Diversity and Disparities in Health and Health Care: Why it Matters to Anesthesiology

Jennifer Thomas-Goering, DO, MBA, Carmen R. Green, MD*
Department of Anesthesiology, University of Michigan Medical School, 1H247 University Hospital, 1500 East Medical Center Drive, Ann Arbor, MI 48109-0048, USA

The American Society of Anesthesiologists is an educational, research and scientific association of physicians organized to raise and maintain the standards of the medical practice of anesthesiology and improve the care of the patient.

Since its founding in 1905, the society’s achievements have made it an important voice in American medicine and the foremost advocate for all patients who require anesthesia or relief from pain.

As physicians, anesthesiologists are responsible for administering anesthesia to relieve pain and for managing vital life functions, including breathing, heart rhythm and blood pressure, during surgery. After surgery, they maintain the patient in a comfortable state during the recovery, and are involved in the provision of critical care medicine in the intensive care unit.

ASA mission statement

The United States is rapidly becoming an increasingly diverse nation with more minorities and women than ever seen in the world [1–3]. Throughout United States history, sociodemographic factors (eg, race, ethnicity, and gender) played a significant role in determining overall health status and quality of life and quality of care [4–6]. More specifically, the literature provides ample evidence for differences in health and health care based on these sociodemographic factors [7–12]. These factors influenced the ability to access many careers in the health professions, including becoming a medical doctor [13,14]. Most anesthesiologists do not consciously consider the importance of sociodemographic factors when evaluating their patients, however. For instance, women make up more than 50% of the population, but little consideration is given to the unique implications that gender has on assessment, management, and outcomes. By 2030, non-white racial and ethnic groups...
(eg, African Americans, Hispanics, and Native Americans) and women will constitute a majority of the American population, yet there are no guidelines specifically designed to improve the quality of care that women and racial and ethnic minorities receive during the perioperative period. The literature continues to report problems with assessing and treating the pain complaints of racial and ethnic minorities and those of women [15].

The importance of disparities and diversity as they relate to health and health care has attracted Congressional attention [16]. For the past 5 years, several agencies have addressed the inequality of health and health care across a full spectrum of disease and treatments [17]. The United States Congress charged the Institute of Medicine (IOM) of the National Academy of Sciences to assess health care inequities and disparities in the delivery of health care services and diversity in the health care work force. The IOM specifically addressed these topics in a scholarly fashion in “Unequal treatment: racial and ethnic disparities in health care” [18] and “In the nation’s compelling interest: ensuring diversity in the health-care workforce” [19]. These books provide evidence that disparities and diversity in health care are critical underpinnings that are intrinsically linked to the quality of health care that all Americans receive throughout the health care delivery system [20]. Although much is written about disparities based on gender, the IOM provided little information on gender-related disparities in health or health care or gender-related diversity as it relates to the health professions. The minimal attention devoted to these matters may be caused by the breadth of its charge or that greater differences and disparities are seen based on a patient’s race and ethnicity.

Although the IOM viewed pain management as one of the clinical areas in which disparities in health care exist, of particular interest to anesthesiologists is the minimal attention they paid to pain (arguably the most visible part of our practice to patients and their families) [18]. Unfortunately, the discussions regarding pain were limited to acute and cancer pain only. There is a significant and emerging literature documenting disparities in pain care based on race, ethnicity, and gender across a large variety of painful conditions (ie, acute, cancer, and chronic pain) and treatment settings (eg, ambulatory, inpatient) [15,21–24]. In general, minority patients (ie, African Americans, Native Americans, and Hispanics) and women (regardless of age) receive lesser treatment for pain and lesser quality of pain care when compared to white men [15,25–27]. Overall, the IOM provided support for diversity in general and provides evidence that a diverse workforce plays a significant role in reducing and eliminating disparities in health and health care in particular. Their work supporting the importance of diversity primarily focused on the importance of diversifying the pipeline of students into the health professions but did not address the challenges facing faculty and academic medicine in a substantive manner. Both IOM reports intrinsically supported the importance of cultural awareness, sensitivity, and competence.

