

Increasing the Enrollment of Underrepresented Minority Dental Students: Experiences from the Dental Pipeline Program

Shelia S. Price D.D.S., Ed.D. ✉, W. David Brunson D.D.S., Dennis A. Mitchell D.D.S., M.P.H., Charles J. Alexander Ph.D., Douglass L. Jackson D.M.D., M.S., Ph.D.

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This report presents preliminary findings from the Pipeline, Profession, and Practice: Community-Based Dental Education program, which was funded by the Robert Wood Johnson Foundation and the California Endowment.

Abstract

Dental educators have been trying to increase enrollment of underrepresented minority (URM) students for many years with limited success. The Pipeline, Profession, and Practice: Community-Based Dental Education program has developed or been affiliated with several innovative strategies for increasing the enrollment of URM students in U.S. dental schools. In March 2005, three promising approaches were discussed at an American Dental Education Association symposium and are described in this article: 1) collaborative recruitment programs based on groups of regional schools; 2) workshops that focus on the effective operation of admissions committees; and 3) a new summer enrichment program for college students interested in dentistry and medicine.

Increasing the enrollment of underrepresented minority (URM) students in the health professions is becoming a more important and urgent issue. The 2002 report of the Institute of Medicine, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, warned of the unequal treatment many minorities receive in the current health care system.¹ As one solution, the report recommended increasing the number of minority health professionals. In 2004, the Duke University School of Medicine's Sullivan Commission, a blue-ribbon panel funded by the W.K. Kellogg Foundation, stated that the American health professions workforce is in a critical state because of its lack of diversity.² To increase diversity, the commission noted that the culture of health professions schools must change: new and nontraditional pathways to the health professions are needed, and commitments to diversity must come from the highest administrative levels of the university and academic health center. In 2003, the U.S. Supreme Court affirmed the constitutionality of using race as a factor in recruitment (*Grutter v. Bollinger* and *Gratz v. Bollinger*).^{3,4} Specifically, the court ruled that diversity can be a compelling interest in admission decisions

and that narrowly tailored race-conscious admissions policies are justifiable. With the constitutionality of race affirmed, this ended a period of uncertainty in higher education and led to many new initiatives to reduce inequalities in minority student participation in higher education.⁵

In response to these and other national calls to diversify the health professions, the Robert Wood Johnson Foundation (RWJF) initiated the Pipeline, Profession, and Practice: Community-Based Dental Education program. The California Endowment and the W.K. Kellogg Foundation joined forces with the RWJF to launch the program in 2003. The Pipeline program is designed to help increase access to oral health care. This five-year initiative provides institutions with grants to link their schools to communities in need of dental care and to boost their underrepresented minority (URM) and low-income (LI) student enrollment numbers. This article is focused on the URM student recruitment aspect of the Pipeline program. A full description of the program is available in several published articles and the Pipeline website. Briefly, fifteen U.S. dental schools, shown in Table 1, are participating in this program. A major objective of this effort is to increase enrollment of URM and LI students. Ten of the fifteen Pipeline schools formed two regional groups of five schools that traditionally competed for students. Columbia University, the seat of the national program office, joined one of these collaboratives to assist in developing and operating the regional recruitment plan. Dental schools are relatively small academic units (average of sixty-five full-time clinical faculty) that have very constrained resources and limited experience operating effective recruitment programs for URM/LI students. Thus, the purpose of these collaboratives was to pool financial resources and expertise to more effectively recruit disadvantaged students. Although the Pipeline program has another year to run, evidence seems to suggest that the regional collaboratives are an effective way to increase URM/LI student enrollment.

Table 1. Dental Pipeline schools

Boston University
Howard University
Loma Linda University
Meharry Medical College
Temple University
University of North Carolina at Chapel Hill
The Ohio State University
University of Connecticut
University of California, Los Angeles
University of California, San Francisco
University of Illinois at Chicago
University of the Pacific
University of Southern California

Two of the three sections of this article are based on experiences of the fifteen Pipeline schools. The third section is a description of the Summer Medical and Dental Education Program, another Robert Wood Johnson Foundation initiative, which grew out of the foundation's twenty-five year experience trying to diversify the medical profession.

