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History, Current State, and Future of Diversity in the Anesthesia Workforce

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Keywords

• Diversity • Health care disparities • Medical faculty • Leadership

Key points

- A diverse workforce, including leadership, has been recognized as an important factor in innovation and economic productivity in the business sector. Companies with higher diversity outperform those with limited diversity.
- As the population increases in diversity, the ability to transform the medical workforce to better care for all patients, in addition to continuing to innovate, depends on the ability to attract more diverse physicians.
- Anesthesia, along with most other medical specialties, lags in attracting diverse physicians. Current efforts, including programs recently developed in neuroanesthesia and the American Society of Anesthesiologists Professional Diversity Committee, are steps toward change.

INTRODUCTION

Diversity is "the condition of having or being composed of differing elements" (Merriam-Webster Dictionary). Taking this a step further, human diversity can be described as inherent, the traits people were born with, or acquired, referring to the traits that are gained from experience [1]. According to the US Census Bureau, the population demographics of the United States are growing more and more diverse. It is estimated that in 2020 more than 50% of the nation's children will be considered of racial and/or ethnic minorities, and in 2044 the United States

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will become a so-called majority minority nation, with most Americans belonging to a minority group [2]. As this trend continues, many companies and other groups are identifying the importance of organizational inclusion; diversity not only as a matter of social justice but also as a leading factor for enhanced performance and global competitiveness. In medicine, women and minorities have historically been underrepresented in the workforce and this currently holds true in anesthesiology [3]. This article reviews workforce and leadership diversity in medicine, and more specifically in anesthesiology, and its implications for health care disparities and the future of this specialty.

In the business sector, diversity in the workforce has become increasingly recognized as a key factor for economic success. According to the *Harvard Business Review*, diversity in leadership is a means to unlocking innovation. Their research suggests that employees of companies with diverse leaders are 45% more likely to report market growth. These employees are also 70% more likely to report that their company captured new markets compared with employees of companies whose leadership lacks diversity [2]. McKinsey & Company, a management consulting firm for 80% of the world's largest corporations, recently published data reaffirming the correlation between diversity in the workplace and financial outperformance. They found that companies in the top quartile for gender and ethnic diversity on their executive teams were more likely to experience above-average profitability than companies in the bottom quartile for these measures of diversity (Fig. 1). Furthermore, they reported that companies in the fourth quartile for both gender and ethnic diversity were more likely to underperform their industry peers by 29% on profitability [4].

Despite this evidence for the benefits of workforce diversity and improved inclusion in leadership positions, companies have struggled to achieve equal representation, especially in leadership. Approximately 39% of the US population belong to minority ethnic and racial groups. In contrast, only 11% to 12% of executive positions are held by ethnically diverse individuals (Fig. 2). To further describe the lack of ethnic and cultural diversity in industry leadership, McKinsey & Company reports that although 10% of US college graduates are black, black Americans hold only 4% of US company executive positions. Hispanic/Latino Americans comprise 8% of graduates and only 4% of executives, and Asian Americans 7% of graduates compared with 5% of executives [4].

DIVERSITY IN MEDICINE

While the nation's demographics shift toward increased diversification, women and people from racial and ethnic minority groups continue to face underrepresentation in the medical workforce similar to their lack of representation in business. The Association of American Medical Colleges (AAMC) defines underrepresentation in medicine as "those racial and ethnic populations that are underrepresented in the medical profession relative to their number in the general population" [5]. Women make up 50.8% and minorities (ie, African American/black, Asian, Hispanic/Latino, American Indian/Alaska Native, or Native Hawaiian/Pacific Islander) make up approximately 39% of the US

