Analysis IN BRIEF

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# Trends in Racial and Ethnic Minority Applicants and Matriculants to U.S. Medical Schools, 1980–2016

Increasing diversity in the physician workforce is a key strategy for addressing public health needs, and it is important to consider in efforts to address physician shortages.[1-3] Predicted workforce challenges are further complicated by the persistent health inequities and health care disparities disproportionately affecting racial and ethnic minority communities and low-income households.[4] There have been significant efforts to increase diversity in medicine, given its benefits on multiple levels, from the learning environment to the clinical setting.[5] For example, research shows that diversity in the student body contributes to cognitive complexity, civic mindedness, and increased knowledge and understanding of other cultures and experiences.[6,7] Data suggest that there is still a need to focus on increasing the number of black or African American, Hispanic or Latino, American Indian or Alaska Native, and Native Hawaiian or other Pacific Islander physicians. However, medical school admissions leaders report numerous challenges to recruiting diverse talent.[8]

**Figure 1. Increase in U.S. medical school applicants, 1980 to 2016.**


**Table 1. Number and Percentage of U.S. Medical School Applicants in 1980 and 2016 by Race or Ethnicity**

| Race or Ethnicity | 1980 | | 2016 | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| American Indian or Alaska Native | 156 | 0.4% | 127 | 0.2% |
| Asian | 1,643 | 4.6% | 10,906 | 20.6% |
| Black or African American | 2,507 | 7.0% | 4,344 | 8.2% |
| Hispanic or Latino | 1,764 | 5.0% | 3,300 | 6.2% |
| White | 29,256 | 81.1% | 25,544 | 48.2% |
| Total | 36,083[1] | | 53,042[2] | |

*Source: AAMC Data Warehouse: Applicant Matriculant File, American Medical College Application Service, archived January 2004; AAMC Data Warehouse: Applicant Matriculant File as of September 18, 2017.*

1. Total includes 757 (2.1% of applicants) unknown and non-U.S. citizens and nonpermanent residents not included in the analysis.
2. Total includes 8,821 (16.6% of applicants) Native Hawaiian or other Pacific Islander, multiple-race, other, unknown, and non-U.S. citizens and nonpermanent residents not included in the analysis.

In this *Analysis in Brief* (*AIB*), we examine demographic trends in medical student applicants and matriculants since 1980, with a focus on the representation of individuals who identify as black or African American, Hispanic or Latino, and American Indian or Alaska Native. We also review the acceptance rates, facilitating a comprehensive overview at each admissions milestone—application, acceptance, and matriculation—for diverse applicants to U.S. LCME-accredited (Liaison Committee on Medical Education) medical schools.

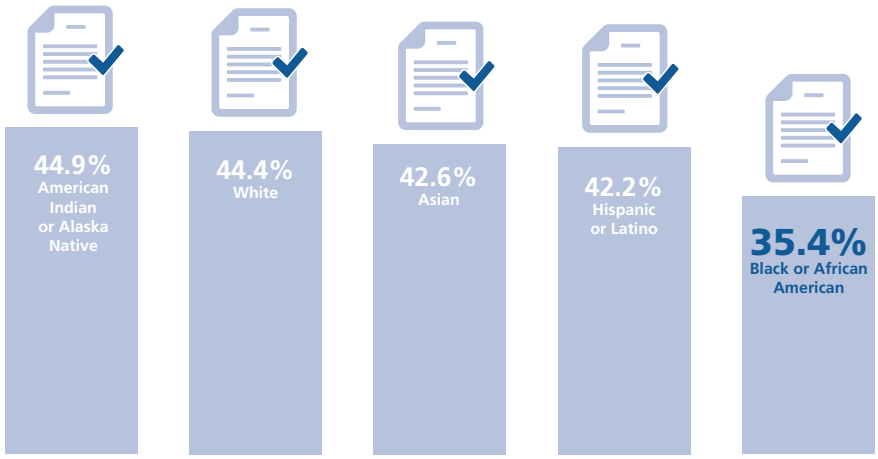
U.S. Department of Education data show that the proportion of black or African American, Hispanic or Latino, and American Indian or Alaska Native undergraduates enrolled in four-year U.S. universities rose from 11.7% (887,800 of 7,565,400) in 1980 to 26.2% (3,536,000 of 13,492,900) in 2014.[9] This growth is mirrored in the bachelor's degrees conferred over a similar period. The proportion of black or African American, Hispanic or Latino, and American Indian or Alaska Native students receiving bachelor's degrees rose from 9.2% (86,098 of 934,800) in 1980–1981 to 21.6% (404,496 to 1,869,814 ) in 2013–2014.[10] From 2002 to 2013, the number of students earning science and engineering bachelor's degrees rose for all racial and ethnic groups.[11] This rise and the overall increases in racially and ethnically diverse students earning a bachelor's may imply that there is a pool of diverse talent that could be engaged to pursue careers in medicine.

## Methods

Data on medical student applicants and matriculants for this analysis are from the AAMC Data Warehouse: Applicant Matriculant File. We present the total numbers of applicants and matriculants and the proportions of applicants and matriculants by race and ethnicity from 1980 and 2016, the most recently available AAMC data.

