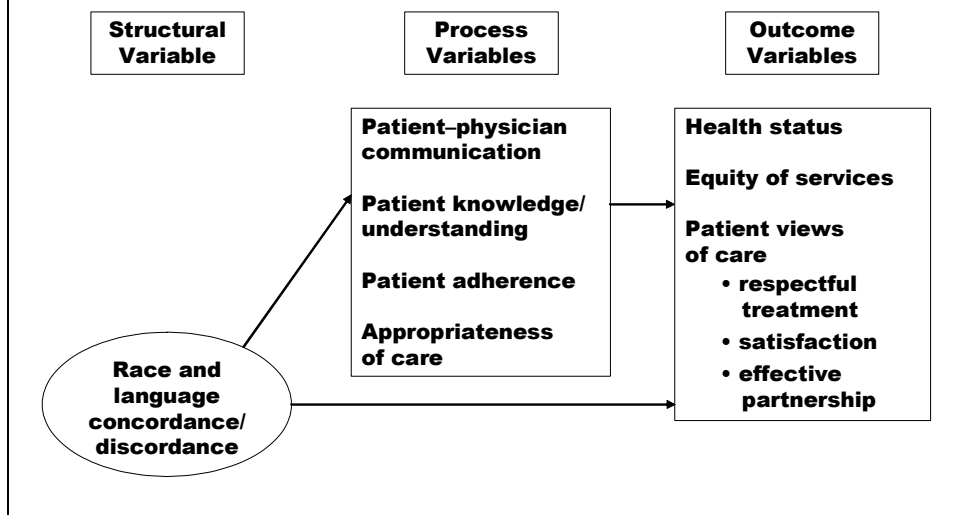
Several groups of studies provide a strong rationale for increasing diversity among health professionals. These studies document ongoing racial and ethnic disparities in health care; describe the role of ethnic minority physicians in caring for underserved populations; and link race or ethnic concordance in the patient–physician relationship to health care processes and outcomes. The remainder of this policy brief is devoted to describing the literature on patient–provider concordance with regard to race, ethnicity, and language. It then discusses the implications of this literature for health policy, health care delivery, medical education, and future research.

Defining Concordance in the Patient–Physician Relationship

The terms “matching,” “concordance,” and “congruence” have been used to indicate shared identities between patients and providers or between patients and researchers (Flaskerud 1990, Sawyer 1995). We define concordance here as “a state of agreement or harmony.” There are several domains across which patients and providers may have concordance: gender, social class, age, ethnicity, race, language, sexual orientation, beliefs about roles, beliefs about health and illness, values, and actual health care decisions.

In the next several sections of this paper, we review the literature on patient–provider concordance with regard to race and ethnicity and compare and contrast these findings to the literature on patient–provider language concordance. In order to contextualize these studies in the field of health care disparities, we present a conceptual framework for the relation of race, ethnic, and language concordance with health care processes and outcomes (Figure 1).

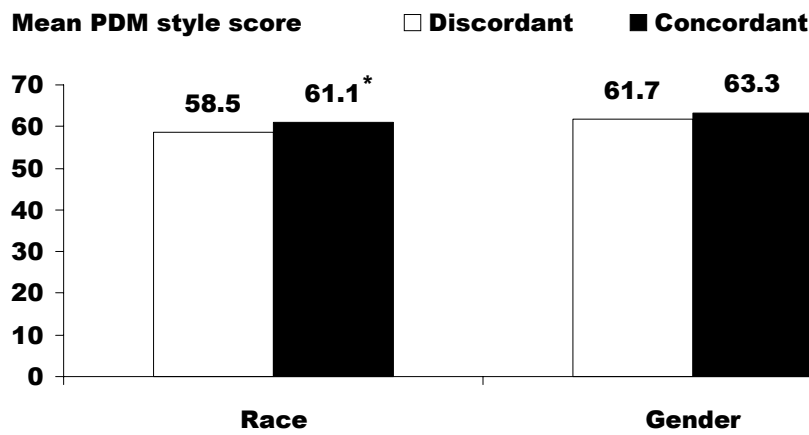
Figure 1. Does race and/or language concordance between physicians and patients improve processes and outcomes of health care?



Race Concordance and Patient Ratings of Care Among Adults

Recent studies on how patients rate the quality of care they receive from physicians have described differences between race-concordant and race-discordant patient-physician relationships. In a telephone survey of 1,816 adult managed care enrollees attending primary care practices in a large urban area, researchers examined the association between race or ethnic concordance or discordance and patient ratings of physicians' participatory decision-making style (Cooper-Patrick 1999). Patients in race-concordant relationships with their physicians rated their physicians' participatory decision-making styles as significantly more participatory than patients in race-discordant relationships (Figure 2). Interestingly, participatory decision-making was strongly and significantly related to satisfaction across all racial groups, suggesting that patients of all racial and ethnic groups would like physicians to allow them to participate in medical decision-making.

Figure 2. Patients in race-concordant relationships rate their physicians as more participatory.



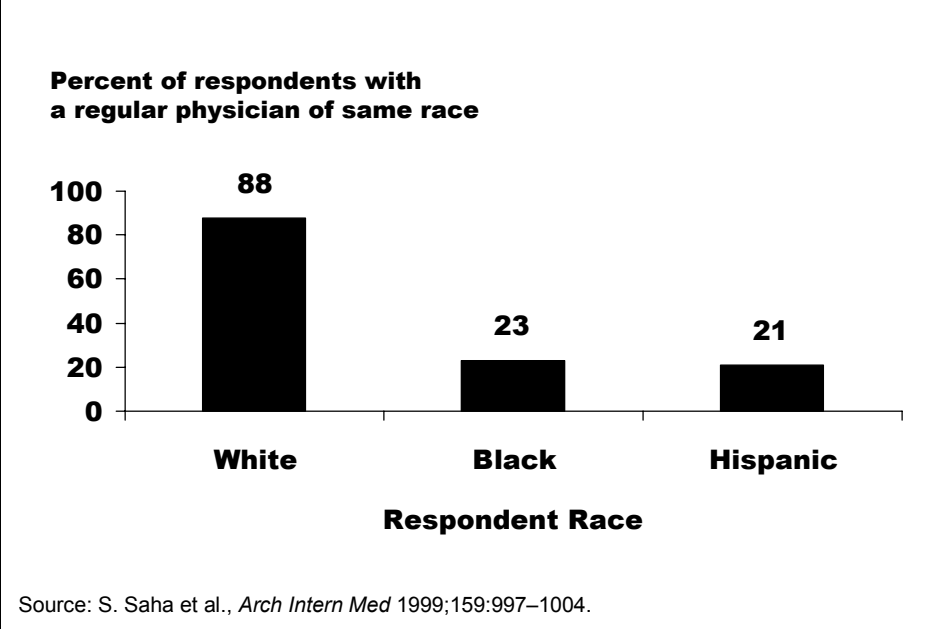
* $p = 0.02$

Note: Adjusted for patients' age, gender, education, marital status, health status, length of the patient-physician relationship, physician gender (race-concordance analysis) and physician race (gender-concordance analysis).