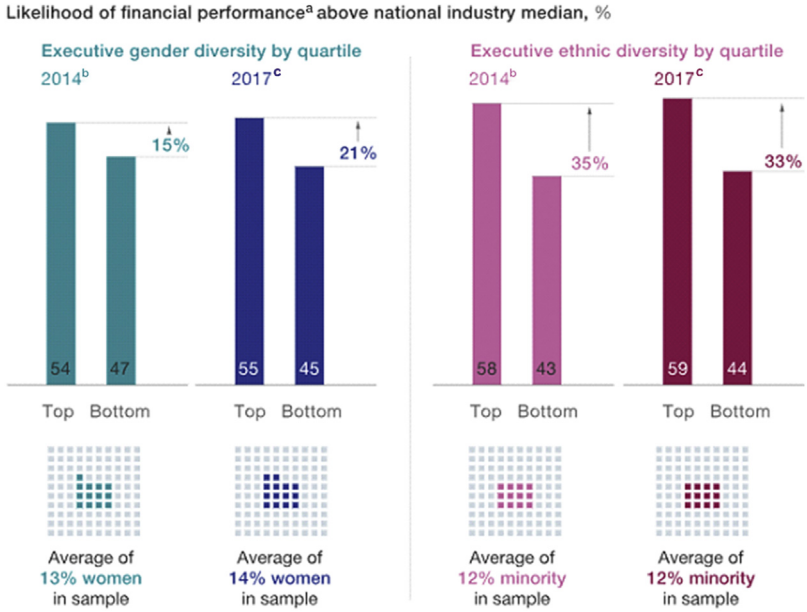

Fig. 1. Companies in the top quartile of gender and ethnic diversity in their leadership teams continue to be significantly more profitable than companies with the lowest quartile of gender diversity. This finding is represented by the bars in likelihood of financial performance greater than the mean. Despite this, the percentages of women and minorities in leadership continue to lag, as the matrix graphs below the bars reveal. [a] Average earnings-before-interest-and-taxes margin, 2010 to 2013 in Diversity Matters 1 and 2011 to 2015 in Diversity Matters II. [b] Results are statistically significant at $P<.10$. [c] Results are statistically significant at $P<.05$. (Exhibits from ''Delivering through Diversity'', January 2018, McKinsey & Company, www.mckinsey.com. Copyright ©2019 McKinsey & Company. All rights reserved. Reprinted by permission.)

population [6]. However, in medicine, minorities represent only 8.9% of the current US physician workforce [7]. Although 2018 marked the first year ever that the number of women applicants and matriculants in US medical schools exceeded the number of male enrollees, women in medicine continue to struggle to achieve career and academic advancement that is similar to their male colleagues [8].

The representation of women in US medical school faculty (39%) is much less than their representation in the population as a whole [9]. However, the disproportionate number of women faculty grows more unequal in academic leadership roles. Only 9.2% of all chairpersons and 9.3% of medical school deans are women. Likewise, minorities are also underrepresented in academic medicine and struggle to attain leadership roles. People from ethnic and racial minority groups represent only 6% of academic chairs and 7.8% of medical school deans [10]. Furthermore, studies have shown that women and minorities are less likely to be promoted to the rank of associate or full professor than male academic physicians who are white [8].

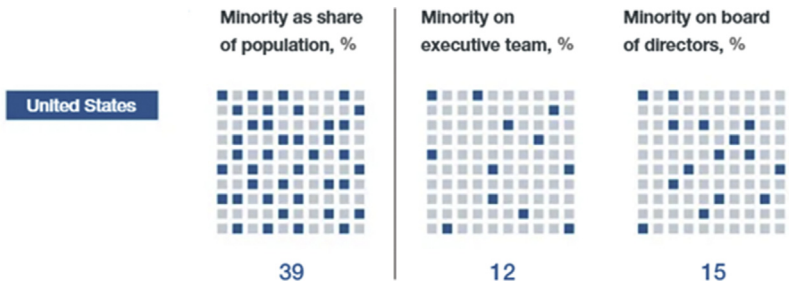

Fig. 2. Executive ethnic diversity relative to population diversity in the United States. Ethnic minority is defined as black/African American, Hispanic/Latino, Asian, Pacific Islander, Native American, mixed race, and other nonwhite ethnicities. (Exhibits from "Delivering through Diversity", January 2018, McKinsey & Company, www.mckinsey.com. Copyright ©2019 McKinsey & Company. All rights reserved. Reprinted by permission.)