In this analysis, underrepresented racial and ethnic minorities include individuals who identify as black or African American, Hispanic or Latino, and American Indian or Alaska Native. Native Hawaiians and other Pacific Islanders were excluded because many longitudinal metrics were unavailable for this group. Additionally, because the option to select multiple races and report one's racial and ethnic group as "in combination" was not available in 1980, to ensure the integrity of the longitudinal data, we did not

**Figure 2. Applicants' overall acceptance rate to U.S. medical schools by race and ethnicity, 2016.**




include respondents who self-identified as multiple races in this analysis. Only applicants, acceptees, and matriculants whose race or ethnicity was reported as "alone" (respondent selected only one race and/or ethnicity response) were included.

## Results

### Some Gains in Underrepresented Minority Applicants to Medical School

Over a 36-year period (from 1980 to 2016), the number of medical school applicants increased by 47.0%, from 36,083 to 53,042 (see Table 1 and Figure 1).[13,14] In contrast, the number of black or African American applicants increased by only 1,837 (from 7.0% to 8.2% of all applicants), and Hispanic or Latino applicants increased by only 1,536 (from 5.0% to 6.2% of all applicants), while American Indian and Alaska Native applicants declined by 29 (from 0.4% to 0.2% of all applicants).[13,14]

### Lower Acceptance Rates for Black or African American Applicants Than for Other Groups

In 2016, the overall medical school acceptance rate was 41.5% (22,012 of 53,042 applicants); the rate for black or African American applicants, 35.4% (1,538 of 4,344 applicants), differed most notably from this overall rate (see Figure 2).[13] White, 44.4% (11,341 of 25,544), Asian, 42.6% (4,646 of 10,906), Hispanic or Latino, 42.2% (1,393 of 3,300), and American Indian or Alaska Native, 44.9% (57 of 127) applicants all had similar acceptance rates for their racial or ethnic group. In contrast, in 1980, the medical school acceptance rate was 47.5% overall (17,141 of 36,083), and applicants from all racial and ethnic groups had similar rates of acceptance: white, 49.0% (14,335 of 29,256), Asian, 42.4% (697 of 1,643), black or African American, 41.6% (1,043 of 2,507), Hispanic or Latino, 47.2% (833 of 1,764), and American Indian or Alaska Native, 41.7% (65 of 156).[12]

### Slight Increases in Underrepresented Minority Matriculation Rates Over Time

The number of matriculants to U.S. medical schools rose from 16,587 in 1980 to 21,030 in 2016—an increase of 26.8% of the "available medical school seats" over the past 36 years (see Table 2).[14] In 1980, underrepresented racial and ethnic minorities represented 11.3% of medical school matriculants (Figure 3).[14] Overall, while the numbers of matriculants for black or African American, Hispanic or Latino, and American Indian or Alaska Native students have increased modestly over time, these data reveal that the gains have not been as robust as might have been expected in light of diversity efforts. The 1980 to 2016 data show that the number of black or African American matriculants increased by 498, and the number of Hispanic or Latino matriculants increased by 528.[13] The number of American Indian or Alaska Native matriculants declined by 9.[14] Despite the almost 27% increase in the number of available medical school seats over the past 36 years, the representation in 2016 of black or African Americans ($n$ = 1,497), Hispanic or Latino ($n$ = 1,335), and American Indian or Alaska Native ($n$ = 54) is only at 13.7%.[14]

When looking at the percentage of matriculants, by race and ethnicity, relative to the total number of matriculants in each group, results indicate that there has not been a notable increase in the proportion of matriculants in any group that has been underrepresented in medicine (URM) over three and a half decades (Figure 4):

- In 1980, black or African American matriculants represented 6.0% of the total class, compared with 7.1% in 2016.
- In 1980, American Indian or Alaska Native matriculants represented 0.4% of the total class, compared with 0.3% in 2016.
- In 1980 Hispanic or Latino matriculants represented 4.9% of the total class, compared with 6.3% in 2016.
- In 1980, white matriculants represented 83.7% of the total class, compared with 51.5% in 2016.
- In 1980, Asian matriculants represented 4.0% of the total class, compared with 21.3% in 2016.

## Discussion

This *AIB* provides a data overview of the admissions milestones—application, acceptance, and matriculation—of aspiring physicians from 1980 to 2016.

