

The Lack of Diversity in Healthcare: Causes, Consequences, and Solutions

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ABSTRACT

As the demographics of the country continue to rapidly change and as the increasing numbers of health disparities in underrepresented ethnic groups are identified, the future healthcare of the nation will become much more dependent upon a diverse healthcare workforce. The current numbers both in the health professional programs and in practice must be viewed as inadequate, despite efforts over many years designed to address this underrepresentation. To address this issue in a substantive way, commitments must be made at all stages of the “pipeline” for changes to occur. First, however, the reasons for the existing problem must be acknowledged so as to implement those changes. In this report, which focuses primarily on allopathic medicine, we have identified several major contributory factors leading to the lack of diversity, the impact and then offer solutions to correct, or at least minimize, the problem.

Keywords: ■ Disparities ■ Diversity ■ Healthcare Workforce ■ Minorities ■ Pipelines

and graduation of racial and ethnic minorities from medical school. In 2007 the AAMC launched the Holistic Review Project that developed admissions tools and resources that medical schools could use to increase diversity (AAMC, 2010). This was followed in 2015 by a competency-based Medical College Admissions Test (MCAT), informed by reports from both AAMC and the Howard Hughes Medical Institute (AAMC-HHMI Committee, 2009). Although some of these efforts resulted in changes, the gains were limited and even reversed for a number of reasons including major national anti-affirmative action efforts, such as the University of California Regents decision to prohibit the use of race, religion, sex, color, ethnicity, or national origin as criteria for admission (decided in 1995, effective 1997); Prop 209 in California (1996); and Initiative 200 (1998) in Washington State. These efforts along with other similar ones in a number of states resulted in many legal challenges to considering race as an admission factor—including *Regents of the University of California v. Bakke* (1978), *Gratz v. Bollinger* (2003), *Grutter v. Bollinger* (2003), and *Fisher v. University of Texas* (2013 and 2016). In fact, at the time of writing, the Supreme Court is still hearing and ruling on these and newer challenges to affirmative action. Most recently, federal guidance from President Obama's administration on affirmative action that encouraged schools to embrace diversity was revoked in June 2018 by the Trump administration. As evidence of the deleterious effect of the legal uncertainty and removal of affirmative action, while Black students represented 6.4% of California high school seniors who graduated in 2013, they made up less than 4% of new enrollees at University of California (UC) Berkeley, which is bound by Proposition 209 (Chinoy, 2016). The situation is even worse for Latino students who represented 47% of California high school graduates in 2013, but only 17% of UC Berkeley enrollees.

Considerable evidence has now been published that increasing the number of healthcare providers from diverse backgrounds, including those from underrepresented racial and ethnic groups, rural communities, and low socioeconomic status (SES), is a vital step in tackling both the projected primary-care physician shortage and healthcare disparities, as well as providing more patient-centered and patient-concordant care (AAMC, 2018a; Jackson, & Gracia, 2014; Marrast, Zallman, Woolhandler, Bor, & McCormick, 2014; Peek, Wilson, Bussey-Jones et al., 2012; Street, O'Malley, Cooper, & Haidet, 2008). Thus, it is more important than ever to tackle the underrepresentation of diverse students among health-care providers, and an obvious first place to start is to look at the matriculation of individuals who are considered underrepresented in medicine (AAMC, 2004). Unfortunately, data collection and transparency are mixed for professions other than allopathic, and more recently osteopathic, medicine—a problem that needs to be solved if we are truly looking for data-driven solutions. In addition, the nature of underrepresentation in other professions is also likely to be different—for example, in the nursing profession only 12% of the total registered nurse workforce in 2015 was male (Buerhaus, Skinner, Auerbach, & Staiger, 2017). However, we believe that trends seen in medicine are largely reflected in other health-care professional schools.