Source: Modified from L. Cooper-Patrick et al., *JAMA* 1999;282:583-89.

In another study of the impact of racial concordance on patients' ratings of care, researchers used data from the 1994 Commonwealth Fund's Minority Health Survey, a nationwide telephone survey of 2,201 white, black, and Hispanic adults who reported having a regular physician (Saha 1999). The Hispanic respondents were primarily of Mexican and Puerto Rican descent, and the majority of them were born in the United States. Among respondents with a regular physician, 88 percent of white respondents saw white physicians, 23 percent of black respondents saw black physicians and 21 percent of Hispanic respondents saw Hispanic physicians (Figure 3). Black respondents with black physicians were more likely than those with non-black physicians to rate their physicians as excellent overall, and excellent at treating them with respect, explaining problems, listening, and being accessible to them. Hispanic patients with Hispanic physicians were more likely than those with non-Hispanic physicians to be very satisfied with the health care overall, but not more likely to rate their physicians as excellent.

Figure 3. Minorities are less likely than whites to have racial concordance with their regular physician.



In the Detroit Area Study, researchers assessed the role of social distance or closeness (i.e., the degree to which patients and providers have shared social characteristics such as race and socioeconomic status) from health care providers in accounting for whites' higher rating of health care providers. The study showed that patient-provider racial concordance accounted for the gaps in ratings of respect and satisfaction between whites and African Americans (Malat 2001).

Patient Preferences for Racial and Ethnic Concordant Physicians

Studies of patient preferences for race or language concordant providers may provide additional insights, but we are only aware of two studies that have explicitly examined patient preferences for racial/ethnic concordant physicians. One study suggests that patients prefer ethnic-concordant physicians primarily because of concerns about language and empathic treatment (Garcia 2003). Similarly, another study found that black and Hispanic Americans sought care from physicians of their own race because of personal preference and language, not solely because of geographic accessibility (Saha 2000).

Race Concordance and Parent Reports of Health Care of Children

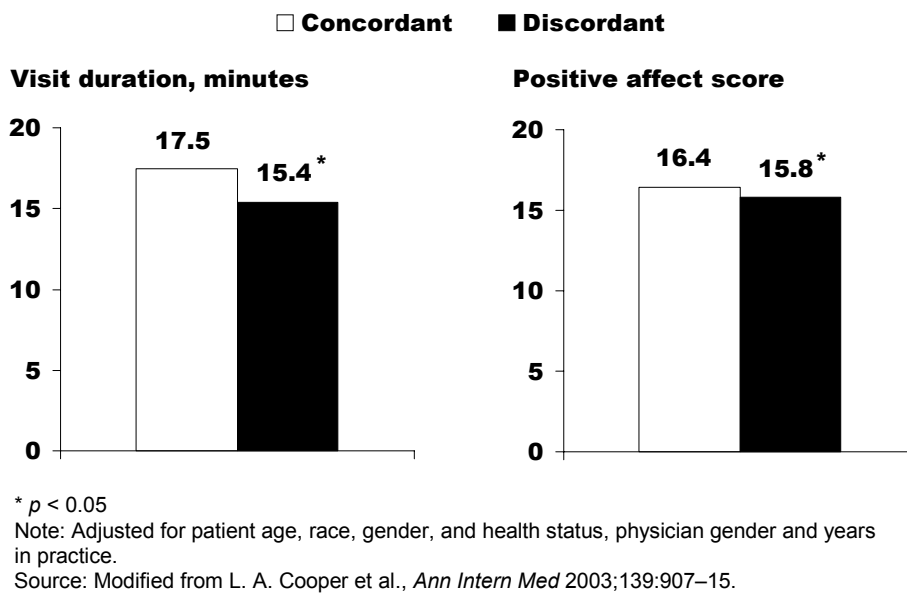
In a recent study, researchers assessed the relationship of patient-provider race concordance with processes of care for children. Stevens and colleagues completed telephone interviews with a random, cross-sectional sample of 413 parents of elementary school children, aged 5 to 12 years, enrolled in a single large school district in Southern

California. Parents reported on their children's primary care experiences, and the responses from children in race concordant and discordant patient-provider relationships were compared. Minority parents generally reported poorer experiences than whites in several domains of primary care. But in contrast to studies among adults, patient-provider race/ethnicity concordance was not associated with parent reports of primary care experiences in this sample of children. The authors concluded that it is possible that the provider biases or patient expectations that contribute to disparities in care for adults are attenuated in the relationships involving children (Stevens 2003).

Race Concordance and Patient-Physician Communication

A Commonwealth Fund-supported study is one of the first to delve deeper into the underlying mechanisms of higher adult patient ratings of care associated with race concordance. In this study, researchers used measures of actual communication behaviors of physicians and patients to compare patient-physician communication in race-concordant and race-discordant relationships and examined whether communication behaviors explain differences in patient ratings of satisfaction and participatory decision-making (Cooper 2003). Cooper and colleagues conducted a brief cohort study in 16 urban primary care practices in the Baltimore and Washington, D.C., metropolitan area. Patients included 252 adults (142 African American, 110 white) receiving care from 31 physicians (18 African American, 13 Caucasian). The researchers used pre-visit and post-visit surveys to measure patient and physician demographic factors, and patient ratings of satisfaction and physicians' participatory decision-making. They also audio-taped the primary care visits and measured patient-centered communication behaviors. The study found that race-concordant visits were longer (+2.15 minutes, 95% CI 0.60-3.71) and had higher ratings of patient positive affect (+0.55 points, 95% CI 0.04-1.05) than race-discordant visits (Figure 4). Patients in race-concordant visits were also more satisfied, and rated their physicians as more participatory (+8.42 points, 95% CI 3.23-13.60). However, audiotape measures of patient-centered communication behaviors did not explain differences in participatory decision-making or satisfaction between race-concordant and discordant visits.

Figure 4. Patients in race-concordant relationships have longer visits with more positive patient affect.



The authors concluded that because the association between race concordance and higher patient ratings of care is independent of patient-centered communication, other factors such as patient and physician attitudes may mediate the relationship. More evidence may become available regarding the mechanisms of this relationship and the effectiveness of intercultural communication skills programs. Until then, the authors suggest that probably the best strategies to improve health care experiences for ethnic minorities are to increase ethnic diversity among physicians and engender trust and comfort between patients and physicians of different races. These are not easy goals to achieve, and will certainly require continued effort and action by policy-makers and educators.

In a study of 3,743 white and 509 African American outpatients visiting 138 physicians in the Midwestern United States, Oliver and colleagues provided additional evidence that patient-provider race discordance is associated with differences in providers' use of time during clinical encounters. Specifically, they found that the physicians (who were all Caucasian) spent less time with African American patients than with white patients on planning treatment, providing health education, chatting, assessing patients' health knowledge, and answering questions (Oliver, 2001).

