

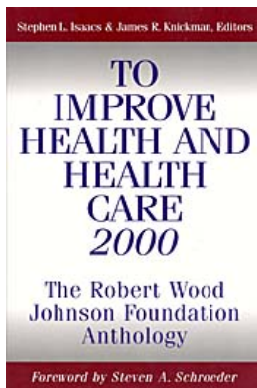
# The Minority Medical Education Program

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The authors dedicate this chapter to the memory of Herbert Nickens, M.D., who died on March 22, 1999. Nickens was the director of the Minority Medical Education Program and vice president for Community and Minority Programs at the Association of American Medical Colleges. The energy and passion he brought to the issues of minorities in medicine helped all involved keep their eyes on the prize, and ultimately to increase the number of underrepresented minority physicians.

Also, the authors acknowledge the Minority Medical Education Program directors and their staffs, who, in addition to being the heart and soul of the Minority Medical Education Program, contributed greatly to the work reported here. Kevin Harris of the Association of American Medical Colleges, who helped to develop and update the Minority Medical Education Program databases, and Julia Howard, who conducted interviews with program directors, also contributed greatly to this report.

## *Editor's Introduction*

The Foundation has had a long and continuing interest in increasing the number of minority physicians. Because minority patients often have poor access to health care services and tend to rely disproportionately on minority physicians for their care, the Foundation reasoned that increasing the number of minority physicians would help meet one of its goals: improving access to health care services. Among the Foundation's first grants in 1972 were medical school scholarships for needy minority students, women and residents of rural areas. In the 1970s, the Foundation also supported the Meharry Medical College and other historically black medical schools and made a number of grants to increase minority enrollment in predominantly white medical schools.

In the mid-1980s the Foundation's executives looked to expand their efforts to increase the supply of minority physicians. In 1984, for example, the Foundation authorized the Minority Medical Faculty Development Program, which supports postdoctoral research by junior faculty members committed to careers in academic medicine. In 1987, the Foundation authorized funding for the Minority Medical Education Program, a summer enrichment program designed to give qualified minority undergraduates the skills needed to apply successfully to medical school. The program was expanded and reauthorized in 1994 and again in 1998.

Lois Bergeisen, deputy director of the Minority Medical Education Program and assistant vice president of the Division of Community and Minority Programs at the Association of American

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Medical Colleges, which serves as the national program office for the Minority Medical Education Program, and Joel Cantor, former senior evaluation officer at the Robert Wood Johnson Foundation and current director of the Center for State Health Policy at Rutgers University, conducted an evaluation of the program. This chapter examines the history of the program and presents, in a nontechnical form, their findings, which were originally published in the September 2, 1998 issue of the *Journal of the American Medical Association*. Their most important finding was that participation in the program increased the chances of admission to medical school.

The authors take the opportunity to place the Minority Medical Education Program in the context of some of the social changes taking place in the country. As they note, considerations of race in the admissions process have become controversial; states such as California have banned race as an admissions criterion, and a number of court decisions are leading in the same direction. The Minority Medical Education Program does not advocate different admissions standards but, rather, helps minority students develop the skills that will enable them to compete on a more equal footing in the admissions process. Despite this important distinction, Bergeisen and Cantor observe that changing attitudes about affirmative action might affect the program in the future.

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U ntil the late 1960s, medicine was by and large a segregated profession, and just two medical schools—Howard University and Meharry Medical College—trained the majority of this nation's minority physicians. Census data from 1970 indicate that fewer than 6 percent of physicians were of any minority group. In contrast, all minorities made up more than 12 percent of the population. Formal efforts to increase the enrollment of underrepresented minorities in medical school<sup>1</sup> began with a task force formed by the Association of American Medical Colleges (AAMC), which in 1970 set population parity as a goal for representation of minorities. First-year minority enrollment increased from just under 3 percent in 1968 to 7 percent in 1970, and to 10 percent in 1974. Thereafter, the percentage of minority students enrolled in first-year classes hovered around 9 percent until the mid-1980s (see Figure 3.1)—in part because of reverse discrimination challenges in the late 1970s. No sizeable increases in minority enrollment occurred until 1992.

Between 1973 and 1976,<sup>2</sup> minority applicants experienced higher acceptance rates than nonminority applicants. But by 1977, even though minorities had relatively high acceptance rates, the rates began to

fall below those of all other applicants—a trend not reversed until 1992.

