

PREADMISSIONS PROGRAMS AND ENROLLMENT OF UNDERREPRESENTED MINORITY STUDENTS BEFORE AND DURING SUCCESSFUL CHALLENGES TO AFFIRMATIVE ACTION

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The association between the percent change in first-year and total underrepresented minority student enrollment and the presence of preadmission programs at Liaison Committee on Medical Education (LCME) accredited medical schools was assessed before and during successful legal and legislative challenges to affirmative action. The percent change in underrepresented minority student enrollment was determined by comparing enrollment data for the academic years 1993-94 and 1996-97. Schools were categorized as having either a negative or positive percent change in their enrollment of underrepresented minority students. Logistic regression was used to determine the association of the percent change in underrepresented minority student enrollment and the presence of a preadmission program while controlling for schools' financial support and the presence of postbaccalaureate programs.

Fifty-six percent of the included medical schools had preadmission programs. Schools with a positive percent change were significantly more likely to have preadmission programs compared with schools with a negative percent change. There was no association between the presence of preadmission programs and the percent change in total enrollment. These results indicate that the presence of preadmission programs is positively associated with increases in first-year underrepresented minority student enrollment during the successful challenges to affirmative actions. (*J Natl Med Assoc.* 1999;91:350-356.)

Key words: underrepresented minorities
◆ medical school admissions ◆ affirmative action

In the United States, accumulating evidence shows that compared with their non-underrepresented

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minority colleagues, underrepresented minority physicians are more likely to select primary care specialties, work in physician-underserved urban areas, provide medical care to minority patients, and disproportionately care for indigent and sicker patients.¹ Groups underrepresented in medical school enrollment, which is defined as having a lower proportional representation than their representation in the general population, include African Americans, Native Americans, and Hispanic Americans. For almost three decades, most US medical schools have developed programs that sought to increase underrepresented mi-

nority applicants, matriculants, and graduates. However, a recent surge of political and legal challenges may limit the effect of such programs.

Between 1995 and 1996, five events occurred that challenged affirmative action programs in institutions of higher education including schools of medicine. In 1995, the California Board of Regents banned the consideration of race, ethnicity, and gender in admission decisions at all of its institutions of higher education. This was followed in 1996 by the passage of the California Civil Rights Initiative (Proposition 209) that banned race and gender-based considerations in any area of state government (University of California, unpublished data, May 1995).² In 1995, three Texas law students successfully challenged the method of admitting underrepresented students at a state-supported law school, which led to a prohibition of considering race in admission decisions. The Texas case, known as *Hopwood v Texas*, was upheld by both the fifth circuit appellate court and the US Supreme Court.³ Similar to the effects of the Bakke case for which the Supreme Court did not ban the use of race as a consideration in admission decisions, declines in underrepresented minority student enrollment have been almost immediate.^{4,6}

The approaches used to increase the number of minority physicians have varied. Twice the Association of American Medical Colleges (AAMC) has set specific goals to increase underrepresented minority student enrollment in medical schools. The first, Project 75, was designed to discover, develop, and sustain college students' interest in medical careers. The project had as its chief goal the enrollment of a minimum of 12% underrepresented minority students in US medical schools by 1975.⁷ Although this goal was not reached, between 1971 and 1974, the underrepresented minority applicant pool and matriculants to medical schools increased more than 200%.⁸ This growth plateaued over the next 15 years after successful legal challenges to specific affirmative action programs.⁹ Compounding the difficulty of attaining this AAMC goal was the increase in the underrepresented population, which grew from 10% to 18% of the total US population, thus requiring an even larger underrepresented minority applicant pool.¹⁰

A second initiative at the beginning of this decade, the AAMC's Project 3000×2000, spurred a new increase in underrepresented minority applicants and matriculants.^{9,10} However, recent political and legal challenges have resulted in a new decline

in underrepresented minority applicants and new matriculants.⁴ The size of the underrepresented minority applicant pool has been a major factor in the inability to meet the AAMC goals, which, by some estimates, are modest.

A major approach to increasing the presence of underrepresented minority students in medical education has been the development of premedical preparatory programs. These programs focus on improving the quality and increasing the size of the applicant pool.⁸ Premedical preparatory programs may be characterized by the type of preparation and their location on the education continuum. These programs attempt to promote academic competency, interest in health careers, psychosocial health, or any other factors that might assure underrepresented minority students' success in gaining admission to medical school and matriculating.^{11,12} Most programs fall into three categories: preadmission, pre-matriculation, and postbaccalaureate. This article focuses on preadmissions programs.