There is evidence that outside the United States as well, ethnic discordance in the patient-physician relationship affects communication and patient reports of care. In a study conducted in the Netherlands, researchers studied the relation of ethnic concordance with

patient–provider communication and ratings of care. As with the findings of Cooper and colleagues, the research showed that patient–provider ethnic discordance was associated with less social talk and less positive physician affect, lower patient ratings of mutual understanding, satisfaction with patient–physician communication and self-reported compliance, and higher rates of patient-reported problems with the physician (van Wieringen 2002).

Finally, we identified one study of race concordance and communication between pediatricians and parents of infants in the first year of life. This study used audiotapes of well baby visits to show that communication problems attributed to race discordance diminish over time when there is continuity in the patient–provider relationship. Specifically, this study showed that parents in race-discordant relationships initially disclosed psychosocial topics to their child’s physician at lower rates than parents in race-concordant relationships, but this improved over one year (Wissow 2003).

Race Concordance, Technical Quality of Care, and Health Outcomes

Few studies have examined the impact of patient–physician race concordance on health service utilization; health outcomes; or on quality of care domains other than patient-centeredness (for example, on the technical quality of providers and the appropriateness of care). These studies either examined limited settings or populations, or focused on specific clinical conditions. One study examined the relationship between race concordance and the test-ordering behavior of physicians in hospital settings. Using data from the Cooperative Cardiovascular Project, a study of Medicare beneficiaries hospitalized for acute myocardial infarction in 1994–1995, researchers found that black patients had lower rates of catheterization than white patients within 60 days of acute myocardial infarction, regardless of whether their physician was white or black (Chen 2001).

Another study explored the effect of the pairing of veterans’ and clinicians’ race on the process and outcome of treatment for war-related post-traumatic stress disorder (PTSD). Data was obtained on the assessment of 4,726 white and black male veterans during admission to the PTSD Clinical Teams program of the Department of Veterans Affairs, as well as on the race and other characteristics of their 315 primary clinicians. Whether treated by black or white clinicians, black veterans had poorer attendance than white veterans, seemed less committed to treatment, received more treatment for substance abuse, were less likely to be prescribed antidepressant medications, and showed less improvement in the control of violent behavior. Pairing of white clinicians with black veterans was associated with lower program participation on four of the 24 measures, and with lower improvement ratings on one of 15 measures (Rosenheck 1995).

In summary, there is reasonable evidence that patient–provider race concordance is associated with better patient ratings of care among adult primary care patients. There also is some evidence that race concordance is associated with examples of better patient–physician communication, such as longer visits with more positive patient and physician emotional tone. We are only aware of one study that examined the relation of race concordance to patient adherence; this study showed a positive relationship, but adherence was assessed only by patient self-report (van Wieringen 2002).

Studies that link race concordance to improved health status and to care that is free of disparities would make a compelling case for removing racial gaps. Relatively few studies, however, link patient–provider race concordance to receiving health services or quality of care domains other than patient-centeredness; these studies show inconsistent results. There is also limited evidence that race concordance is associated with better health outcomes, as we are only aware of one study that examined this issue. It found that clinicians in race discordant relationships gave patients lower ratings of clinical improvement in only one of 15 health outcomes (Rosenheck 1995).

Regardless of whether race concordance is linked to health outcomes, there is support for the notion that increasing racial and ethnic diversity among physicians will provide ethnic minority patients with more choices and better experiences with care processes, including positive affect, longer visit duration, higher patient satisfaction, and better participation in care. Physicians and patients believe visit duration is important to higher quality of care (Wiggers 1997). Positive affect and participatory decision-making, both associated with race concordance, have been linked to patient adherence, continuity of care and better clinical outcomes (Hall 1998, Hall 2002, Kaplan 1996, Stewart 1995). The longitudinal study of mothers and newborns, described earlier, suggests that some of race discordance’s negative impact on communication can be ameliorated by ongoing, continuous relationships (Wisow 2003).

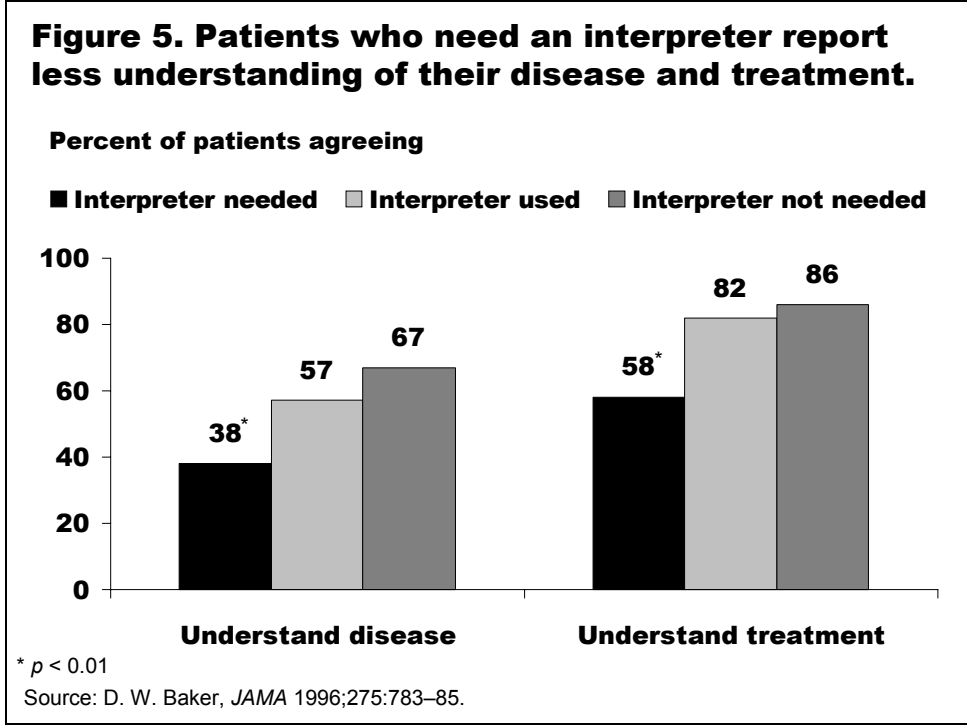
Language Concordance

Studies of concordance of other sociocultural indicators may provide insight into the mechanisms of race concordance and how it affects patient ratings of care, patient–provider communication, other health care processes and health outcomes. One example of a sociocultural indicator is language. About 19 million people in the United States speak limited English. Language barriers consistently have had a negative impact on health care processes and patient ratings of care (Todd 1993, David 1998, Enguidanos 1997, Crane 1997, Baker 1998, Carrasquillo 1999, Derose 2000). The literature focuses on the relation of three factors—patient–provider language concordance, use of interpreter services, and

physician language training—with patient ratings of care, health care processes, and health outcomes for patients with limited English proficiency.

One study showed that Hispanic patients who were proficient in English were more likely to have physicians explain the side effects of medication to them and were more likely to be satisfied with their care than patients who spoke limited English. Patients less proficient in English were more likely to have had a mammogram in the preceding two years; the authors speculated that test ordering may replace dialogue in language-discordant encounters (David 1998).