It was within the context of a widening gap between acceptance rates of minorities and other applicants and a plateauing of minority enrollment that the Robert Wood Johnson Foundation funded the Study of Targeted Premedical Programs on Medical School Minority Enrollment, which was conducted by the Educational Testing Service in 1984 and 1985.<sup>3</sup> The purpose of this study was to determine the best ways "to increase the number of minority physicians [by] understanding ... the characteristics of the existing pool and factors that appear to be associated with success in entering medical school." Two areas that the study examined were estimates of the proportion of minority students who receive medical school preparation services beyond the typical premedical college curriculum (such as examination preparation courses, summer science enrichment programs, mentoring programs and the like) and an examination of the effects of these kinds of services on students' acceptance to medical school. Although the report contained a number of recommendations, including early interventions—in junior and senior high school, for instance<sup>4</sup>—one recommendation in particular set into motion the development of the Foundation's Minority Medical Education Program: "Post-secondary intervention programs must target their resources on students with higher performance than many of those currently participating in such programs."

This recommendation was based on an analysis comparing minority medical school applicants who scored high on the Medical College Admissions Test (MCAT) but did not get into medical school with

When Sethabel Alvarado was seven years old, his father contracted diabetes. A robust Korean War veteran who worked 12-hour shifts at the Dolly Madison plant to put his six children through school, the senior Alvarado lost 60 pounds and his vision began to fail. "I saw this drastic change in my father, and it really spurred my interest in medicine," Sethabel says.

In Emporia, Kansas, there are no Hispanic doctors—no physicians who share the Alvarados' background, their culture, their first language. "People here will drive all the way to Mexico before they'll go to an American doctor, because of the language barriers and the cultural barriers," Alvarado says. "The American doctors just treat them with medicine—they don't have the cultural background to understand what else is going on." Alvarado wants to be the doctor who changes all that for the Hispanic population of Emporia.

But getting into medical school wasn't easy. His grades at Emporia State University were good—but his scores on the Medical College Admissions Test weren't as high as the grades, and as part of the first generation in his family to go to college, he had no one to guide him through the difficult medical school application process or to tell him what institutions were looking for. Alvarado applied to three medical schools and was rejected by them all. After a frantic Internet search for programs that could improve his chances of admission, he found the Minority Medical Education Program. That summer, he went to the University of Alabama, where he found mentors, role models, clinical experiences, and study guidance. The second time around, Alvarado applied to five medical schools and was accepted by every one. "The Minority Medical Education Program is what got me into medical school, flat out," he says. "It changed my life forever. My school gave me the science background, but the program gave me the understanding I needed to get into medical school and prepare for what I'm getting myself into. More than anything, I think it helped me grow up and mature as a person."

In the fall of 1998, he entered first-year class at the University of Kansas, sticking close to home and family—and he plans to come back as Sethabel Alvarado, M.D., the first Hispanic physician in Emporia, Kansas.<sup>6</sup>

low-scoring minority applicants who were accepted. The academic qualifications of the group of high-scoring applicants suggested that they were qualified for acceptance into medical school. The report noted, however, that these students believed they were not well informed about the application process or their chances for acceptance to medical school. One student noted, "There is a definite need for undergraduate pre-professional [health] students to understand the application process and how the other professional schools accept or reject an applicant."

A lack of knowledge about the application process for medical school affected the strategies that applicants used in deciding where to apply. This lack also affected the students' ability to write effective application essays and to develop strong skills for interviews—and the interview is one of the most crucial steps for acceptance to medical school. What was most notable about the students who scored high on application tests but didn't get into medical school was that they tended to participate less frequently in

medical or science programs, such as college premedical fairs. In contrast, the group of minority applicants who had lower scores on the Medical College Admission Test but were accepted to medical school were more likely to have been involved in some type of high school science or medical program and to have participated in health-related volunteer activities. The students in this group continued to show higher rates of participation in similar college activities as well, including participation in programs sponsored by the National Institutes of Health and the National Science Foundation. In addition, they were more likely to have had assistance with the application process, including help with the essay and preparation for the medical school interview.

Courtney Lowe returned to college after a 10-year interruption "to set an example for my kids." Mentors in the Minority Medical Education Program did the same for him—setting an example that convinced him he could succeed in medical school.