Lack of diversity in the medical workforce has been described as a potential contributing factor to the disparities in US health care that have been well documented for many years. Patients representing minority groups have worse measures of health care quality and poorer access to care than their white counterparts [11]. People living in rural areas are less likely to receive preventive care and more likely to experience language barriers than those living in urban communities. White patients living in high socioeconomic status areas have longer life expectancy after an acute myocardial infarction than minority patient and patients living in low socioeconomic status areas [12]. Eight percent of individuals identifying as lesbian, gay, or bisexual, and 27% of transgender or gender-nonconforming individuals report being refused care because of their gender identity/sexual orientation [13]. However, anesthesiology is not immune to disparities in patient care. Studies have shown that black, Hispanic, Medicaid, and/or uninsured patients may be less likely to receive regional anesthesia during hip and knee replacement surgery [14] and that black and Hispanic women are less likely than white women to receive epidural analgesia for labor [15].

DIVERSITY IN ANESTHESIOLOGY

Not dissimilar from the medical field in general, the US anesthesiology workforce has historically been dominated by white men, who represented approximately 54.7% of US anesthesiologists in 2013 [7]. The representation of women in anesthesiology has slowly increased over time, from 22% in 2007 to 24.8% in 2013 [16]. However, this proportion still lags significantly behind the 38% of the general medical workforce who are women and even more so behind the gender diversity of the current US population. Black physicians represent 4.2% of anesthesiologists, on par with the general medical workforce, but in stark contrast to US population demographics, of which blacks/African Americans represent 13%. Combined, minorities (African American/black, Asian, Hispanic/Latino, American Indian/Alaska Native, and Native

Hawaiian/Pacific Islander) make up 39% of the US population and only 20.3% of anesthesiologist in the United States [7].

Themes of underrepresentation of women and racial/ethnic minorities in anesthesiology are also present in the anesthesia subspecialties. Pain medicine ranks among the bottom quartile of medical specialties in terms of female applicants, female trainees, and proportion of female practitioners [17]. At present, women represent approximately 23.2% of trainees in pain medicine [8]. The proportion of female anesthesia critical care fellows has significantly increased from 11.6% to 27.0% over 10 years (2004–2014), a fraction that more closely parallels the representation of women in the general medical workforce [17]. However, minority representation in critical care has seen less growth. Critical care trainees identifying as black represent only 3.9%, Hispanic fellows represent 8.4%, and American Indian/Alaskan Native/Native Hawaiian/Pacific Islander fellows only 0.3%. Compared with US population demographics, these data signify significant underrepresentation of women and minorities in critical care fellowship training programs.

As the aforementioned lack of diversity in anesthesiology has become increasingly identified, calls for improved workforce diversity have amplified across the country. These calls have resulted in an increase, albeit a slow increase, in the number of women and underrepresented minorities in the practice of academic anesthesiology. However, the improvement in representation has not been met with improved inclusion in leadership. Mirroring the general medical workforce, women and minorities in academic anesthesiology departments have not had the same success in obtaining professional advancement as their white male counterparts (Fig. 3). Seventy-five percent of women in

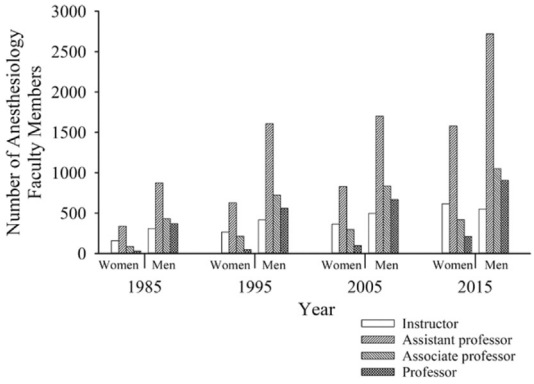

Fig. 3. Distribution of academic ranks among women and men anesthesiology faculty members, 1985 to 2015. The distribution of academic ranks among women anesthesiology faculty members has remained unchanged from 2005 to 2015 ($P = .27$). (*From* Bissing MA, Lange EMS1 Davila WF, et al. Status of Women in Academic Anesthesiology: A 10-Year Update. Anesth Analg. 2019 Jan;128(1):137-143. https://doi.org/10.1213/ANE.0000000000003691.)

academic anesthesiology departments hold junior faculty positions (instructor or assistant professor) and only 6.9% hold full professor appointments [18].