This article explores pertinent literature regarding diversity and disparities for minorities and women and why they are important for anesthesiologists
(particularly academic anesthesiologists). Background information and a platform for discussing the role of race, ethnicity, and gender in our increasingly aging and diversifying society are provided for anesthesiologists. Potential research priorities to move the research and treatment community closer to reducing and eliminating disparities in treatment and increasing the diversity of the anesthesiology workforce are presented. Finally, potential recommendations for anesthesiology as it relates to health care policy, patients, and the general public while reaffirming the need for mentorship for women and racial and ethnic minority physicians are presented.

**HISTORY**

In the recent United States Supreme Court case *Grutter v Bollinger*, the court narrowly ruled (5 to 4) that the University of Michigan may consider sociodemographic factors, specifically race and ethnicity, as factors in admission to the University of Michigan’s law school [14]. The Supreme Court further ruled that the University of Michigan’s law school did not violate the constitutional rights of nonminority applicants by doing so. The amicus briefs provided by the corporate sector (eg, Ford Motor Company) and the military provide evidence that creating a “critical mass” of racial and ethnic diversity was in the best interest of the students, school, university, and the nation. Beyond ensuring that race and ethnicity can be used as one of many factors in selecting students for admission to the law school, the ruling impacts women and socioeconomically disadvantaged individuals. Most importantly, it has far-reaching implications for medical schools into the new century as the patients they care for become increasingly diverse. The potential impact of this decision on health care and health care disparities is tremendous.

According to the Bureau of Labor Statistics, the overall labor force participation rates will continue to rise for women and minorities between 1998 and 2008 [28]. In 2008, women will make up approximately 48% of the total labor force and underrepresented minorities (ie, racial and ethnic minority groups that are underrepresented in the medical profession relative to their numbers in the general population) make up approximately 30% of the total labor force [29]. With an increasingly diverse medical profession, the practice of medicine clearly will change to reflect this population [30–36].

The Association of American Medical Colleges reported that women represented 50% of applicants to medical schools, 49% of first-year students, 49% of medical students, 47% of medical school graduates, and 42% of residents and fellows in 2004. Overall, women represent 32% of medical school faculty members, but they represent 21% of instructors or other ranks (versus 10% men), 48% of assistant professors (versus 37% men), 19% of associate professors (versus 23% men), and 12% of full professors (versus 30% men) in 2004–2005. Although surgery and orthopedics continue to have lower percentages of women faculty, obstetrics and gynecology, pediatrics, public health, and preventive medicine have higher percentages (>40%) of women in faculty positions [30,37]. Women currently represent 30% of academic anesthesiologists overall,
but they represent 33% of assistant professors, 26% of associate professors, and 13% of full professors in anesthesiology [29].

Many health profession educational groups have worked tirelessly to increase the preparation, participation, and status of underrepresented minorities and women in medical careers. Overall, the representation of racial and ethnic minorities within medicine (especially academic medicine) and all health professions is significantly less than their representation in the general population [38]. The cost of a medical education is often a significant barrier to increasing the number of underrepresented minorities in medicine. Underrepresented minorities often have lower economic resources and require more federal and state grants and loans to finance their medical education. Data continue to support the idea that underrepresented minority and low-income medical students have increased educational debt after medical school. It follows that recent state and federal policies reducing governmental financial aid for education when combined with the recent economic down turn results in increased financial barriers to a career in medicine. These policies also influence residency choice and the ability to choose a career in academic medicine.

Less detailed information on underrepresented minority faculty in academic medicine is available [38]. What remains clear is that promotions for underrepresented minority faculty lag beyond their white counterparts, despite their growth in the ranks of academic medicine. Although there are gains in the promotion of women in academic medicine and increasing numbers in the ranks, many consider underrepresented minority faculty an endangered species. In a study that examined the promotion rates among minority faculty over 17 years (1980–1997) there were no increases [39]. Overall, underrepresented minorities and all other minorities are promoted at much lesser rates than white faculty. Table 1 provides more information about the current status of faculty in academic medicine based on race and gender by academic rank.