While collaboration programs have been implemented in California and the Northeast region, other Pipeline schools have independently developed URM recruitment strategies. The California regional effort is an attempt to leverage the individual capabilities of the schools, since they essentially compete for many of the same students. The Northeast regional group is an attempt to see if a regional strategy can work with schools in different states. The recruitment programs of individual schools mirror those used in the regional programs. The difference is the scale of the programs and the allocated resources.

Pipeline Programs

Regional Recruitment Programs

The first collaborative started in California in 2003. All five California dental schools participated in the Pipeline program (Loma Linda University, University of the Pacific, University of California, Los Angeles, University of California, San Francisco, and University of Southern California), and four were funded by the California Endowment. The endowment was an early and strong supporter of trying to organize and implement a regional disadvantaged student recruitment strategy. Based on the early successes of the California regional program, a year later the Pipeline national program office decided to test the regional recruitment model with schools in the same general area of the country but in separate states. This led in 2004 to the establishment of the Northeast regional collaborative, which includes the dental schools at Boston, Columbia, Howard, Temple, and West Virginia Universities and the University of Connecticut. A major advantage of regional recruitment efforts is drawing on the expertise of individual schools to enhance the group's effectiveness. For example, Howard University was invited to join the Northeast collaborative because of its expertise in recruiting URM/LI students.

There are some differences between the California and Northeast recruitment programs, but the basic program elements are similar. For the purposes of clarity and brevity, the key elements of the regional programs are described even though not all elements are present in each collaborative.

The major elements of the regional programs are as follows.

Recruitment materials for URM college students and preprofessional health advisors.

Designed to appeal to students of color, materials were developed that addressed the advantages of a career in dentistry, national and regional problems with access disparities, the lack of diversity in the dental profession, and the important role URM dentists can play in reducing access disparities. The brochure described the regional recruitment program and the participating schools but was not specific to

any one school. Instead, each school had an insert that described its specific educational programs, admission processes, and contact information. The brochures were distributed to preprofessional health advisors and to students at recruitment visits to the feeder colleges.

Preprofessional health advisors meetings.

Meetings with preprofessional health advisors from key feeder colleges are conducted several times a year. Hosted by one of the participating schools, the meetings are attended by all schools in the collaborative, and the presentations cover the basics of dentistry, the process for getting into dental school, and a tour of the school. Time is built into the program to allow the advisors to meet with representatives of the schools.

Feeder colleges.

Each dental school is assigned to manage ten feeder colleges. This assignment includes such activities as developing relationships with preprofessional health advisors, forming dental clubs, working with minority student organizations, and identifying and supporting promising students. The dental school assigned to a particular feeder college is responsible for recruiting for all schools in the collaborative. In this way, recruitment activities can be extended to more feeder colleges, and more resources can be spent on each program.

Dental associations.

The schools have developed formal relationships with local chapters of the Hispanic Dental Association, the National Dental Association, and the Society of American Indian Dentists to assist in URM recruitment efforts by both recruiting and mentoring applicants and dental students. This is a very important relationship because most schools do not have a critical mass of URM students or faculty. The minority dental associations can provide the social support structure for applicants and students and guide them through the admissions process and graduation from dental school, respectively. In addition to minority dental associations, state dental associations are becoming more concerned with access issues and the critical need for more URM dentists. In California, the state dental association provides financial support for the URM recruitment programs.

Summer enrichment.

To increase the competitiveness of URM college students trying to get into dental school, the regional recruitment programs offer promising students a six-week summer enrichment program. Students increase their core knowledge of the biological sciences, learn more about dentistry, prepare for the Dental Admission Test (DAT) and the admissions process, and strengthen their basic learning skills. Summer enrichment programs are expensive to run, so each region operates one or two programs to which all schools in the collaborative contribute financially. Schools also help identify URM/LI college students to participate in the programs. Often these programs are run jointly with medical schools on the same campus. A large percentage of participants have been successful in gaining admission to medical school.

Post-baccalaureate programs.

The same shared model is used for the post-baccalaureate programs. These programs are designed to assist promising students who applied but were not accepted to dental school or students who have graduated from college but do not have strong enough grades or the right courses to get into dental schools. Post-baccalaureate students spend a year taking science courses for credit in an effort to strengthen their academic records. These programs are labor-intensive and expensive to operate, so each region runs one or two programs to which all schools contribute financially.