Tables 1 and 2 show trends in matriculation to both allopathic and osteopathic medical

Table 1. Number and Percentage of First-Year Matriculants to U.S. Allopathic Medical School in 1980 and 2016 by Race or Ethnicity Compared to U.S. Population Data

Race or Ethnicity	1980–1981			2016–2017		
	Matriculants Number	US Population		Matriculants Number	US Population	
		Percent of Total	Percent of Total		Percent of Total	Percent of Total
American Indian or Alaska Native	63	0.4	0.6	54	0.3	1.3
Asian ^a	679	4	1.5	4,475	21.3	5.8
Black or African American	999	6	11.7	1,497	7.1	13.4
Hispanic or Latino	807	4.9	6.4	1,335	6.3	18.1
White	13,884	83.7	83.1	10,828	51.5	76.6
Native Hawaiian or other Pacific Islander, multiple-race, other, unknown, and non- U.S. citizens and nonpermanent residents ^b	155	0.9	3	2,841	13.5	0.2
Total	16,587			21,030		

Note. Modified from the following sources: (U.S. Census Bureau), American Medical College Application Service, archived January 2004; AAMC Data Warehouse: Applicant Matriculant File as of September 18, 2017.

^aAsian and Pacific Islander combined; ^bChanges in data collection and race/ethnicity categories are likely to be underestimating this number compared to 2016.

practices to varying degrees and often only after applicants have met minimum criteria for admission (Drees, Nairn, & Nivet, 2014). For the most part however, as already mentioned and seen in Tables 1 and 2, changes in matriculation of diverse applicants have been limited and in the case of American Indian or Alaska Native matriculants there has been an overall decrease in actual numbers. The situation for Black males in medicine is worth special attention and has resulted in a significant report and a recent workshop (AAMC, 2015; National Academies of Sciences Engineering and Medicine, 2018). The data in Table 3 clearly show that not only is the percentage of Black/African American matriculants stagnant, but also if one looks deeper at the number of U.S.-born African American males who will likely have the most concordance with the growing U.S. Black male population and serve as role models for Black youth these numbers are embarrassingly low.

Table 3. Black/African American Male Matriculation to Allopathic Medical School 2015–2018

	2015–2016		2016–2017		2017–2018		2018–2019	
	<i>Matriculants</i>							
	<i>Number</i>	<i>Percent of Total</i>	<i>Number</i>	<i>Percent of Total</i>	<i>Number</i>	<i>Percent of Total</i>	<i>Number</i>	<i>Percent of Total</i>
All Black/ African American Males	556	5.2	581	5.5	572	5.4	604	5.8
US Born African American Males	271	2.5	273	2.6	257	2.4	284	2.7

Note. Source AAMC Applicant and Matriculant Data (AAMC, 2018b) Table A-12.

healthcare diversity including those that are only now beginning to be fully recognized; and second, to suggest some remedies to fix these as well as those further up the pipeline, perhaps using some innovative tools of intervention.

FACTORS NEGATIVELY AFFECTING DIVERSITY

Educational Barriers

Pre-K and K–12. A recent report from the National Women’s Law Center (Onyeka-Crawford, Patrick, & Chaudhry, 2017) highlights the implicit biases faced by girls of color starting as early as preschool. The “Let Her Learn” survey found that in the K–12 group Black girls are 5.5 times more likely and Native American girls 3 times more likely to be suspended than White girls. The report also noted that Black and Native American girls are disproportionately subject to discipline (suspension and expulsion) that leads to loss of class time. Of particular concern is that this trend is observed even in pre-K classes where although Black girls represent only 20% of the students enrolled, they are suspended one or more times at a rate of 54%! Black children in these programs are 3.6 times as likely to be suspended as their White classmates. These trends have been seen and reported previously (Losen, & Skiba, 2010; Wallace, Goodkind, Wallace, & Bachman, 2008) where it was documented that suspension and expulsion rates for Black, Hispanic, and American Indian youth are substantially (two to five times) greater than for White youth. Furthermore, it has been noted that

Table 4. National Assessment of Educational Progress, National Reading Scores for 2017

	<i>White</i>	<i>Black</i>	<i>Hispanic</i>	<i>Asia/ Pacific Islander</i>	<i>Asian</i>	<i>Native Hawaiian/ PI</i>	<i>American Indian/ Alaska Native</i>	<i>Two or More Races</i>
Grade 4	231	205	208	238	241	210	203	226
Grade 8	275	249	255	282	284	255	253	272

Note. Source: The National Assessment of Educational Progress: Reading Assessment (Department of Education, 2017).

out similar disparities are seen in the 8th-grade reading level for low SES students, English Language Learners, and students with parents whose education levels are less than those who graduated from college.