In a study of native Spanish-speaking and English-speaking Latino patients presenting to a public hospital with non-urgent problems, patients who said they did not need an interpreter rated their understanding of their disease as good to excellent 67 percent of the time, compared with 57 percent of those who used an interpreter, and 38 percent of those who thought an interpreter should have been used ($P < .001$). Ranked by understanding of treatment, the figures were 86 percent, 82 percent, and 58 percent, respectively ($P < .001$) (Figure 5) (Baker 1996). When the ability to understand diagnosis and treatment was measured objectively, however, the differences among these groups were smaller and generally not statistically significant. The authors concluded that language concordance and the use of an interpreter greatly affected patients' perception of their disease, and yet a high proportion of Latino patients, regardless of self-reported language ability, had poor knowledge of their diagnosis and recommended treatment (Baker 1996).

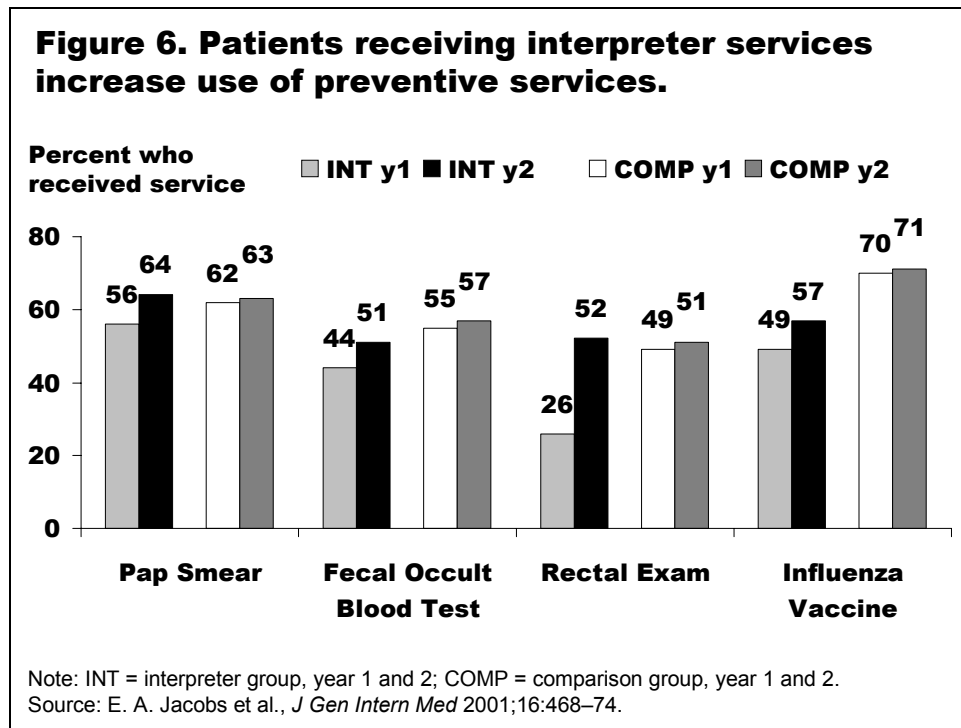


Language concordance between patient and physician was found to significantly affect appointment-keeping and improved medication adherence among Latino outpatients with asthma (Manson 1988). In another study, Spanish-speaking Latinos with language concordant physicians asked more questions and had greater recall of recommendations than their counterparts seen by non-Spanish speaking clinicians (Seijo 1991).

Several studies explore the potential role of trained interpreters in eliminating communication gaps for patients in language-discordant relationships with their providers. One study of well baby care visits was a randomized clinical trial of two language services: “proximate-consecutive” interpretation (control) and remote-simultaneous” interpretation (experimental). In remote-simultaneous interpretation, the interpreters are linked, through standard communication wires, from a remote site to headsets worn by the clinician and patient. In contrast, proximate-consecutive interpretation is a traditional method that involves an interpreter being physically present at the interview, interpreting consecutively. Researchers found fewer inaccuracies in the utterances of the physician and mother in the experimental visits compared with the control visits. Mothers and physicians who used the remote-simultaneous service rated the service significantly better than mothers and physicians who used the proximate-consecutive interpretation service. The authors concluded that using remote-simultaneous interpretation to improve the quality of communication in language-discordant encounters held promise for enhancing the

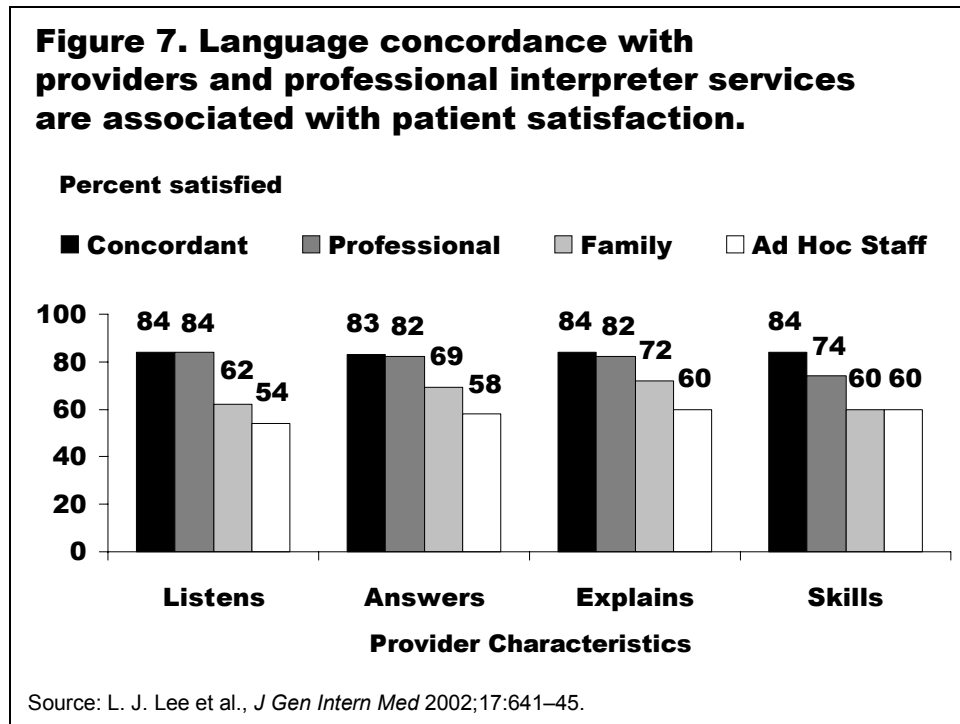
delivery of medical care to non-English-speaking patients in the United States (Hornberger 1996).