The characteristics of preadmissions programs vary depending on their length, focus, placement along the academic continuum, and the targeted student population. Most operate within a defined period of time, eg, 6-8 weeks throughout the summer months. Some have a longitudinal component that continues during the regular academic year, usually on weekends. Preadmissions programs focus on screening students for their ability to handle a rigorous and demanding curriculum and on the development of general academic skills including reading, written and oral communication, time management, and test taking.

Participants in preadmissions programs vary depending on a program's primary goals. Programs whose principal goal is mentoring tend to focus on the precollege or early college students. These programs provide mentoring experiences through clinical exposure with health professionals and research with biomedical scientists. Programs emphasizing premedical basic academic skills development and Medical College Admission Test (MCAT) preparation generally target students who may be close to completing their basic premedical course requirements but have not taken the MCAT. Programs that screen students for their ability to handle a rigorous basic science curriculum tend to target students who have completed premedical course requirements and are ready to apply to medical school. All programs tend to incorporate exposure to role models

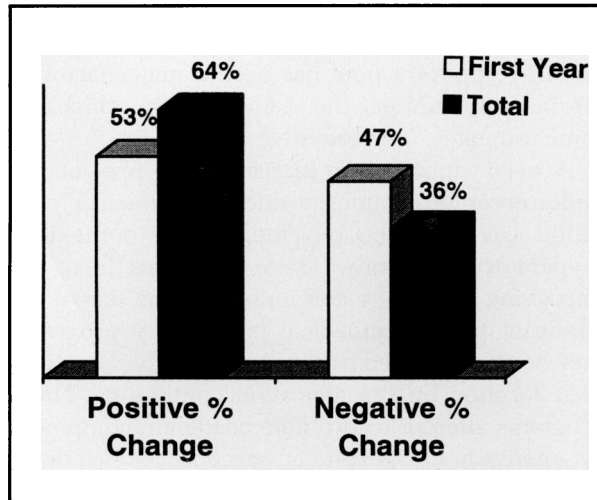


Figure 1. Percent change in underrepresented minority student enrollment, 1993-1994 versus 1996-1997.

and to the clinical and scientific aspects of medicine along with the development of basic academic skills.

Although preadmissions programs were developed to increase the applicant pool of underrepresented minority students who apply to medical school, there is little reported evidence that these programs have had their intended effect.¹³ One paper presented at the research forum of the AAMC's Group on Student Affairs Minority Affairs Section reported a positive association between first-year and total underrepresented minority student enrollment and the presence of preadmissions programs.

This study sought to determine whether preadmissions programs had an ameliorating effect on underrepresented minority student enrollment during and after the recent successful challenges to affirmative action. The study examined whether medical schools that had a positive percent change in underrepresented minority student enrollment during this period were more likely to have preadmissions programs than schools that had a negative percent change.

MATERIALS AND METHODS

Medical schools with Liaison Committee on Medical Education (LCME) accreditation were selected for this study. Excluded were medical schools specifically designed to educate underrepresented minority students and off-shore schools, as well as those schools that had no change in first-year underrepresented minority student enrollment.

Schools were classified as either having or not having a preadmission program in 1996 using the AAMC's "Minority Student Opportunities in US Medical Schools 1996."

All enrollment data were obtained from "Facts, Applicants, Matriculants, and Graduates 1987-1993" and the AAMC's "Minority Opportunities in United States Medical Schools 1998." The two dependent variables, percent change of first-year and total underrepresented minority student enrollment, were determined by subtracting the percent of underrepresented minority student enrollment during the 1993-94 academic year from that of the 1996-97 academic year. Logistic regression was used to assess the association between the presence of preadmission programs and the percent change in underrepresented minority student enrollment, while controlling for the presence of post-baccalaureate programs and schools' source of financial support (private versus public). Odds ratios (OR) were calculated as the measure of the association. Odds ratios greater than one suggest an association, those that equal one suggest no association, and those less than one suggest an association opposite than the predicted association. Ninety percent confidence intervals (90% CI) not including one determined statistically significant odds ratios. Because of the exploratory nature of this research and the limited precision of the independent variable, a less conservative cut point for statistical significance was selected.

RESULTS

First-Year Underrepresented Minority Student Enrollment

One hundred fifteen schools had changes in first-year underrepresented minority student enrollment. In 1996, only four of the 119 medical schools had no change in first-year underrepresented minority student enrollment. Thus, for first-year underrepresented minority student enrollment, data from 115 schools were used. Seventy-five (65%) schools had preadmissions programs. Forty-eight (64%) state-supported medical schools had preadmissions programs compared with 27 (36%) private schools. Forty (66%) state-supported schools had a positive percent change in first-year underrepresented minority student enrollment in contrast to 21 (34%) private schools.