When examining the demographics of leadership for academic medicine, women represented 18% of division/section chiefs, 11% of department chairs, 45% of assistant deans, 29% of associate and senior associate/vice deans, and

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10% of medical school deans in academic medical centers in 2005 [29]. Currently, approximately 10% of academic anesthesiology department chairs are women. Little is known about the numbers of minority faculty who are division/secion chief, department chairs, assistant deans, associate and senior associate/vice deans, and medical school deans, however, because their numbers are exceedingly small [29]. Although the US Department of Education strongly encourages accreditation boards to be more aggressive in formulating and enforcing standards that yield an increase in a critical mass of underrepresented minorities in academic medicine, the author was unable to obtain accurate information based on race and ethnicity for academic anesthesiology.

Many medical schools have designed faculty development and leadership programs and mentoring programs without regard to race and gender. It is well established, however, that underrepresented minorities and women are less likely to have mentors and are less able to benefit from these relationships. Toward this end, several organizations devoted to increasing the diversity of academic medicine have developed highly acclaimed programs aimed at advancing the status of women and underrepresented minorities and increasing their numbers in academic medicine (e.g., Association of American Medical Colleges Minority Faculty Professional Development Seminar, Association of American Medical Colleges Junior and Senior Women Faculty Professional Development Seminars). The von Amerigen Hedwig Executive Leadership in Academic Medicine has been in existence for 10 years and remains the only program specifically designed to provide women with the leadership skills to become executives in academic medicine. It is important to note that four of the ten women (one is an African-American woman) who are currently deans of an academic medical school are Executive Leadership in Academic Medicine graduates. The data provided on the status of women in academic medicine is done so without regard to racial or ethnic backgrounds, whereas the status of underrepresented racial and ethnic minorities in academic medicine is done without regard to gender. Many complexities distinguish the problems that underrepresented racial and ethnic minority women confront. The leadership and academic issues that beset underrepresented minorities (especially women) are often difficult to disentangle and are beyond the scope of this article; however, it is clear that we must begin to collect the data.

WHY SHOULD HEALTH CARE DISPARITIES MATTER TO ANESTHESIOLOGISTS?

Several federal agencies have defined health care disparities as a difference in incidence, prevalence, mortality, and burden of disease and other adverse health conditions [40]. Others have defined health care disparities as racial and ethnic differences in the quality of health care that are not caused by access-related factors, clinical needs, preferences, or appropriateness of interventions [37,41,42]. An operational definition of a health care disparity is differences in health, disease burden, or clinical decisions or outcomes associated with disadvantage. Overall, the US Department of Health and Human
Services has sponsored many research initiatives and spent millions of dollars attempting to reduce and eliminate health care disparities. The importance of reducing and eliminating disparities has received bipartisan support based on the fact that disparities increase health care expenditures.

“Racial and ethnic disparities in health care are unacceptable in a country that values equality and equal opportunity for all. And that is why we must act now with a comprehensive initiative that focuses on health care and prevention for racial and ethnic minorities” (President Bill Clinton).

“These gaps are simply unacceptable in America. Turning our back on these health disparity problems would be a national failure” (Senate Majority Leader, Senator Bill Frist, MD).

THE ROLE OF GENDER AND RACE ON HEALTH STATUS AND MEDICAL CARE

Several studies have identified that race and gender are determinants for overall health status and health care treatment options [43]. The landmark paper by Schulman clearly demonstrated that women and African Americans who present with chest pain were less likely to receive recommendations for cardiac catheterizations than men or their white counterparts. Schulman also showed that black women were significantly less likely to be referred for catheterizations than other groups [44]. Overall, several studies confirmed that disparities in health care exist within and across all racial and ethnic groups [45].