In a two-year study of 4,380 adults continuously enrolled in a staff model health maintenance organization, researchers examined whether professional interpreter services increased the delivery of health care to patients who spoke limited English. Study subjects either used comprehensive interpreter services or were randomly selected into a comparison group composed of 10 percent of all other eligible adults. The authors found that the use of several clinical services increased significantly in the interpreter group compared to the control group. After professional interpreter services were introduced, there was a significant reduction in disparities in the rates of fecal occult blood testing, rectal exams, and flu immunization between Portuguese and Spanish-speaking patients and a comparison group. The authors concluded that professional interpreter services can increase delivery of health care to limited-English-speaking patients (Figure 6) (Jacobs 2001).



In yet another study of interpreter services involving English- and Spanish-speaking adult patients presenting for acute care of non-emergency medical problems, researchers examined the effect of Spanish interpretation methods on patient satisfaction (Lee 2002). Identical overall satisfaction with a visit was reported by both English-speaking patients and by “language-concordant” patients (defined as Spanish-speaking patients seen

by Spanish-speaking providers and patients using AT&T telephone interpreters). But patients who used family or ad hoc interpreters were significantly less satisfied (Figure 7). The authors concluded that by avoiding the use of untrained interpreters, clinics that served a large population of Spanish-speaking patients could enhance patient satisfaction.



One study of pediatricians and their patients in a hospital outpatient clinic examined the frequency, type, and potential clinical consequences of errors in medical interpretation (Flores 2003). Researchers audio-taped and transcribed pediatric encounters in which a Spanish interpreter was used. For each transcript, they categorized each error in medical interpretation and determined whether errors had a potential clinical consequence. Almost 400 interpreter errors were noted, with an average of 31 errors per encounter. The most common error type was omission (52%), followed by false fluency (16%), substitution (13%), editorialization (10%), and addition (8%). More than half of all errors had potential clinical consequences. Errors committed by ad hoc interpreters were significantly more likely to be errors of potential clinical consequence than those committed by hospital interpreters. Errors of clinical consequence included: 1) omitting questions about drug allergies; 2) omitting instructions on the dose, frequency, and duration of antibiotics and rehydration fluids; 3) adding that hydrocortisone cream must be applied to the entire body, instead of only to a facial rash; 4) instructing a mother not to answer personal questions; 5) omitting that a child was already swabbed for a stool culture; and 6) instructing a mother to put amoxicillin in both ears for treatment of otitis media.

The authors conclude that errors in medical interpretation are common, that errors of omissions are most frequent, that most errors have potential clinical consequences, and those committed by ad hoc interpreters are significantly more likely to have potential clinical consequences than those committed by hospital interpreters.

We were only able to identify one study that examined the impact of physician language training in Spanish on patient reports of care. Mazor and colleagues studied whether a 10-week course in medical Spanish language and cultural awareness that was given to pediatric emergency department physicians increased the patient satisfaction of families that only spoke Spanish. They found that physicians used a professional interpreter less often in the post-intervention period; post-intervention families also were significantly more likely to strongly agree that “the physician was concerned about my child,” “made me feel comfortable,” “was respectful,” and “listened to what I said.”

Finally, we identified only one study that examined the relation of patient–physician language concordance with patient health status. Perez–Stable and colleagues conducted a study of 226 general medicine patients who had hypertension or diabetes. They found that physician–patient language concordance was significantly tied to better functioning on each of four overall self-reported health status scales (physical functioning, psychological well-being, health perceptions, and pain) and to six of 10 subscales (anxiety, depression, current health, health distress, effects of pain, and pain severity) (Perez–Stable 1997). In this study, however, language concordance was not significantly associated with patient satisfaction or health service utilization.

Do Language and Race Concordance Share Common Mechanisms?

Studies of patient–provider language concordance suggest that shared language background, use of interpreter services, and language training for health professionals are promising strategies for improving the quality of care and lowering disparities in care for patients who speak limited English. The findings from studies of race concordant patient–provider relationships are similarly intriguing. Improved communication has been more clearly linked to language concordance than to race or ethnic concordance. Better patient ratings of interpersonal care in language concordant relationships, however, may share similar mechanisms with better ratings of care in race–concordant relationships. Potential explanations of the higher patient ratings of care in race–concordant patient–physician relationships include more shared cultural values, beliefs, and life experiences, as well as physicians’ demonstration of greater cultural sensitivity and empathy regarding the needs of their patients.

Conclusions and Recommendations

In the section below, we describe the implications of race and language concordance studies for health policy regarding workforce diversity; clinical practice and health care delivery; the education of health professionals; and future research.

Health Policy Regarding Workforce Diversity. While African Americans, Hispanic Americans, and Native Americans represent more than 25 percent of the U.S. population, they comprise fewer than 9 percent of nurses, 6 percent of physicians, and only 5 percent of dentists. As the U.S. population becomes increasingly ethnically diverse, a variety of efforts are being initiated to create a more ethnically diverse health care workforce that reflects that diversity. The literature on race and language concordance can help to inform these efforts. There already is strong evidence that ethnic minority physicians are more likely to provide care for ethnic minority and socioeconomically disadvantaged patients. There is a strong link between race and ethnic concordance (and language concordance) and the quality of patient–physician communication, other health care processes, and some patient outcomes. This link makes it all the more important to increase ethnic diversity among health professionals, enabling ethnic minorities to have improved access to care and better experiences with health care.

Federal funding should be provided to support the recruitment and retention of students and medical faculty from underrepresented minorities, and to encourage physicians from diverse backgrounds to practice in medically underserved urban and rural areas. This funding can be channeled through the National Institutes of Health (career development awards for underrepresented minorities), the Indian Health Service, the Centers for Disease Control Office of Minority Health, and the Health Services and Resources Administration (Title VII and VIII Health Professions Training Grants, National Health Services Corps, Centers of Excellence Program). These programs should include, but not be limited to, scholarship and loan repayment programs and institutional resources to increase diversity. Programs should include outreach, mentoring, and tutoring at all educational levels—including elementary and high school and college—to encourage students from underrepresented minorities to pursue careers in science and health. Federal and state legislation should support the consideration of race and ethnicity in determining admission to institutions of higher education.

Clinical Practice and Health Care Delivery. Studies of race concordance between patients and physicians have important implications for organizational and health system interventions that reduce racial and ethnic health care disparities. We recommend that health care system administrators organize the delivery of services to optimize providers’

ability to establish rapport and continuity in their relationships with ethnic minority patients. Such changes might include the provision of adequate time and appropriate scheduling of follow-up visits for patients; incentives for providers to deliver high quality care to ethnic minority patients; and professional interpreter services to reduce medical errors, improve quality of preventive care, and improve patient ratings of care and health status. Health plans that receive federal funding and that serve many patients with limited English proficiency should cover the costs of these interpreter services.