Regarding leadership in academic anesthesiology, most (89.6%) anesthesiology department chairs are men. Furthermore, most anesthesiology department chairs are white, and minority groups only hold 12.3% of these leadership positions. Minorities are more poorly represented as department chairs in anesthesiology than as department chairs across all specialties, where they make up 18.9%. Furthermore, only 3.8% of anesthesiology department chairs are minority women [9]. In addition, women made up only 31% of US anesthesiology residency program directors in 2017, and this underrepresentation has been unchanged since 2009 [19].

The American Society of Anesthesiologists (ASA) is the primary organization that represents physician anesthesiologists in the United States. This organization is one of the leading patient safety organizations in the country and creates clinical guidelines in addition to specialty-wide initiatives that shape the global practice of anesthesiology. Its governing body, the House of Delegates, acts as the leadership group that holds the keys to decision making for the ASA as a whole. A recent study by Toledo and colleagues [3] (2017) surveyed the ASA leadership to evaluate the gender and racial/ethnic diversity within this group. They reported that women and minorities are underrepresented in the leadership of the ASA, with women making up 21.1% and minorities 6.0% of the House of Delegates. Both proportions lag behind the fraction of women and minorities in the general anesthesia workforce (25% and 8.6%, respectively), the national medical workforce (38% and 8.9%), and the US population (50.8% and 32%).

CURRENT EFFORTS TO IMPROVE DIVERSITY AND INCLUSION

In alignment with corporate's evolving understanding of the benefits of workplace diversity, medical organizations are also embracing workforce diversity and inclusion as a means to address health care disparities and improve health care overall. In their 2016 "Resource Paper: Supporting Diversity in the Health Professions," the Council on Graduate Medical Education (COGME) [20] and the Health Resources and Services Administration (HRSA) state that expanding workforce diversity in health care could lead to greater access to care for underserved populations and better interpersonal interactions between patients and health professionals.

Research suggests that minority patients tend to receive better interpersonal care with improved patient satisfaction rates when they interact with medical providers of their own race or ethnicity. Non–English-speaking patients show greater medical comprehension and adherence to follow-up recommendations when patient-provider language concordance exists [21]. Underrepresented minority medical professionals have been shown to be more likely to serve racial and ethnic minority populations in underserved communities [22]. Furthermore, expanding diversity in the medical workforce has the potential to promote participation of underserved populations in clinical studies,

improving the ability to provide excellence in health care. Much of the business case for diversification of the medical workforce stems from translating the positive correlation with workforce diversity and patient satisfaction into satisfaction-centered reimbursement models. Overall, increasing diversity and inclusion in medicine has the potential to increase value and reduce costs.

Although diversity and inclusion are terms that have recently gained traction in headlines, efforts to cultivate a more diverse medical workforce are not new. Dating back to 1964, the Student National Medical Association (SNMA) is a national organization with local chapters at both allopathic and osteopathic medical schools across the country. The core mission of this organization is committed to "supporting current and future underrepresented minority medical students, addressing the needs of underserved communities, and increasing the number of clinically excellent, culturally competent and socially conscious physicians" [23]. SNMA has grown in size and support over the years and remains active in fostering diversity and inclusion in medicine. More recently, many programs and initiatives have been developed by academic institutions and professional organizations to continue progress and improve inclusion. Numerous diversity and inclusion committees have been formed in academic departments, training programs, and medical societies. Programs to encourage recruitment of a diverse future generation of physicians have flourished and scholarships/loans for medical students from disadvantaged backgrounds have multiplied [20].

Like the SNMA's many outreach programs, efforts to expose the nation's youth who come from diverse backgrounds to anesthesiology have been developed. The goal: recruiting a more diverse medical school applicant pool with interests in anesthesia and perioperative care. The ASA Committee on Professional Diversity has partnered with the American Medical Association (AMA) to hold the Doctors Back to School Program. Through this pipeline exposure program, anesthesiologists from different minority groups visit youth classrooms annually to talk to children about medicine and anesthesiology. This program aims to get children from underrepresented backgrounds interested in anesthesia and show that this is an attainable career goal through introducing the children to anesthesiologists who look just like them and come from similar backgrounds [24].