As an undergraduate at Connecticut's Trinity College, Lowe took a semester off to catch up with the bills. Ten years later, after he and his wife had a family, bought a house, and built their lives, he finally returned to college. Although he had always been interested in medicine, such a career seemed like an impossible goal to a Jamaican immigrant who was the first member of his family to go to college. Then Lowe got a letter about the Minority Medical Education Program—and suddenly the possibility of becoming a doctor seemed less remote. He participated in the University of Alabama-Birmingham's program two summers ago, and began his second year of medical school there in the fall of 1998.

"MMEP exposed me to everything that I wasn't sure about," Lowe says. "When you hear about doctors, it's as if they're gods. I wondered, could I be that person? Getting into the hospitals and having a mentor really helped me see that I could do it."

For a man who'd grown up on a diet of Marcus Welby, M.D., the black physicians and medical students involved in the program were a revelation. "I hadn't seen a lot of black doctors before," Lowe says. "It was great, being tutored by black students. In order to attain a goal you have to visualize yourself there, and when you see another person you can relate to, it's much easier."

Now in his second year of medical school, he's still struggling with the question of what type of practice to pursue. "Everything is so interesting that I want to do it all! In the next few years, I'll probably change my mind a lot." But he's sure of what he loves about medicine. "It's not the idea of the money. For money I could open a company, but I wouldn't enjoy it. With medicine, you get the chance to do something good for someone and see what it means to them. People appreciate what you do, and you feel like you're making a difference."

#### CREATING A PROGRAM TO ADDRESS THE PROBLEM

Based in large part on this research, the Minority Medical Education Program was developed to provide a summer enrichment experience for minority college students who appeared to have the academic credentials that would get them into medical school. The purpose of the program was not to expand the overall applicant pool but, rather, to increase the acceptance rates of those individuals with the requisite credentials.

Since the goal of the Minority Medical Education Program was to increase acceptance rates of individuals who were potentially acceptable to medical school admissions committees, it required participants to have at least a 3.0 overall grade point average with at least a 2.75 in sciences. Because these students had yet to take the exam for medical school admission, other educational test scores, such as the Scholastic Aptitude Test (SAT), were used as proxy measures. The background research also indicated that interventions earlier in a student's undergraduate career were more effective, so the program focused on students who were about to become sophomores and juniors. However, seniors and college graduates were also eligible to participate.

The Minority Medical Education Program was authorized by the Robert Wood Johnson Foundation in 1987, with funding available for up to eight program sites in various regions of the country. The program's curriculum was to be multifaceted:

- Academic enrichment in areas such as biology, chemistry and physics
- Mentoring experiences in clinical and research environments
- Assistance in preparing for the MCAT
- Counseling on the process of applying to medical school and on financial aid, including the personal essay and interview skills.

In addition, each program site would provide lodging, most if not all meals, a small stipend, and, in some instances, a travel supplement. The most ambitious element of the program was that each site was expected to enroll 180 students per summer. In contrast, most summer enrichment programs at that time, as well as now, enroll between 30 and 50 students.

Following its usual practice, the Foundation established a national program office, in this case at the University of Oklahoma School of Medicine, and solicited applications for program sites. Although the Foundation had authorized money for eight sites, only six were funded, in part because potential grantees had difficulty accommodating 180 students. The first cohort of grantees, all with previous experience with summer enrichment programs, were:

- Baylor College of Medicine

- Case Western Reserve University School of Medicine
- A consortium of seven Chicago medical schools—Chicago Medical School, the University of Chicago, the University of Illinois, Loyola, Northwestern, Rush and the Chicago College of Osteopathic Medicine
- Fisk Summer Premedical Institute
- University of Virginia School of Medicine
- University of Washington School of Medicine.

Each of these developed its own approach, with some having a stronger focus on students earlier in their college careers (Baylor and Fisk) and others targeting specific racial or ethnic groups such as Native Americans (University of Washington). In the program's first year of operation, a total of 685 students participated (an average of 114 per program site); in 1990, the number of participants increased to 785 (an average of 130)—still well below the target of 180 students per site. In 1991, the Foundation reduced the minimum class size requirement to 125, which was felt to be more realistic.