Education of Health Professionals. Studies of race and ethnic concordance identify several important areas that should be included in provider cultural competence training programs. These areas are: communication skills (relationship-building through establishment of rapport, handling of emotional issues, and incorporation of shared decision-making skills); language skills (through use of interpreters and/or language training); and awareness of biases and stereotypes (as manifested by less positive affect in race-discordant relationships). Cultural competency training should be incorporated into the education and professional development of health care professionals at all levels of training. Specifically, medical schools and residency programs should make curricular changes that ensure students and house staff acquire the appropriate knowledge, attitudes and skills. Organizations such as the American Association of Medical Colleges and accreditation bodies (LCME and AGGME) have already established educational objectives related to cultural competence. We recommend, however, that these organizations work together with medical educators and researchers to develop and disseminate guidelines for educational objectives, teaching strategies and curricular content areas. These guidelines should be used consistently in implementing and evaluating cultural competence training programs. Practicing physicians seeking certification and recertification by specialty boards should be required to take continuing medical education programs that incorporate cultural competence training. Professional societies should provide opportunities for this training at local, regional, and national meetings.

Research. Finally, the studies described in this report have many implications for future research. They lend a deeper understanding of the nature of race-, ethnic-, and language-concordant relationships—including the communication that occurs in these clinical encounters. This knowledge will help to inform researchers who are trying to further conceptualize cultural and linguistic competence, as well as those who are developing interventions to eliminate racial and ethnic disparities in health care. Congress should appropriate funds for the National Institutes of Health and the Agency for Healthcare Research and Quality to support more research in the following areas:

- 1) studies of how health care processes and outcomes are influenced by patient-physician

communication and relationships across diverse racial and ethnic groups, including African American, Latino, and Asian American; 2) studies of patient and physician attitudes and preferences toward one another, and with regard to race, ethnicity, and language; and 3) studies of how ethnic minority patients interact with health care providers and staff other than physicians.

This work may provide additional insight into the mechanisms by which concordance of patient and physician race, ethnicity, and language impacts upon processes and outcomes of care. This work will also lay the foundation for interventions that target the improvement of patient–provider relationships across racial and ethnic lines throughout the health care system as an important strategy for eliminating racial and ethnic health disparities.

REFERENCES

- Baker DW, Hayes R, Fortier JP. "Interpreter Use and Satisfaction with Interpersonal Aspects of Care for Spanish-Speaking Patients." *Medical Care* 1998 Oct; 36(10): 1461-70.
- Baker DW, Parker RM, Williams MV, Coates WC, Pitkin K. "Use and Effectiveness of Interpreters in an Emergency Department." *Journal of the American Medical Association* 1996 Mar 13; 275(10): 783-88.
- Boulware LE, Cooper LA, Ratner LE, LaVeist TA, Powe NR. "Race and Trust in the Health Care System." *Public Health Reports* 2003 Jul-Aug; 118(4): 358-65.
- Brotherton SE, Stoddard JJ, Tang SS. "Minority and Nonminority Pediatricians' Care of Minority and Poor Children." *Archives of Pediatrics and Adolescent Medicine* 2000 Sep; 154(9): 912-17.
- Cantor JC, Miles EL, Baker LC, Barker DC. "Physician Service to the Underserved: Implications for Affirmative Action in Medical Education." *Inquiry* 1996 Summer; 33(2): 167-80.
- Carrasquillo O, Orav EJ, Brennan TA, Burstin HR. "Impact of language barriers on patient satisfaction in an emergency department." *Journal of General Internal Medicine* 1999 Feb; 14(2): 82-87.
- Chen J, Rathore SS, Radford MJ, Wang Y, Krumholz HM. "Racial Differences in the Use of Cardiac Catheterization after Acute Myocardial Infarction." *New England Journal of Medicine* 2001 May 10; 344(19): 1443-49.
- Collins KS, Hughes DL, Doty MM, Ives BL, Edwards JN, Tenney K. *Diverse Communities, Common Concerns: Assessing Health Care Quality for Minority Americans*. The Commonwealth Fund, New York, NY, March 2002.
- Cooper LA, Roter DL, Johnson RL, Ford DE, Steinwachs DM, Powe NR. "Patient-Centered Communication, Ratings of Care, and Concordance of Patient and Physician Race." *Annals of Internal Medicine* 2003 Dec 2; 139(11): 907-15.
- Cooper-Patrick L, Gallo JJ, Gonzales JJ, Vu HT, Powe NR, Nelson C, Ford DE. "Race, Gender, and Partnership in the Patient-Physician Relationship." *Journal of the American Medical Association* 1999 Aug 11; 282(6): 583-89.
- Crane JA. "Patient Comprehension of Doctor-Patient Communication on Discharge from the Emergency Department." *Journal of Emergency Medicine* 1997 Jan-Feb; 15(1): 1-7.
- David RA, Rhee M. "The Impact of Language as a Barrier to Effective Health Care in an Underserved Urban Hispanic Community." *Mount Sinai Journal of Medicine* 1998 Oct-Nov; 65(5-6): 393-97.
- Derose KP, Baker DW. "Limited English Proficiency and Latinos' Use of Physician Services." *Medical Care Research and Review* 2000 Mar; 57(1): 76-91.
- Doescher MP, Saver BG, Franks P, Fiscella K. "Racial and Ethnic Disparities in Perceptions of Physician Style and Trust." *Archives of Family Medicine* 2000 Nov-Dec; 9(10): 1156-63.
- Enguidanos ER, Rosen P. "Language as a Factor Affecting Follow-up Compliance From the Emergency Department." *Journal of Emergency Medicine* 1997 Jan-Feb; 15(1): 9-12.
- Flaskerud JH. "Matching Client and Therapist Ethnicity, Language, and Gender: A Review of Research." *Issues in Mental Health Nursing* 1990; 11(4): 321-36. Review.
- Flores G, Laws MB, Mayo SJ, Zuckerman B, Abreu M, Medina L, Hardt EJ. "Errors in Medical Interpretation and Their Potential Clinical Consequences in Pediatric Encounters." *Pediatrics* 2003 Jan; 111(1): 6-14.