The Women in Anesthesiology (WIA) organization was recently established by Dr Rekha Chandrabose, who obtained a small grant through the ASA's Committee on Professional Diversity. WIA was created to promote the professional development of women physician anesthesiologists [25]. This organization was instrumental in advocating for the American Board of Anesthesiology (ABA) 2019 policy change regarding resident absence from training that exceeds 60 working days [26]. One benefit of this policy may be improved inclusion of resident physicians with diverse training paths caused by parental leave, family leave, or medical illness.

The Society for Neuroscience in Anesthesiology and Critical Care (SNACC) published a diversity initiative for their organization in 2017. Within this

initiative, potential action items included establishing a diversity committee and a diversity mentorship program. In addition, a mission statement was created that states, "SNACC members are committed to individual and organizational efforts to welcome a diverse group of scientists and practitioners and safeguard fairness, equality, and respect" [27]. SNACC has made additional efforts to encourage organizational diversity and inclusion, including the creation of the Women in Neuroanesthesiology and Neuroscience Education and Research (WINNER) program. This program celebrates successful women in neuroanesthesia and aims to provide support, mentorship, and sponsorship for early-career and midcareer women in anesthesiology [28].

FUTURE STRATEGIES TO IMPROVE DIVERSITY AND INCLUSION

The business strategies to push innovation and growth through increasing diversity and inclusion can serve as a model for medicine. The first steps include leadership commitment to diversity and inclusion. CEO Action for Diversity and Inclusion is a business community endeavor to collectively advance diversity and inclusion, including sharing of strategies and collective accountability [29]. One business example of successful diversification and inclusion is IBM, whose CEO targeted identifying issues in various groups and addressing them to increase women and minorities in leadership positions, which has led to the ability to find new markets and drive growth [30].

Promotion of diversity in medicine and specifically anesthesiology will create a physician cohort that is able to collaboratively innovate and adapt to the future. As has been proved in business, actively seeking diversity will allow adaption to changes in the field and in the patients that are served.

Several specialties have created pathways to increase diversity [31,32]. One option is to create avenues for early exposure to anesthesia in medical school, with voluntary selective time with anesthesiologists, and information sessions about the specialty. Summer internship programs have been used in other specialties to provide further opportunities [33]. Mentors for women and minorities who show interest will allow ongoing exposure and can lead to more competitive applicants.

Academic anesthesia departments can create policies to actively consider women and minorities for open positions. Improving opportunities for women and minorities to advance can be provided by active mentorship and sponsorship for junior faculty. A family-friendly departmental environment that encourages things such as committee meetings at optimal times and childcare at national meetings can limit loss of peer support and encourage engagement after a leave is taken.

SUMMARY

Although much work is yet to be done, progress toward training a more diverse and inclusive future medical workforce has occurred. As previously noted, most medical students are now women, with 53.4% of matriculating students in 2018 being women according to the AAMC Annual Student

Questionnaire [32]. These data also showed growth in the representation of minority medical students that now seems to be mirroring changes in US population demographics. Forty-five percent of medical students matriculating in 2018 self-identified their race/ethnicity as belonging to a minority group (American Indian/Alaska Native 0.9%, Asian 24.5%, black/African American 8.3%, Hispanic/Latino 11.0%, Native Hawaiian/Pacific Islander 0.3%). Approximately 7.7% of matriculated medical students reported being bisexual, gay, or lesbian, and 0.7% reported identifying with a gender that is different from their sex assigned at birth.

Trends of increasing gender diversity in the future medical workforce have also been observed in anesthesiology training programs, in which 36.8% of residents are women [9]. Against the changing backdrop of national population demographics in the United States, the lack of diversity and inclusion among anesthesiologists has the potential to magnify health care disparities, adversely affect outcomes, depress patient satisfaction scores, and negatively affect reimbursement.

Fostering further progress to expand the diversity of physicians trained in anesthesiology has the potential to bolster scientific innovation, increase participation of underrepresented populations in clinical studies and thus increase the likelihood that research outcomes will benefit underserved individuals, and expand public trust in the health care system [34]. Ultimately, moving toward greater diversity in anesthesiology may allow the optimization of perioperative outcomes, similar to the gains that COGME aims to achieve in improving care for all.

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