#### The First Program Review

In 1993, as the initial authorization for the Minority Medical Education Program was coming to an end, staff members from the Foundation, the national program office and the National Advisory Committee undertook a review of the program. Their analysis of data supported the notion that the program was effective. By the fall of 1993, a total of 1,169, or nearly 40 percent, of program participants from 1989 to 1992 had applied to medical school, and nearly 59 percent of them had been accepted. From the very first year that the program participants were eligible to apply to medical school, they had higher acceptance rates than other minority medical school applicants (see Figure 3.2).

Statistical comparisons of medical school acceptance rates between program participants and other minority applicants showed that significant differences in acceptance rates remained even after controlling for grades and admissions test scores.<sup>5</sup> Moreover, although the Foundation had lowered its enrollment target for each site from 180 to 125 participants per summer, the program appeared to be having a large-scale impact. The number of former program participants in the pool of minority medical school applicants grew from 3.3 percent in 1990 to nearly 13 percent in 1993 as more and more undergraduates participated in the program.

Despite the overall favorable review, site visits and analysis suggested that a reauthorized program needed to address three areas of concern:

- More emphasis was needed on academic enrichment rather than remedial work, and on learning in small groups rather than in lecture settings. In addition, efforts were needed to ensure that mentoring experiences were well developed for all students, and that counseling on application



to, and financing of, medical school was well incorporated into each program site.

- The quality of life (housing, the availability of meals, the disbursement of stipends, access to recreational activities) of program participants should be improved
- A centralized data system was needed to provide easy integration of program data within the AAMC databases

Before the review, the Minority Medical Education Program's national program office had been transferred to the Division of Community and Minority Programs at the AAMC. The program's deputy director was and continues to be a full-time staff member with other program activities beyond the minority program. Both the relocation of the program office and the multiple roles handled by the deputy director within the AAMC have led to better integration of the program with related initiatives and data systems of the AAMC.

After the evaluation, the Foundation reauthorized the program and increased the number of program sites from six to eight. Four of the six original program sites were refunded, and four new program sites were added (including two sites that were reconfigured from the original authorization):

- Baylor College of Medicine
- Case Western Reserve University School of Medicine
- The Chicago Summer Science Enrichment Program (Rush Medical College, University of Chicago Pritzker School of Medicine, Loyola University Stritch School of Medicine and Northwestern University School of Medicine)
- Fisk Summer Premedical Institute, now in partnership with Vanderbilt School of Medicine
- University of Alabama School of Medicine
- University of Virginia School of Medicine
- University of Washington School of Medicine/University of Arizona College of Medicine
- Yale University School of Medicine

#### The Second Program Review

Beginning in the fall of 1997, in anticipation of the end of the second Foundation program authorization, work began on a more comprehensive evaluation of the Minority Medical Education Program, drawing upon the experience from both the first and second authorization periods. The evaluation was conducted jointly by the national program office at the AAMC and Laurence Baker and Joel Cantor—two former Robert Wood Johnson Foundation staff members who were involved in the first evaluation.

The evaluation demonstrated that the program was meeting its goal. In each of three years that the

evaluators studied, nearly half of participants in the program who applied to medical school were accepted, compared to about 42 percent of minority applicants over the same period who did not participate in the program.<sup>7</sup> The evaluation attributed the higher acceptance rate among participants to their experiences in the program, rather than to prior academic preparation or personal characteristics of students who elected to enroll in the program.

The Minority Medical Education Program has made its mark on the lives of thousands of underrepresented minority participants as well as on U.S. medical schools. Including the program class of 1997 (one year beyond the formal evaluation), a total of 6,478 students participated, 3,183 (49.1%) applied to medical school, and 2,000 (30.9% of participating students and 62.8% of applicants) were accepted. In the 1998 medical school application cycle, program participants were just over 13 percent of all minority applicants and 14.5 percent of accepted minority applicants (see Figure 3.3).

Figure 3.3 shows that after the first two program years (1989–90), when only about half of participants applied to medical school and about a quarter were accepted, nearly two-thirds of participants applied and 40 percent were accepted to medical school in each class. Low application and acceptance rates in the most recent program classes reflect the natural time lag between participation and medical school application. In fact, 20 students who participated in the program between 1989 and 1993 and 26 more who participated in 1994 first applied to medical school in 1998. Thus, the application and acceptance rates even for the early program classes are likely to rise further in future years.