Another factor that enters into any such discussions relating to a system not functioning optimally (or sometimes even minimally) are economic disparities, which again are increasingly contributing to the problem. The factors that relate directly to these types of disparities include inadequate transportation to better public schools, lack of school resources, lack of intellectual engagement, limited activities and opportunities, and lack of access to proven and tested mentors. A study by the Education Trust (Morgan, & Amerikaner, 2018) concluded that in the United States many school districts that serve large populations of students of color and students from low-income families receive far less funding than those serving White and more affluent students. The report showed that school districts serving the largest populations of Black, Latino, or American Indian students received roughly \$1,800—or 13% less per student in state and local funding than those serving the fewest students of color. A similar situation was reported for school districts serving largely students from low-income families where the gap is approximately 7%, or \$1,000 less per pupil on students compared to those school districts educating wealthier families. In a study of 38 elite colleges, Chetty and his colleagues (Chetty, Friedman, Saez, Turner, & Yagan, 2017), showed that more students came from the top 1% of the income scale than from the entire bottom 60%. Moreover, even among Pell Grant recipients who scored above the median of 1120 on the SAT there is no diversity in that 81% are White (Carnevale & Van Der Werf, 2017). A recent study (Carnevale, Werf, Quinn, Strohl, & Repnikov, 2018) extended this analysis and showed that at selective public colleges that typically spend nearly three times more on instructional and academic support as public open-access colleges, the enrollment of Whites has increased over the past decade more than the enrollment of Hispanics and African Americans combined.

Thus, it should be obvious that many factors contribute negatively to the preparation of URM students, even before they reach their college years, many of which relate directly to educational issues but also many related to other factors including social, cultural, and lifestyle.

in themselves brings into question the term “standardized tests,” especially as a criterion for admissions.

Since it is a combination of all of these factors taken together that dictate acceptance to professional school programs, the undergraduate experiences represent a critically important factor in the successful progression through the pipeline, especially for the URM students. In fact in a recent report (Jaschik, 2018b) on college admissions criteria, many of the same factors in turn apply to professional school admissions with various priorities, such as previous schooling, race, first-generation status, financial status, gender, and legacy status, in addition to grades, test scores, writing sample, and letters of recommendation.

Professional School. Despite the hope that entry to professional school programs is an objective process, data show more and more subjectivity in admissions decisions. Over the years, much of this has centered around race (i.e., affirmative action), with little if any movement toward more objectivity, despite boasts of holistic admissions that indeed were designed to look at more than just numbers. Interestingly, more recently the affirmative action controversy has now centered on Asian American groups with the issue being perhaps that subjectivity and—in the words of the Department of Justice (2018) — “vague” metrics are playing too much of a role in admissions decisions. In fact, the other aspect of this specific controversy, which is that the prejudices are not necessarily solely around race but also socioeconomic issues (i.e., the richer and more privileged applicants), is nothing new. This issue is currently in the courts and could end up in the hands of the Supreme Court where a number of other affirmative action cases have been decided.

Along those same lines, much evidence has been presented that shows a parallelism between race/ethnicity and socioeconomic status when it comes to performance on standardized tests, for many of the same reasons. Additionally, if one looks at the most recent attempt to address underrepresentation, the adoption of MCAT2015, data are beginning to emerge that scores relative to URMs are still routinely below the 50th percentile (Table 5)—just as was seen with the “old MCAT” (Elks et al., 2018). A major component of these “unchanging” scores especially in the CARs section likely relates directly to the aforementioned factors, including reading ability and inadequately funded K–12 schools.