Admissions workshops.

These workshops focus on admissions committee roles in recruitment and enrollment of diverse students. A key feature is presentations by a two-member team—one with experience in dental admissions and the other versed in URM recruitment initiatives. Special emphasis is placed on “whole file” review of candidates. That is, in addition to looking at quantitative data such as grade point averages and DAT scores, the workshops stress the need for admissions committees to consider qualitative factors such as the life experiences of applicants. These include family responsibilities and employment while in college, special talents and other factors that provide insights into the applicants’ abilities, and likely contributions to the dental profession and the larger society. A detailed description of the admissions workshops appears below.

Recruitment manual.

The successful recruitment of URM students is very dependent on the effective operation of the programs described here. Since schools vary greatly in their experience with URM recruitment programs, a recruitment manual was developed that spells out in detail how to run these programs. The manual is still a work in progress and can be expected to change as more experience is gained running URM recruitment programs. The American Dental Education Association (ADEA) is having the manual reviewed by several committees and plans to distribute a version of the manual to all U.S. and Canadian dental schools.

Shared administration and budget.

Each collaborative has a recruitment committee that oversees implementation of programs. The committees also serve as centers of communication with external stakeholder organizations (e.g., state dental association). Committee chairs are rotated, and schools share cash and in-kind (e.g., faculty and staff time, supplies) expenses equally.

To date, the impact of the regional recruitment programs on URM enrollment is promising. Table 2 shows the change in URM applications and enrollments at Pipeline schools from the baseline year 2002 to 2006. In the five-year period, URM enrollments increased by 63 percent and 33 percent in California and the Northeast Pipeline schools, respectively. A Pipeline program, the National Evaluation Team (NET), is conducting a formal and separate evaluation of the effectiveness of the Pipeline URM/LI recruitment programs.

Table 2. Comparison of URM applicants and enrollees at fifteen Pipeline schools in three categories: California collaborative, Northeast collaborative, and “other” Pipeline, 2002–06

Entering Class	2002	2003	2004	2005	2006
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	Applicants	Enrollees	Applicants	Enrollees	Applicants	Enrollees	Applicants	Enrollees	App
	Applicants	Enrollees	Applicants	Enrollees	Applicants	Enrollees	Applicants	Enrollees	App
Collaborative	533	35	614	39	588	34	682	54	
Northeast									
Collaborative	716	79	769	85	720	96	760	103	
"Other"									
Pipeline	478	69	468	61	479	67	535	51	

Admissions Committee Workshops

Admissions committees have a critical role in increasing the dental student body diversity. Five important issues determine their effectiveness in enrolling URM students:

- institutional climate

- missions statement

- committee composition

- leadership and function

- evaluation and selection criteria

As the Pipeline program was beginning, it became evident in 2003 that a number of the Pipeline institutions were experiencing some difficulty in their admission processes. The national program office decided to develop an admissions committee workshop in coordination with ADEA to be offered to institutions that wish to involve their admissions committees. Beginning in 2004, six institutions (three Pipeline institutions and three non-Pipeline institutions) have provided the workshop to their admissions committee members as well as significant administrators at their institutions.

The workshops are half-day presentations that cover the following areas:

- What is the climate for dental school admissions?

- Why is diversity important?

- What changes can make a difference?

- Admissions committees best practices

- Noncognitive variables

Figure 1 compares the percentages of first-year URM students at institutions where the admissions workshop was presented in the entering class years of 2003–06. The arrows on the chart indicate the year when the workshops were presented. Workshops were presented at institutions one, two, three, and four

in 2004; five in 2005; and six in 2006. Institutions one, two, and five are participants in the Pipeline project, and three, four, and six are not. Institutions two, three, and four demonstrated increases in URM students following the workshop. Institutions two and four moved from below 5 percent up to 10 percent, and institution three moved from 10 percent to above 20 percent. Institution one has had mixed results, and institution five was able to return to the 10 percent level after having two years below. Institution six had the workshop presented this year, and enrollment results will not be available until next year. The admissions workshops were presented at no cost to the institutions and are available through ADEA.