Comparing the percent change in first-year underrepresented minority student enrollment for the 1993-1994 academic year to the 1996-1997 academic year, 61 (53%) medical schools had a positive

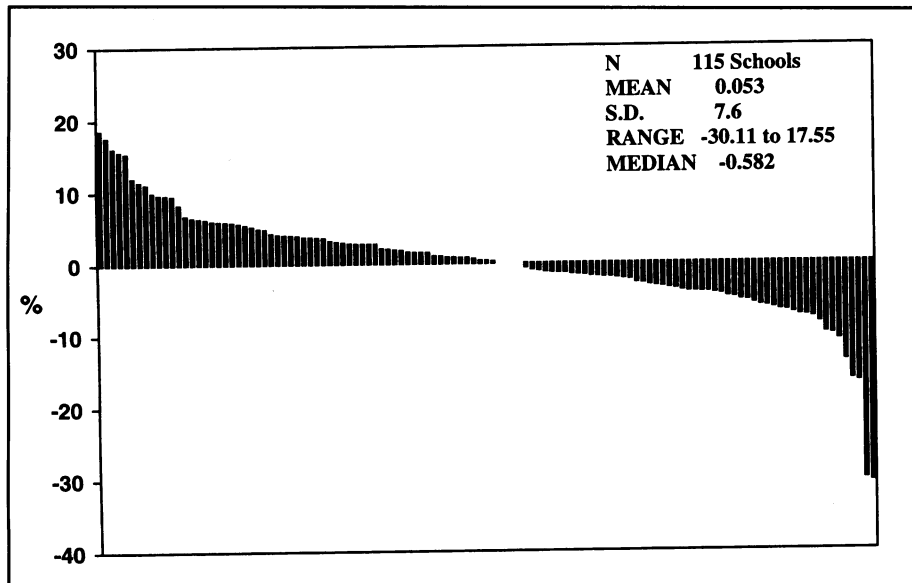


Figure 2. Percent change in first-year underrepresented minority student enrollment, 1993-1994 versus 1996-1997.

percent change and 54 (47%) had a negative percent change (Figure 1). The mean percent change for first-year underrepresented minority student enrollment was 0.055 (SD=7.6; range: -30.11 to 17.55; median: .582) (Figure 2). Of the 61 medical schools with a positive percent change in first-year underrepresented minority student enrollment, 45 (74%) had preadmissions programs. After controlling for school financial support and the presence of a post-baccalaureate program, schools that had a positive change in the percent of first-year underrepresented minority student enrollment were more likely to have preadmissions programs than schools that experienced a negative percent change (OR=2.2; 90% CI, 1.13-4.26) (Table 1).

Total Underrepresented Minority Student Enrollment

For total underrepresented minority student enrollment, 119 LCME-accredited schools were used in the analysis. The overall distribution of preadmissions programs among these medical schools, regardless of financial support, was similar to that of the schools used for first-year enrollment. Fifty (69%) public and 26 (57%) private schools had positive percent changes. Combining state and private schools 76 (64%) schools had a positive percent change in total underrepresented minority student enrollment (Figure 1). The mean percent change was 1.08 (SD=3.86; range: -11.75 to 17.5; median: -.84) (Figure 3). Of the medical schools with a positive per-

cent change, 47 (62%) had preadmissions programs compared with 30 (70%) schools with a negative percent change. There was no association between the percent change of underrepresented minority student total enrollment and the presence of a preadmissions program (OR=0.66; 90% CI, 0.33-1.3) (Table 1).

DISCUSSION

The majority of LCME-accredited medical schools have organized preadmissions programs, policies, and procedures to recruit, admit, retain, and graduate underrepresented minority students. This study, using national data, examined the relationship between preadmissions programs and the percent change of underrepresented minority student enrollment during and after successful challenges to affirmative action. When comparing first-year underrepresented minority student enrollment for the academic years 1993-1994 and 1996-1997, a statistically significant positive association was found between a positive percent change in first-year underrepresented minority student enrollment at US medical schools and the presence of preadmissions programs. No association was found between the presence of preadmissions programs and the percent change in total underrepresented minority student enrollment.