In the 1998 medical school application cycle, program participants made up just over 13 percent of all minority applicants and 14.5 percent of accepted minority applicants. The crude 1998 acceptance rate for program participants was 48.5 percent compared with 43.3 percent for minority applicants who did not participate in the program.

Including individuals who matriculated to medical school in 1998, a total of 1,138 program participants are currently enrolled in 122 of the 125 American medical schools. And, as of the summer of 1998, a total of 758 program alumni had graduated from medical school and were either in residency programs or in practice. Over the next several years, the national program office will follow program graduates to learn more about their choice of practice specialties as well as their future practice plans.

#### HOW THE PROGRAM WORKS

The quantitative analysis conducted in the second program review demonstrates that the program increases acceptance rates for participants. It also shows that the program is more effective for some groups of students than for others. In particular, the effect is greatest among participants with relatively



higher college grades and admissions test scores. However, the quantitative models tell us little about how the program achieves its goal.

Two other sources of information provide insights into how the program achieves its positive results: interviews with the program directors at each site and surveys of participating students. As part of the formal evaluation of the program, interviews were conducted with twelve program directors at the program sites.<sup>8</sup> When asked open-ended questions about which components of the program contributed most to medical school acceptance, they emphasized the synergistic effects of the entire experience. In the words of one, "I don't know if it is one component. It's a kind of *gestalt*." Some directors mentioned the program's contribution to preparation in the sciences, but most emphasized motivational and other noncognitive factors—for instance, that participants "enhance [their] understanding of the meaning of medical education, enhance their passion for health care education and career, enhance their preparedness for application and understanding of the [application] process."

The directors were also asked to rate, on a scale of 1 (low) to 4 (high), the contribution of 10 specific factors to the likelihood that participants will be accepted to medical school. Three of the top five factors were related to medical school application strategy—help in preparing medical school applications and application essays, and help in choosing which medical schools students to apply to. Although science instruction was rated highly, laboratory experiences were not (see Figure 3.4).

As a teenager with a head full of hoop dreams, Christopher McGilmer, M.D., didn't always take his education seriously. "Most of my life I'd look at my report card and say, 'If I really wanted to, I could get straight As,'" he recalls. But he didn't always want to. After a childhood spent in France and Turkey, where his father played professional basketball, McGilmer was going to Seattle University on a basketball scholarship—and he figured to play pro ball himself someday. Who needed biology?

Unlike many of his peers in family practice residencies, McGilmer didn't take a single science course during his first two years of college. But as time passed, it became clear to him that a basketball career wasn't in the cards, and he feels strongly now that God had a hand in turning him toward medicine. With the help of his mother, a nurse, he met Rayburn Lewis—then the medical director at Seattle's Providence Hospital, where McGilmer is now a resident—and found his way to the Minority Medical Education Program at the University of Washington, where Lewis became his mentor.

Like Courtney Lowe and Sethabel Alvarado, Chris McGilmer had grown up with few images of minorities in medicine or science as role models or peers. "As an undergraduate, I was the only African American in all my science classes," he says. "Being with all the other kids in the Minority Medical Education Program was very inspirational. Here were all these positive minority students, and they made me believe in myself more."

McGilmer aspires to be like his mentor Lewis. "He's an African-American doctor who's beloved by people of all races," he says. "He does a lot for the community, and that's something I want to do as well. As a doctor, you're in a position to really bring about positive change in people's lives." After finishing his residency, he's pondering the idea of a fellowship in academic medicine. "I'd like to work as a member of the teaching faculty in a residency program. Teaching has always interested me, and in medicine you're constantly learning new information and then having to teach it to others."

Student comments collected at the end of each summer's programming also provide some insight into these otherwise immeasurable program effects. They support the idea that teaching students how to negotiate the application and interview process is important. They also illustrate how the Minority Medical Education Program has built the self-confidence of its participants, many of whom may never have thought a medical career possible.

The results of both the formal evaluation and the anecdotal accounts are strikingly consistent with the findings and recommendations of background research conducted in the 1980s that inspired the creation of the Minority Medical Education Program. The 1985 Educational Testing Service study showed that many minority medical school applicants with good grades and good test scores could benefit from learning the best strategy for applying to medical school. The study recommended that the program take an enrichment approach rather than a remedial one, that it target students with grades and test scores compatible with medical school acceptance, and that interventions be aimed at younger students—freshmen or sophomores.