These “below the median” MCAT metrics will directly impact the effectiveness of holistic admissions, which has been promoted as an effective way to move away from the “numbers games.” In theory, the use of holistic admissions is exactly what many supporters and advocates of equity have advanced, especially those working with URMs. Realistically, however, considering the number of applicants to the current healthcare professional schools, logistics of support staff alone essentially prevents a true holistic review of all—or even most—of those applicants. This is especially relevant to reading personal statements, which for many of the URMs truly reflect the struggles and successes in getting to where they are. As such, strong URMs (as judged by factors other than MCAT and GPAs) are eliminated due to the numbers alone, severely hampering the movement toward diversity.

separation and divorce (60 years ago 20% of children were born to parents who lived in a single-parent household; now that figure is nearly 70%), exposure to violence outside the home, living in unsafe neighborhoods, property crimes, homelessness, bullying, racial discrimination, and income insecurity. Not surprisingly, the prevalence of ACEs is lowest among Asian, non-Hispanic children, and in most regions is highest among Black, non-Hispanic children. As an example, 55% of Latina girls, 38% of Asian/Pacific Islander girls, and 30% of Black girls worry about a friend or family member being deported whereas 19% of Black girls ages 14–18 reported experiencing homelessness (Onyeka-Crawford, Patrick, & Chaudhry, 2017). Of all of these ACEs perhaps the most striking is that the suicide rate for Black children 5–12 years of age is nearly twice that of White children in the same age group (Bridge et al., 2018; Pechtel & Pizzagalli, 2011).

Substantial research has now documented that adverse childhood experiences can significantly contribute to negative adult physical, educational, and mental health outcomes (Gilbert et al., 2015; Hughes et al., 2017; Pechtel & Pizzagalli, 2011). A systematic study has provided compelling evidence that multiple ACEs had a strong correlation with increased risks of developing mental health issues, alcohol and drug abuse, and self-directed violence (Gilbert et al., 2015). Another recent study (Metzler, Merrick, Klevens, Ports, & Ford, 2017) using data from 10 states and the District of Columbia showed that participants with higher ACE scores are more likely to report noncompletion of high school, unemployment, and living in a household below the federal poverty level.

Importantly, as we examine the effects of ACEs, it is evident that early life experiences have the ability to trigger epigenetic modifications, effectively altering brain structure by changing gene transcription. Examples of such modifications include: (1) possibly permanently altering the stress-response system and affecting the glutamatergic system (Szyf, 2009); (2) chronic toxic stress resulting from ACEs impacting the neurological and immunological function (Bierhaus et al., 2003); (3) an actual structural variation in gray and white matter (McCrary, Brito, & Viding, 2011); (4) altered neurotransmitter levels and signaling involving molecules such as serotonin and GABA; and (5) enhanced ACTH and cortisol response to stress/stimulation (Doom & Gunnar, 2015). One does not have to be a neurobiologist to recognize the significance of these effects especially in URM and low SES individuals who are often most prone to the circumstances that cause ACEs.

An AAMC (2018d) examination of the data for medical school students relative to financial considerations shows the extreme socioeconomic disparities that currently exist in medical schools. In the 30-year span from 1988 through 2017, between 73% and 79% of medical students came from families earning above \$74,870 (the top two quintiles from the 2016 census), and in the last 11 years of the period the range was actually 76% to 79%. In 2017, nearly one-quarter of first-year U.S. medical students came from families where the parental income was above \$225,251. Additionally, but not surprisingly, using a SES-Education-Occupation (SES-EO) indicator, the correlation between income and parental education and occupation

in a major way to the underrepresentation of ethnic minorities over the years; the disparity in scores, especially for URM students, is still observed (Elks et al., 2018). The issue then is that the changes need to be made across all of the existing systems and not just within one program or institution. This in itself unquestionably represents a major problem as systems change inordinately slowly.