Health insurance allows access to health care, yet racial and ethnic minorities, low-income individuals, and women are more likely to be uninsured or underinsured, thereby limiting their access to health care and contributing to diminished health [9]. For instance, racial and ethnic minorities with insurance are more likely to rate their health as poor and are more likely to report financial difficulties in obtaining care than similar whites [46–49]. Health insurance is not the great equalizer. Even at higher incomes, whites generally fare better than blacks, Hispanics, and Native Americans who have increased access to specialty care (including pain care) and specialized treatments, including access to opioid analgesics in their local community pharmacies [50–52].

THE ROLE OF PHYSICIAN VARIABILITY IN DECISION MAKING

Physician and patient gender also plays a significant role in determining health care [53,54]. For instance, male physicians were more likely to offer rectal examinations to their male patients than they were to offer pap smears and mammograms to their female patients. Gender and race also affect decisions about pain management. Male primary care physicians prescribed more pain medicine to their male patients than to their female patients [53,54]. Women primary care physicians also were shown to have similar prescribing methods, except they prescribed more pain medicine to their female patients than their male patients [29]. Regardless of the type of pain, however, the literature continues to suggest that women and minorities receive lesser quality pain care [44,55,56].
Although training in cultural competency is incorporated in the curriculum of most US medical schools, residents who completed their final year of residency training believed that they were unprepared to deal with patients from diverse cultures [57–61]. A large proportion of residents reported that they received little or no cross-cultural training. They also felt unprepared to treat patients with religious beliefs that were not Western beliefs, patients who do not trust in the US health system, patients who have religious beliefs that may affect treatment, patients who use complementary or alternative medicines, or patients who are new immigrants [57]. These findings imply that although cultural competency is part of the medical school curriculum, translating the principles of cultural competence into clinical practice is much more problematic. It is not surprising that disparities in health and health care persist.

Physician-patient communication can contribute to disparities in health care [62–65]. During the perioperative period, anesthesiologist-patient communication usually entails a short amount of time during the preoperative period and an even shorter amount of time during the postoperative period. Anesthesiologists generally have a few minutes to gather information and develop rapport with their patients, but this time is crucial [66]. There is considerable opportunity for miscommunication (especially for non-English speaking patients). Differences in the way that women and minorities convey their complaints (especially their pain complaints) and patient attitudes and perceptions contribute to problematic physician-patient communication [67–69]. Identifying and addressing potential communication barriers based on race, ethnicity, gender, and culture between patients and their anesthesiologists can improve patient satisfaction with care [70]. It follows that the quality of care received is improved through active listening by anesthesiologists and yields more effective communication, especially with an increasingly diverse patient population. The extra time taken is worth it for all parties involved.

**DISPARITIES IN PAIN CARE**

Overall, disparities in analgesic administration have been documented for all types of pain (ie, acute, chronic, and cancer pain) and in all settings [15]. Todd and colleagues [71] showed that Hispanics with isolated long bone fractures were twice as likely as whites to receive no pain medication during their emergency department visit regardless of the patient’s gender or primary language. Pain assessment (the cornerstone of quality pain care) seems to be the most likely mediator for the physician decision-making process and severity of illness because in a follow-up study in 1994, Todd and colleagues [72] found no differences in pain assessment when patients had less severe bone trauma. In the acute postoperative pain setting, Ng and colleagues [73,74] found that ethnic minorities were prescribed less opioid analgesics for their pain via patient-controlled analgesia after similar orthopedic procedures than whites. The amount that patients self-administered did not differ based on race, however [75].

Several studies revealed that minorities with cancer pain received significantly less potent analgesics than those recommended by World Health Organization
standards [15]. In settings with predominant minority patients, 60% of those patients were undertreated by World Health Organization standards. The chronic pain literature also revealed disparities in health based on race, regardless of age and gender. More specifically, African Americans had diminished health, with increased depression, posttraumatic stress disorder, and increased pain when compared to whites [15,76]. They also were more likely to report that chronic pain was a significant financial burden for them and that they should have been referred to the pain clinic sooner for treatment [52]. Chronic pain seems to impact racial and ethnic minorities disproportionately.