This study has several limitations. It is cross-sectional and does not allow one to determine prospectively the effect of preadmissions programs on underrepresented minority student enrollment. The

Table 1. Percent Change in Underrepresented Minority Student Enrollment and the Presence of Preadmissions Programs, 1993-94 Versus 1996-97

	Preadmissions Program		
	No. (%) Yes	No. (%) No	OR* (90% CI)
First-year enrollment			
Positive % change	45 (74)	16 (26)	
Negative % change	30 (56)	24 (44)	2.20 (1.13, 4.26)
Total enrollment			
Positive % change	47 (62)	29 (38)	
Negative % change	30 (70)	13 (30)	0.66 (0.33, .20)

*Controlled for school financial support and presence of a post-baccalaureate program with logistic regression.
OR=odds ratio and CI=confidence interval.

unit of analysis does not permit an assessment of the direct relationship between preadmissions programs and participants' success in gaining admission to medical school. Using the AAMC enrollment data increases the probability of data accuracy for the dependent variable. The descriptions of preadmission programs are based on reports by medical school minority affairs officers or student affairs deans whose involvement with these programs varies. Thus, there is an increased possibility that the published descriptions do not fully reflect program characteristics. However, it is unlikely that schools would report nonexistent programs.

The direct determination of the impact of preadmissions programs on participants' outcomes is hampered by the lack of consistent and complete databases that allow investigators to use participants as the unit of analysis as well as the lack of control groups.¹³ Most programs report data in aggregate and do not document basic student demographic and noncognitive characteristics nor do they consistently measure before and after assessments of academic skills and behaviors. The lack of sufficient data collection impedes the tracking of participants' success with gaining admission to medical school and with their graduation, specialty choices, and practice characteristics. The author conducted a study funded by the Health Resources and Services Administration Bureau of Health Professions that sought to collect data from 126 allopathic medical schools for 1981-1990. Information on the presence of preadmissions programs, program characteristics and sources of financial support, school academic policies, student

support services, specific services for underrepresented minority students, and a list of all participants and their social security numbers was requested. After contacting the medical school deans to identify the person who would provide this information, the initial mailing and several follow-up attempts resulted in 20 responses. None of the respondents could provide complete data on participants and program information. Some schools reported that data were not archived and were inaccessible to new program personnel, while other schools reported a lack of personnel to assemble the data.

To develop a uniform database that includes baseline student characteristics and measures of participants' achievement of the intended outcomes, agencies that fund these programs should collaborate on the development of a prototype database. All funded preadmissions programs should be required to use the database. Also, funding agencies should provide financial support for project evaluators and data management. An example of such an approach is the AAMC's Minority Medical Education Program (MMEP) funded by the Robert Wood Johnson Foundation. This program has a central application process that allows the development of a uniform database across all of the MMEP-funded programs. The structure of this database permits linkages with other AAMC databases. Thus, MMEP participants can be tracked from the admissions process through graduation and beyond.

Given these limitations and during a period of challenges to affirmative action programs, the results of this study support the argument that preadmissions

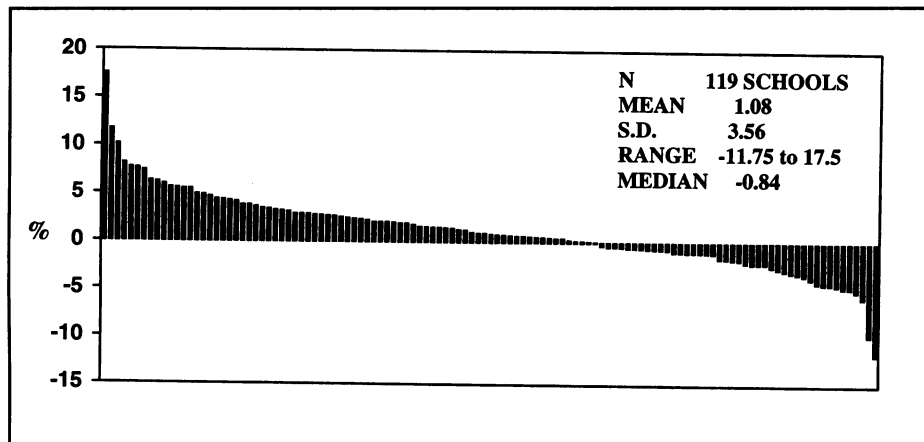


Figure 3.
Percent change in underrepresented minority student total enrollment, 1993-94 versus 1996-1997.

programs have a positive effect on first-year underrepresented minority student enrollment. This may be due to the direct effect on the program participants' ability to gain admission to medical school. Alternatively, the presence of preadmissions programs serves as a proxy for medical schools' commitment to educating a diverse physician population.