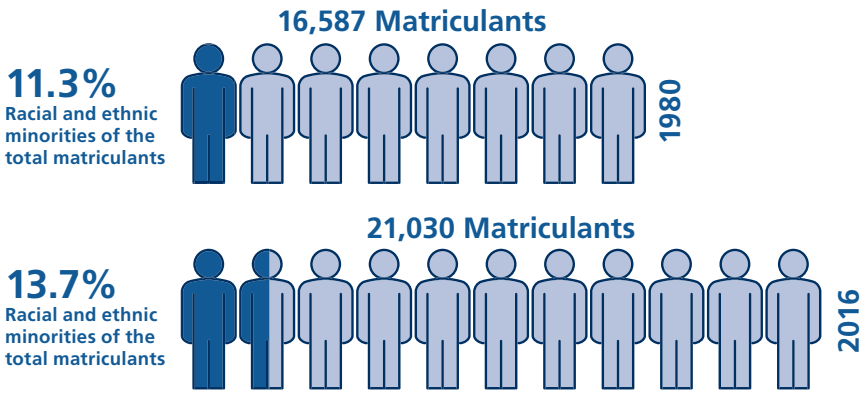
**Table 2. Number and Percentage of U.S. Medical School Matriculants in 1980 and 2016 by Race or Ethnicity**

| Race or Ethnicity | 1980 | | 2016 | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| American Indian or Alaska Native | 63 | 0.4% | 54 | 0.3% |
| Asian | 679 | 4.0% | 4,475 | 21.3% |
| Black or African American | 999 | 6.0% | 1,497 | 7.1% |
| Hispanic or Latino | 807 | 4.9% | 1,335 | 6.3% |
| White | 13,884 | 83.7% | 10,828 | 51.5% |
| Total | 16,587[1] | | 21,030[2] | |

*Source: AAMC Data Warehouse: Applicant Matriculant File as of August 22, 2017.*

1. Total includes 155 (9%of matriculants) unknown and non-U.S. citizens and nonpermanent residents not included in the analysis.
2. Total includes 2,841 (13.5% of matriculants) Native Hawaiian or other Pacific Islander, multiple-race, other, unknown, and non-U.S. citizens and nonpermanent residents not included in the analysis.

Figure 3. Increase in total U.S. medical school matriculants, 1980 to 2016.

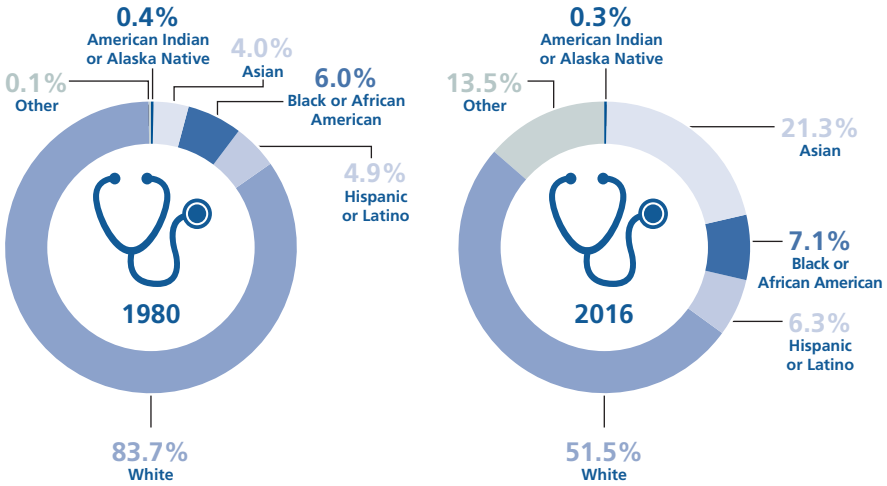



The data show that increases in black or African American, Hispanic or Latino, and American Indian or Alaska Native applicants since 1980 have not kept pace with gains in bachelor's degrees awarded and lag behind rates for non-URM groups. This trend (no increase in underrepresented racial and ethnic minority applicants to medical school) has occurred even as available matriculant slots have increased by more than one-quarter over this same period. Most notable are the decline for American Indians or Alaska Natives and the pattern of slow growth for black or African American matriculants. Factors influencing the rate of acceptance for black or African American applicants should be closely examined, considering the substantial difference between that rate and rates for the other groups. These data need to be considered alongside strategies to address workforce shortages and persistent health and health care disparities.

It is essential that leaders make data-driven decisions about diversity, inclusion, and equity policies. Research shows that physician diversity adds value to the health care system by expanding access to health care.[15,16] Racial and ethnic minority physicians are more likely to practice primary care than their white peers.[16] Black or African American, Hispanic or Latino, and American Indian or Alaska Native physicians are also more likely to practice in medically underserved areas.[16] Leaders and medical educators are often asked to defend the purpose, value, and benefit of diversity programs and initiatives. These data show that increases in the numbers of URM medical school applicants, acceptances, and matriculants have not kept pace with those of other groups, suggesting that there is a continued need to develop and sustain programs that support attracting diverse talent to U.S. medical schools. Such programs could start as early as elementary school.

More research in which disaggregated data are used is also needed to better understand the unique experiences of our indigenous communities—American Indian and Alaska Native—and those of black and African American communities with a deeply rooted history in the United States. Further, discussion of research results should include both numbers and percentages so that the data cannot be misconstrued. Future research should closely examine data that go beyond matriculation to graduation and graduate medical education to identify other data that will facilitate the development of physician workforce diversity. It is imperative that medical school deans, administrators, faculty, and other leaders leverage key data points to articulate the value and need for diversity in academic health centers. Increasing diversity will improve the quality of medical education and health care for all.

Figure 4. Percentage of U.S. medical school matriculants by race and ethnicity, 1980 and 2016.

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## Notes


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