Second, changes at the level of admissions committees (both for medical school and for residency selection) must be made. For example, initiatives have been successfully undertaken at one major medical school that can address some of those factors that create minority underrepresentation (Capers, Mcdougle, & Clinchot, 2018), including crafting a vision statement that speaks directly to diversity and that is highly visible at all times. Granted, most institutions have diversity statements; however, when coupled with some of the other admissions committee initiatives, the statement is not just a "statement." These other initiatives include: (a) anonymous voting by the committee members, (b) a sizable group of faculty screeners to minimize impact of individual biases, (c) requiring members to take unconscious bias training, (d) blinding interviewers to academic metrics; and (e) adopting a "true" holistic review process. Note here that, similar to a diversity statement, in a recent practice model study nearly half of 171 health professions schools indicated that they use some element of a holistic review process (Drees, Nairn, & Nivet, 2014). However, in the same report it was noted that the assessment of non-academic criteria in the initial review was "after applicants have met the minimum criteria for admission," which are presumably GPAs and MCAT scores. Indeed only 4 of the 171 schools reported that "Non-academic criteria are the most important criteria during the initial screening process." In addition, 57 schools reported that they were not using any form of holistic admissions. Clearly then in order to truly have a holistic review would require a significant expansion of the staff to evaluate the applicant pool, which of course in turn would require additional funds for training, both staff and faculty. However, if one truly wants to institute holistic reviews, this is a necessity. Finally, a major initiative is to ensure that more women, minorities, and younger people are appointed to the committees. This initiative requires specific attention and effort as most committee appointments are voluntary, and as such diversification of the committee presents a dilemma for many from those groups as they strive for promotion and tenure, especially considering the "minority tax" (Cyrus, 2017) and many other "needs" for them to serve in the ranks. However, if some incentives could be provided, this initiative would make a huge difference in committee considerations of the underrepresented group applications.

Third, an important component of the faculty involvement on committees at all levels in the pipeline would involve not just training but also a willingness to consider the need for advocacy and the advocate perspective based on various aspects of the levels of evaluation involved. Given the new evidence of ACE and the life-long consequences that result, this advocacy will be even more critical. In fact at the 2017 National Association for College Admission Counseling's national conference, Dr. Shaun Harper from University of Southern

CONCLUSION

It should be obvious that a significant number of changes have to be made to address the underrepresentation problem and as such, the diversity in the health professions. Moreover, these changes have to occur at all stages of the pipeline, even including a recognition of the importance of early childhood experiences in preschool. Along with interventions at all stages, one also has to include biological issues associated with racism and discrimination as many of these social and behavior issues genuinely affect psychological well-being, particularly associated with educational success. As such, it will require not only the active involvement of counselors, teachers, advisors, and staff at all levels of the pipeline but also possibly training efforts for the interventions to be effective. The latter point is most critical as changing attitudes is often close to impossible. Unquestionably, these changes will take a long time to implement and at a significant cost. However, as mentioned earlier, some efforts on an institutional basis have begun that can be used as a template for others to follow. One such example includes the effects of using several of the aforementioned admissions efforts reported by Ohio State University COM (Capers, Mcdougle, & Clinchot, 2018) where the number of URM students rose from 19% in 2014 to 26% in 2016. Additionally, in a recent report (Levitan, 2018) Touro College of Osteopathic Medicine (TouroCOM), indicates that in this year's incoming class, approximately 27–28% are students of color. Although specific efforts in accomplishing this increase (from ~18%) were not elucidated, strategies included participation in a number of outreach and recruitment efforts, particularly at HBCUs and MSIs, while other efforts included a Masters Pipeline Program, a Med-Achieve Program (targeting high school students) and a COMPASS Welcoming event that matches current students with applicants. All of these activities are designed to pay individual attention to applicants as well as incoming and current students. Moreover, the Community Advisory Board, which is composed of Harlemites, such as former elected officials and doctors, commits to assisting students in attending, affording, and succeeding at TouroCOM. Finally, with the commitment of the institution devoted to the historical roots of the community, agencies such as the NAACP has also been involved. This type of overall academic and community involvement is necessary to address the many factors that contribute to the underrepresentation of minorities in healthcare. The bottom line—when considering the changing demographics of the country along with the increasing number of health disparities associated with the minority populations, dealing with this sooner rather than later is an absolute must.

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