Based on these data, the impact of the recent affirmative action challenges appears to have begun prior to the conclusion of some challenges. Admissions decisions for the 1996-1997 first-year class were made prior to appellate and Supreme Court decisions in the *Hopwood v Texas* case and the approval of the California Civil Rights Initiative. Some medical schools had enrollment decreases of 30%. Overall, 47% of medical schools had a negative change in first-year underrepresented minority student enrollment.

Furthermore, the negative changes in underrepresented minority student enrollment were not just concentrated in those regions directly affected by these challenges.⁵ This suggests that medical schools are adverse to litigation, and in the face of potential litigation, admissions policies changed as reflected in the outcomes of the admission process. Similar trends were noted after the *Bakke* litigation.

Changes in total underrepresented minority student enrollment were not associated with the presence of preadmissions programs. Because the effect of the affirmative action challenges were just beginning in 1996, it may be too early to see changes beyond the first year. If medical schools continue to respond to these challenges by making their criteria for admissions more quantitative and restricted, a decrease in the overall enrollment of underrepresented minority students will be seen over time.

Another potentially negative effect of these challenges might be that schools' promotion and retention policies may become more restricted. Such changes may disproportionately affect underrepresented minority students, leading to further declines in underrepresented minority student enrollment.

Underrepresented minority physicians tend to provide medical care to at-risk populations that are underserved. Forces that decrease the production of underrepresented minority physicians may hamper the ability to address the medical needs of these populations. As affirmative action programs continue to be legally and politically challenged, it becomes important to justify the existence of programs that attempt to develop an adequate underrepresented minority applicant pool. The focus on programs for children in kindergarten through 12th grade is increasing; however, the effect of these programs on the underrepresented minority student applicant pool will not be immediately apparent.

CONCLUSION

This study's findings suggest that the presence of programs targeting undergraduate underrepresented minority students for careers in medical education ameliorates the adverse effects of successful affirmative action challenges on first-year underrepresented minority student enrollment. Thus, it is important to sustain preadmissions programs that demonstrate their positive effect on students' academic skills, behaviors, and success with gaining admission to medical school and graduating.

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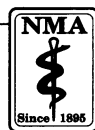
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Asthma Care in Community Health Centers: A Study by the Southeast Regional Clinicians' Network

George S. Rust, Virgil Murray, Hector Octaviani, Evelyn D. Schmidt, John P. Howard, Valerie Anderson-Grant, and Kim Willard-Jelks

Federally funded community health centers (CHCs) were surveyed to assess their ability to serve low-income asthma patients in the southeastern United States. Data were collected on CHC clinicians, pharmacy services, and patient characteristics. Twenty-six (74%) of 35 participating CHCs provided data on 83 distinct clinic sites in eight states, representing 898,977 billable patient visits to 318,920 people during the one-year study period. Participating CHCs provided 23% of all CHC patient visits in Region IV in 1995. Sixty-two percent of patients had a family income below poverty level. Almost 75% of the patients were uninsured or receiving Medicaid. Asthma was the diagnosis code for 2.04% of all medical encounters. Twenty-nine percent of sites were unable to provide medications for uninsured asthma patients, while 66% could provide drug samples. Thirty-three percent of CHCs had in-house pharmacies and 33% offered pharmacy vouchers. Eighty-two percent could provide beta-agonist inhalers, 54% could provide steroid inhalers, and 17% could provide peak flow meters. Federally funded CHCs provide care to many asthma patients from the highest risk segments of the population, but often do not have the resources needed to follow current clinical guidelines.

A Survey of the Ethnic and Racial Distribution in Orthopedic Residency Programs in the United States

Richard E. Grant

This study examined the racial and ethnic composition of orthopedic training programs in the United States. A questionnaire was mailed in January 1995 to chairpersons of 159 orthopedic programs in the United States. Eighty-nine (56%) responses were received. The distribution of orthopedic residents and fellows was as follows: white non-Hispanic, 84.2%; Asian, 6.6%; African American, 3.6%; Native American, 2.2%; Puerto Rican, 1.2%; Mexican American, 0.8%; and other Hispanic, 1%. African Americans and Hispanics were underrepresented in orthopedic training programs compared with their numbers in the general population. The percentage of residents in these two minority groups also were below goals established by the Council on Graduate Medical Education and the US Government's Healthy People 2000 report. In contrast, Native Americans and Asians were overrepresented. If racial balance is to be achieved in orthopedics, new incentives must be created to encourage more African Americans and Hispanics to enter orthopedic residency training programs.