- Garcia JA, Paterniti DA, Romano PS, Kravitz RL. "Patient Preferences for Physician Characteristics in University-Based Primary Care Clinics." *Ethnic Disparities* 2003 Spring; 13(2): 259–67.
- Hall JA, Horgan TG, Stein TS, Roter DL. "Liking in the Physician–Patient Relationship." *Patient Education Counseling* 2002; 48: 69–77.
- Hall JA, Roter DL, Katz NR. "Meta-Analysis of Correlates of Provider Behavior in Medical Encounters." *Medical Care* 1988;26: 657–75.
- Hornberger JC, Gibson CD Jr, Wood W, Dequeldre C, Corso I, Palla B, Bloch DA. "Eliminating Language Barriers for Non-English-Speaking Patients." *Medical Care* 1996 Aug; 34(8): 845–56.
- Institute of Medicine. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. National Academy Press, Washington, DC, 2003.
- Jacobs EA, Lauderdale DS, Meltzer D, Shorey JM, Levinson W, Thisted RA. "Impact of Interpreter Services on Delivery of Health Care to Limited-English-Proficient Patients." *Journal of General Internal Medicine* 2001 Jul; 16(7): 468–74.
- Kaplan SH, Greenfield S, Gandek B, Rogers W, Ware, JE. "Characteristics of Physicians with Participatory Decision-Making Styles." *Annals of Internal Medicine* 1996;124: 497–504.
- Keith SN, Bell RM, Swanson AG, Williams AP. "Effects of Affirmative Action in Medical Schools. A Study of the Class of 1975." *New England Journal of Medicine* 1985 Dec 12; 313(24): 1519–25.
- Komaromy M, Grumbach K, Drake M, Vranizan K, Lurie N, Keane D, Bindman AB. "The Role of Black and Hispanic Physicians in Providing Health Care for Underserved Populations." *New England Journal of Medicine* 1996 May 16; 334(20): 1305–10.
- Lee LJ, Batal HA, Maselli JH, Kutner JS. "Effect of Spanish Interpretation Method on Patient Satisfaction in an Urban Walk-in Clinic." *Journal of General Internal Medicine* 2002 Aug; 17(8): 641–45.
- Malat J. "Social Distance and Patients' Rating of Healthcare Providers." *Journal of Health and Social Behavior* 2001; 42(4): 360–72.
- Manson A. "Language Concordance as a Determinant of Patient Compliance and Emergency Room Use in Patients with Asthma." *Medical Care* 1988 Dec; 26(12): 1119–28.
- Mazor SS, Hampers LC, Chande VT, Krug SE. "Teaching Spanish to Pediatric Emergency Physicians: Effects on Patient Satisfaction." *Archives of Pediatrics and Adolescent Medicine* 2002 Jul; 156(7): 693–95.
- Moy E, Bartman BA. "Physician Race and Care of Minority and Medically Indigent Patients." *Journal of the American Medical Association* 1995 May 17; 273(19): 1515–20.
- Murray-Garcia JL, Garcia JA, Schembri ME, Guerra LM. "The Service Patterns of a Racially, Ethnically, and Linguistically Diverse House Staff." *Academic Medicine* 2001 Dec; 76(12): 1232–40.
- Oliver MN, Goodwin MA, Gotler RS, Gregory PM, Stange KC. "Time Use in Clinical Encounters: Are African-American Patients Treated Differently?" *Journal of the National Medical Association* 2001 Oct; 93(10): 380–85.
- Perez-Stable EJ, Napoles-Springer A, Miramontes JM. "The Effects of Ethnicity and Language on Medical Outcomes of Patients with Hypertension or Diabetes." *Medical Care* 1997 Dec; 35(12): 1212–19.

- Rabinowitz HK, Diamond JJ, Veloski JJ, Gayle JA. "The Impact of Multiple Predictors on Generalist Physicians' Care of Underserved Populations." *American Journal of Public Health* 2000 Aug; 90(8): 1225–28.
- Rosenheck R, Fontana A, Cottrol C. "Effect of Clinician-Veteran Racial Pairing in the Treatment of Post-Traumatic Stress Disorder." *American Journal of Psychiatry* 1995; 152(4): 555–63.
- Saha S, Komaromy M, Koepsell TD, Bindman AB. "Patient-Physician Racial Concordance and the Perceived Quality and Use of Health Care." *Archives of Internal Medicine* 1999 May 10; 159(9): 997–1004.
- Saha S, Taggart SH, Komaromy M, Bindman AB. Do Patients Choose Physicians of Their Own Race? *Health Affairs* 2000 Jul-Aug; 19(4): 76–83.
- Sawyer L, Regev H, Proctor S, Nelson M, Messias D, Barnes D, Meleis AI. "Matching Versus Cultural Competence in Research: Methodological Considerations." *Research in Nursing and Health* 1995 Dec; 18(6): 557–67.
- Seijo R, Gómez H, Freidenberg J. "Language as a Communication Barrier in Medical Care for Latino Patients." *Hispanic Journal of Behavioral Sciences* 1991;13: 363.
- Stevens GD, Shi L, Cooper LA. "Patient-Provider Racial and Ethnic Concordance and Parent Reports of the Primary Care Experiences of Children." *Annals of Family Medicine* 2003; 1: 105–12.
- Stewart MA. Effective Physician-Patient Communication and Health Outcomes: A Review." *Canadian Medical Association Journal* 1995; 152(9): 1423–33.
- Todd KH, Samaroo N, Hoffman JR. "Ethnicity as a Risk Factor for Inadequate Emergency Department Analgesia". *Journal of the American Medical Association* 1993 Mar 24–31; 269(12): 1537–39.
- van Wieringen JC, Harmsen JA, Bruijnzeels MA. "Intercultural Communication in General Practice." *European Journal of Public Health* 2002; 12(1):63–68.
- Wiggers JH, Sanson-Fisher R. "Duration of General Practice Consultations: Association with Patient Occupational and Educational Status." *Social Science and Medicine* 1997; 44: 925–34.
- Wissow LS, Larson S, Roter D, Wang MC, Hwang WT, Luo X, Johnson R, Gielen A, Wilson M, McDonald E. "Longitudinal Care Lessens Differences in Mothers' Psychosocial Talk to Pediatricians Attributable to Ethnic and Gender Discordance." *Archives of Pediatrics and Adolescent Medicine* 2003 May; 157(5): 419–24.
- Xu G, Fields SK, Laine C, Veloski JJ, Barzansky B, Martini CJ. The Relationship Between the Race/Ethnicity of Generalist Physicians and Their Care for Underserved Populations." *American Journal of Public Health* 1997 May; 87(5): 817–22.

RELATED PUBLICATIONS

In the list below, items that begin with a publication number can be found on The Commonwealth Fund's website at www.cmwf.org. Other items are available from the authors and/or publishers.

#323 *The Commonwealth Fund/Harvard University Fellowship in Minority Health Policy* (brochure)

#746 *A State Policy Agenda to Eliminate Racial and Ethnic Health Disparities* (June 2004). John E. McDonough, Brian K. Gibbs, Janet L. Scott-Harris, Karl Kronebusch, Amanda M. Navarro, and Kimá Taylor.

#726 *Who, When, and How: The Current State of Race, Ethnicity, and Primary Language Data Collection in Hospitals* (May 2004). Romana Hasnain-Wynia, Debra Pierce, and Mary A. Pittman, Health Research and Educational Trust.

#692 *Patient-Centered Communication, Ratings of Care, and Concordance of Patient and Physician Race* (December 2003). Lisa A. Cooper, Debra L. Roter, Rachel L. Johnson, Daniel E. Ford, Donald M. Steinwachs, and Neil R. Powe. *Annals of Internal Medicine*, vol. 139, no. 11. In the Literature summary available at http://www.cmwf.org/programs/insurance/cooper_raceconcordant_itl_692.asp.

#690 *Eligibility for Government Insurance if Immigrant Provisions of Welfare Reform Are Repealed* (October 2003). Olveen Carrasquillo, Danielle H. Ferry, Jennifer N. Edwards, and Sherry Glied. *American Journal of Public Health*, vol. 93, no. 10. In the Literature summary available at http://www.cmwf.org/programs/insurance/carrasquillo_immigrantprovisions_itl_690.asp; full article available at <http://www.ajph.org/cgi/reprint/93/10/1680.pdf>.