#### 2000 AND BEYOND

In July 1998, the Robert Wood Johnson Foundation reauthorized the Minority Medical Education Program for five years, and also expanded the number of potential grantees from eight to 12. Four of the current eight grantees will continue programs until 2003, the remaining four until 2004, and the new grantees until 2005.

The specific problem that led to initial funding of the program—the gap in acceptance rates between minority and nonminority applicants to medical schools—is now less important than the politics of

affirmative action and minority-focused programs. In the last several years, affirmative action has been systematically eroded:

- The University of California Regents decided in 1995 (effective January 1, 1997) to prohibit the use of race, religion, sex, color, ethnicity or national origin as criteria for admissions.
- Proposition 209 in California and Initiative 200 in Washington State were passed by voters in 1996 and 1998, respectively. Both propositions prohibit "the state, local governments, districts, public universities, colleges, and schools, and other government instrumentalities from discriminating against or giving preferential treatment to any individual or group in public employment, public education, or public contracting on the basis of race, sex, color, ethnicity or national origin."
- In 1997, *Hopwood v. Texas* enjoined the University of Texas from using race at any time as an admissions criterion. This decision of the Fifth Circuit Court of Appeals also affects Mississippi and Louisiana. (The current Texas attorney general is appealing the decision.)
- In December 1998, the First Circuit Court of Appeals in *Wessman v. Gittens* ruled that an

admissions policy providing a set-aside for minority applicants at Boston Latin School was unconstitutional.

- Two pending cases (*Gratz et al. v. Bollinger* and *Gruttner v. Bollinger*) against the University of Michigan challenge race-based admissions policies in the university's undergraduate and law schools. These have become class-action suits.

The most immediate challenge to the Minority Medical Education Program may come from Initiative 200, which applies to the University of Washington. Language in the initiative provided an exemption if federal funds were lost, but did not protect against the loss of private or foundation dollars. The medical school, however, believes that outreach programs such as the Minority Medical Education Program are exempt from the initiative's provisions.

Additionally, as the National Advisory Committee for the program, in concert with the existing program directors, develops plans for expansion, the current climate presents a challenge not only as to where new sites could be located but who can be included in the potential pool of grantees. For instance, there is consensus among all involved with the program that at least one site is needed in California. However, at this writing it is uncertain whether any University of California medical school can compete for a program award, given the requirements of the grant and the uncertain state of the law.

When Shannon Wiegand was a child, her parents taught in bush schools in remote Alaskan villages. Also based in those schools were community health aides—local residents trained to be the eyes and ears of doctors from Anchorage, who were able to visit only once or twice a year. She watched with interest as the aides saw patients, checked symptoms, and then consulted doctors by phone to determine whether a patient should be treated in the village or sent to Anchorage. Today, she is a doctor herself: a family physician at the Alaska Native Hospital in Anchorage, flying into villages and consulting with community health aides like the ones she used to observe as a child.

Despite this early exposure to medicine and years of volunteering in hospitals as a teenager, Wiegand didn't consider medical school until late in her college career. Friends and family finally encouraged her to think about medicine, but, she says, "I think I didn't really feel that I had the capability to do something like that."

Then a counselor in the Indian women's group at the University of Washington suggested that she consider the Minority Medical Education Program—at the time a brand-new program. In the summer after the fourth year of her five-year undergraduate program, she went through the same intense clinical, classroom, and personal experience that other graduates of the program describe.

"The Minority Medical Education Program provided me with the confidence that I needed to say, 'This is something I can do,'" she says. Most important for her was the program's focus on getting students out into the medical community: "For the first time, I saw women physicians and minority physicians. That was an important turning point. I'd never had role models in medicine until I went to the program."

After completing medical school at the University of Washington, Wiegand did her residency at the Seattle Indian Health Board. She now is on staff at Alaska Native's Family Practice Clinic, working largely with native populations. And the Native American kids she sees in the clinic are looking to her as a role model. "Just being here and seeing the people that I see makes a difference, I think," she says. "They see that I'm a real person who's like them. It helps them believe if I did this, they can, too."

## IMPLICATIONS

The Minority Medical Education Program has contributed to the racial and ethnic diversification of

medicine in the United States, and will no doubt continue to do so. Whether the program model can be generalized to other health professions depends on many factors, but it seems that it could be. Perhaps efforts could begin by extending the program to help participants who are not accepted or decide not to apply to medical school to seek entry to other health professions.