WHY IS RACIAL, ETHNIC, AND GENDER DIVERSITY IMPORTANT TO ANESTHESIOLOGY?

Overall, the literature supports that increasing diversity yields improved educational experiences for all students and physicians in training (regardless of race and gender) and for their patients [64,77–80]. African Americans, Hispanics, and Native Americans are significantly underrepresented in the field of medicine (and anesthesiology), however. Underrepresented minority physicians are more likely to serve medically underserved, racial, and ethnic minority populations [81]. Given a choice, racial and ethnic minority patients are also more likely to choose a physician with the same racial or ethnic background [82]. The result may be improved physician-patient communication, improved access to health care, greater patient satisfaction, and better quality of care.

Gender congruence is also important in understanding disparities. Female physicians spend more time with their patients than their male counterparts, leading to more positive discussions, explanations, rapport, and emotional support [83]. The National Ambulatory Medical Care Survey reported that female physicians spent 23.5 minutes with their patients when compared to men, who spent on average 18.7 minutes, yielding increased patient satisfaction [84]. In a study of pediatricians, doctor visits with female physicians were 29% longer than those of men. Female physicians are engaged in more social exchange, more encouragement and reassurance, more communication during the physical examination, and more information gathering with children when compared to male physicians. Of particular importance to pediatric anesthesiologists is that parents were more satisfied with female physicians and children communicated more with female physicians than with male physicians. Some of these unique communication skills may need to be incorporated by men as well to improve physician-patient communication.

Transforming the professional and institutional climate to support diversity and eliminate disparities

Many benefits from diversity go beyond the ability to recruit and retain excellent talent [82,85]. Increased diversity among anesthesiologists and other health care professionals increases the creativity of the team and leads to new options for complex system problems. Minority health professionals provide benefits to the larger community by their community service. In academic medicine and
professional societies, underrepresented minorities and women are disproportionately asked to provide scientific service (e.g., serving on committees, mentoring) while enhancing diversity. Unfortunately, their service is often unrecognized, although it is important to the institutions that they serve. The American Society of Anesthesiologists committee on professional diversity primarily focuses on the status of women anesthesiologists. In light of a diversifying United States, the committee’s work should be broadened to specifically examine pipeline issues and special challenges in academic medicine for both women and minorities. Organizations such as the Association of University Anesthesiologists should take a role in ensuring the advancement of minorities and women in science and academic anesthesiology by establishing a task force to assess and address issues related to these underrepresented groups [86].

Admission to residency programs should go beyond quantitative measures, such as GPA, honors, and USMLE scores, and include many other factors (e.g., service to the community) to reflect our commitment to diversity and respect for the patients we will care for in the new century. For instance, the American Society of Anesthesiologists mission statement does not address the fundamental importance of diversity to the organization. More specifically, a clear statement about the value of diversity in anesthesia education and in providing anesthetic care should be incorporated to reflect our diversifying profession and patient population.

RECOMMENDATIONS FOR THE FUTURE

Additional research on women and minorities in anesthesiology is necessary because many questions remain regarding their professional lives, advancement in the specialty, and work/life balance. Research designed to evaluate the effectiveness of pipeline programs is also necessary to collect comprehensive demographic data to monitor the movement and career trajectories of underrepresented minorities and women in anesthesiology. Systematic data on recruitment, retention, promotion, and earnings are also needed. New research is imperative to specifically examine, encourage, and support underrepresented minorities and women who move into organizational leadership roles in anesthesiology (especially academic anesthesiology). Finally, anesthesiologists should be vigilant about monitoring their outcomes from the care they provide until health care disparities no longer exist and diversity is ensured [87].

References