#682 *Healthcare Workforce Diversity: Developing Physician Leaders* (October 3, 2003). Anne C. Beal, Melinda K. Abrams, and Jolene N. Saul, The Commonwealth Fund. The testimony is available online only at http://www.cmwf.org/programs/minority/beal_sullivancommiss_682.pdf.

#676 *Quality of Care for Children in Commercial and Medicaid Managed Care* (September 17, 2003). Joseph W. Thompson, Kevin W. Ryan, Sathiska D. Pindiya, and James E. Bost. *Journal of the American Medical Association* (In the Literature summary). This study is the largest comparative analysis of Medicaid and commercial managed care organization performance results to date. The authors demonstrate that Medicaid-insured children enrolled in managed care plans had lower immunization rates and fewer well-child visits than commercially insured children in such plans.

#576 *Cultural Competence in Health Care: Emerging Frameworks and Practical Approaches* (October 2002). Joseph R. Betancourt, Alexander R. Green, and J. Emilio Carrillo. This field report spotlights a diverse group of health care organizations striving to improve access to and quality of care for a growing minority and immigrant population through innovative programs that develop minority leadership, promote community involvement, and increase awareness of the social and cultural factors that affect health beliefs and behaviors.

Quality of Cardiac Surgeons and Managed Care Contracting Practices (October 2002). Dana B. Mukamel, David L. Weimer, Jack Zwanziger, and Alvin I. Mushlin. *Health Services Research*, vol. 37, no. 5. Copies are available from *Health Services Research*, Foundation of the American College

of Healthcare Executives, Publication Services, One North Franklin, Suite 1700, Chicago, IL 60606-3491, Fax: 312-424-0703.

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Racial and Ethnic Disparities in Coronary Heart Disease in Women: Prevention, Treatment, and Needed Interventions (September/October 2002). Paula A. Johnson and Rachel S. Fulp. *Women’s Health Issues*, vol. 12, no. 5. Copies are available from the Jacobs Institute of Women’s Health, 409 12th Street, SW, Washington, DC 20024, Tel: 202-863-4990, Fax: 202-488-4229.

Association of Health Literacy with Diabetes Outcomes (July 24–31, 2002). Dean Schillinger et al. *Journal of the American Medical Association*, vol. 288, no. 4. Copies are available from Dean Schillinger, MD, University of California, San Francisco, Primary Care Research Center, Department of Medicine, San Francisco General Hospital, San Francisco, CA 94110, E-mail: dean@itsa.ucsf.edu.

#547 *A Health Plan Report Card on Quality of Care for Minority Populations* (June 2002). David R. Nerenz, Margaret J. Gunter, Magda Garcia, and Robbya R. Green-Weir. In this study, eight health plans participated in a demonstration project designed to determine whether health plans could obtain data on race/ethnicity of their members from a variety of sources and incorporate those data in standard quality of care measure sets, and whether the analyses would show significant racial/ethnic disparities in quality of care within plans, and/or significant differences across plans in quality of care provided to specific groups.

Designing and Evaluating Interventions to Eliminate Racial and Ethnic Disparities in Health Care (June 2002). Lisa A. Cooper, Martha N. Hill, and Neil R. Powe. *Journal of General Internal Medicine*, vol. 17, no. 6. Copies are available from Lisa A. Cooper, Welch Center for Prevention, Epidemiology, and Clinical Research, Johns Hopkins University, 2024 East Monument Street, Suite 2-600, Baltimore, MD 21205-2223, E-mail: lisa.cooper@jhmi.edu.

Addressing Racial and Ethnic Barriers to Effective Health Care: The Need for Better Data (May/June 2002). Arlene S. Bierman, Nicole Lurie, Karen Scott Collins, and John M. Eisenberg, *Health Affairs*, vol. 21, no. 3. Copies are available from *Health Affairs*, 7500 Old Georgetown Road, Suite 600, Bethesda, MD 20814-6133, Tel: 301-656-7401 ext. 200, Fax: 301-654-2845, www.healthaffairs.org.

#557 *Eliminating Racial/Ethnic Disparities in Health Care: Can Health Plans Generate Reports?* (May/June 2002). David R. Nerenz, Vence L. Bonham, Robbya Green-Weir, Christine Joseph, and Margaret Gunter. *Health Affairs*, vol. 21, no. 3 (*In the Literature* summary). The absence of data on race and ethnicity in health plan and provider databases is a significant barrier in the creation and use of quality-of-care reports for patients of minority groups. In this article, however, the authors show that health plans are able to collect and analyze quality of care data by race/ethnicity.

#541 *Providing Language Interpretation Services in Health Care Settings: Examples from the Field* (May

2002). Mara Youdelman and Jane Perkins, National Health Law Program. This field report profiles a variety of promising programs around the country that provide patients with interpretation services, and also identifies federal, state, local, and private funding sources for such services.

#532 *Racial Disparities in the Quality of Care for Enrollees in Medicare Managed Care* (March 13, 2002). Eric C. Schneider, Alan M. Zaslavsky, and Arnold M. Epstein, Harvard School of Public Health/Harvard Medical School. *Journal of the American Medical Association*, vol. 287, no. 10 (*In the Literature* summary). In this article the authors report that among Medicare beneficiaries enrolled in managed care plans, African Americans are less likely than whites to receive follow-up care after a hospitalization for mental illness, eye exams if they are diabetic, beta-blocker medication after a heart attack, and breast cancer screening.

#523 *Diverse Communities, Common Concerns: Assessing Health Care Quality for Minority Americans* (March 2002). Karen Scott Collins, Dora L. Hughes, Michelle M. Doty, Brett L. Ives, Jennifer N. Edwards, and Katie Tenney. This report, based on the Fund's 2001 Health Care Quality Survey, reveals that on a wide range of health care quality measures—including effective patient–physician communication, overcoming cultural and linguistic barriers, and access to health care and insurance coverage—minority Americans do not fare as well as whites.

#524 *Quality of Health Care for African Americans* (March 2002). Karen Scott Collins, Katie Tenney, and Dora L. Hughes. This fact sheet, based on the Fund's 2001 Health Care Quality Survey and companion piece to pub. **#523** (above), examines further the survey findings related to the health, health care, and health insurance coverage of African Americans.

#525 *Quality of Health Care for Asian Americans* (March 2002). Dora L. Hughes. This fact sheet, based on the Fund's 2001 Health Care Quality Survey and companion piece to pub. **#523** (above), examines further the survey findings related to the health, health care, and health insurance coverage of Asian Americans.

#526 *Quality of Health Care for Hispanic Populations* (March 2002). Michelle M. Doty and Brett L. Ives. This fact sheet, based on the Fund's 2001 Health Care Quality Survey and companion piece to pub. **#523** (above), examines further the survey findings related to the health, health care, and health insurance coverage of Hispanics.