There are other lessons from the program's experience for foundations, government agencies and others interested in the health professions. First, the importance to program participants of learning application strategies—selecting the right schools to apply to, writing application essays and honing interview skills—highlights the importance of factors other than grades and test scores in the medical school application process. Members of minority groups long discouraged from believing that they could become physicians need to know that more than good grades and exam scores are needed to be on an equal footing in applying to medical school.

Second, the significant investment of the AAMC in its extensive applicant and student database made a great deal of the background research and outcome evaluation possible. The success of the Minority Medical Education Program could not have been rigorously documented without the AAMC's data. The Robert Wood Johnson Foundation recently took steps that are likely to pay off in similar ways for nursing by funding the National Council of State Boards of Nursing to assemble a comprehensive list of registered nurses. Other investments, especially those that enable longitudinal tracking of health professionals, would also be worthwhile.

Third, the way that the Foundation evaluated the program was unique. The AAMC's staff members were well positioned to assess the program. However, it is not the usual practice of the Foundation to ask program directors to evaluate themselves. The program evaluation broke new ground in that its national program office (at the AAMC) and external evaluators collaborated on the program assessment. This model appeared to have worked well—outside evaluators brought confidentiality and impartiality to parts of the evaluation where they were most needed and the AAMC's staff brought program knowledge and data where they were needed. This is an evaluation strategy that must be used with care, but one that might be considered in other areas.

Although the future is always uncertain, the Minority Medical Education Program will probably continue to fill an important niche. Programs that address problems earlier in the educational pipeline and work to diversify the faculties of medical schools are also integral parts to any strategy to reach parity in medicine. The program and related efforts can play important roles, but it will take many years for their benefits to accrue. In the short term, efforts to improve the cultural competency of the existing stock of health

professionals and provide incentives for providers to serve the underserved are also essential. Ultimately, it will take a broad spectrum of interventions to redress the gap in access for minorities and other vulnerable populations.

## Notes

<sup>1</sup> The Association of American Medical Colleges defines underrepresented minorities as African Americans, Mexican Americans, Native Americans (American Indian, Alaska Natives, and, as of 1997, Native Hawaiians), and Puerto Ricans who reside on the main land United States. The term underrepresented minority in medicine is based on a racial/ethnic groups' proportion of physicians in the population, compared to the actual proportion that group represents. For instance, African Americans in 1970 represented 11.5 percent of the population, yet only 2.3 percent of physicians. References to minorities in the chapter are to underrepresented minorities.

<sup>2</sup> Not until 1973 was complete data on race/ethnicity of applicants and accepted applicants collected by the AAMC. Earlier information is only available on African-American applicants.

<sup>3</sup> J. C. Baratz, M. S. Ficklen, B. King and P. Rosenbaum. *Final Report: Who is Going to Medical School? A Look at the 1984–85 Underrepresented Minority Medical School Application Pool*. Princeton, N.J.: Educational Testing Service, 1985.

<sup>4</sup> Ibid., p. 3.

<sup>5</sup> The multivariate statistical analysis was conducted jointly by staff from the Foundation's research and evaluation unit and staff from the Association of American Medical Colleges using the AAMC's extensive databases.

<sup>6</sup> The profiles included in boxes throughout this chapter first appeared in G. Shaw. "Footsteps on the Path: As MMEP Expands, Successful Graduates Take a Look Back." *Reporter*, 1998, 7(12), 8–9.

<sup>7</sup> J. C. Cantor, L. Bergeisen and L. C. Baker. "Effect of an Intensive Education Program for Minority College Students and Recent Graduates on the Probability of Acceptance to Medical School." *Journal of the American Medical Association*, 1998, 280(9), 772–776.

<sup>8</sup> The lead faculty member from each location at which MMEP is operated was interviewed, including leading subsites among consortium grantees. Interviews were conducted by telephone, and a brief written questionnaire was then faxed to respondents.

## FIGURES

3.1 Percentage of Underrepresented Minorities Enrolled in First-Year Medical School Classes, 1968-1997

3.2 Medical School Acceptance Rates, MMEP Versus Non-MMEP

3.3 MMEP Participant Experiences: Medical School Applications and Acceptance Rates Through 1998, by Year

3.4 Perceived Contribution to Admission