Figure 1

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Percentage of first-year URM students at institutions where the admissions workshop was presented

Institutional Climate

Many schools find it difficult to establish institutional environments that are diverse with respect to race/ethnicity, gender, class, sexual identity/orientation, religion, age, ethnicity, culture, region/geography, and indigenous status. As a first step, institutional leaders (e.g., university president, board of regents, dean) must clearly state their institution's commitment to diversity as an important element of the learning process. Within dental schools, the dean can charge the admissions committee to develop policies and procedures that ensure the selection of a diverse student body. Personally delivering this charge to admissions committees at the start of each admissions cycle and sponsoring workshops that expand the cultural competency of admissions committee members are among the many ways deans can reinforce their school's commitment to diversity.

Admissions deans or directors can use the dean's support to cultivate a positive environment within admissions committees. It is critical that admissions directors demonstrate a commitment to, and passion for, diversity to keep committees focused on this issue.

Mission statement.

Almost all dental schools and even some admissions committees have mission statements that explicitly support diversity. Having admissions committees formulate their own mission statement is a useful exercise, requiring members to reflect on institutional values and applicant selection policies.

One mission statement cannot serve all schools, but many committees have used these guiding principles to formulate their own mission statements:

- Ensure high-quality oral health care

- Increase access to oral health care

- Select and enroll high-quality, diverse applicants

- Ensure that selected students are sensitive to the oral health needs of all patients

Committee composition.

Admissions committees that are comprised of diverse members (gender, disability, class, sexual identity/orientation, religion, age, ethnicity, culture, region/geography, and indigenous status) send a message of institutional commitment to diversity. When committee membership is at least, in part, appointed by deans, rather than totally elected or selected by faculty, it is easier to ensure diverse membership. Committee members should be appointed to three-year terms with the option for one renewal term. Longer appointments lead to minimal committee turnover, making it difficult to initiate new programs to promote diversity.

As a general set of rules, committees should be chaired by the deans/directors of admission, and all committee members should be expected to participate in applicant interviewing, attend all committee meetings, and vote on candidates. Member participation in committee meetings is critical to ensure that candidates have strong advocates/opponents during deliberations.

Leadership and function.

Admissions committees are the gatekeepers and can play a highly visible role advocating for diversity, but some are hesitant to take on this advocacy role. Accordingly, committees need to examine their roles and functions periodically and focus on a couple of questions. Are they solely gatekeepers, or are they key players in ensuring the admission of a student body that reflects the school's mission and goals? What are the most significant quantitative and qualitative attributes that contribute to a candidate's success in dental school and in clinical practice?

Evaluation and selection criteria.

The process of selecting specific students for dental school is challenging and underscores the importance of evaluating all quantitative and qualitative data on applicants. Focusing just on quantitative data puts applicants from low-income families at a disadvantage, since some have not had the same educational and social advantages as students from wealthier families. Summer enrichment programs help level the playing field by offering opportunities for disadvantaged pre-dental students to increase their competitiveness. Summer programs are invaluable to students who have gotten off to a poor start in college and have experienced educational hardships because of family obligations, the lack of educational resources, and poor career advice and counseling. These programs allow disadvantaged students to demonstrate their motivation, talents, eagerness to learn, interest in community service, and commitment to dentistry. Further, admissions committees put great value on personal evaluations of summer students by dental school faculty who had direct contact with them.

To provide a broad picture of applicants, the use of a ranking formula is recommended that weighs grade point averages, DAT scores, interview scores, and noncognitive factors such as relevant family factors, difficulties in achieving a degree, and potential to practice dentistry in an underserved area. Focusing only on quantitative factors may eliminate other well-qualified URM candidates. Grades and test scores do not always tell the whole story about applicants. These variables do not measure motivation, character, and other special qualities. Additionally, some suggest that social and psychological factors may negatively affect the academic and test-taking performance of URM students. This phenomenon, termed "stereotype

threat," can result in poor academic and test-taking performance despite a student's adequate level of preparedness.^{6,7}

Identification of noncognitive factors important to the institution is a key step in narrowly tailoring an approach to achieving a diverse student body. Generally, ranking systems that take such factors into account are used to identify a pool of qualified applicants. All candidates should be individually discussed and evaluated. Limiting discussion to only those candidates who have exceptional grades will prevent many potentially successful applicants from being considered.

Summer Medical and Dental Education Program

In 1988, the RWJF-funded summer enrichment program was called the Minority Medical Education Program (MMEP). The objective was to increase the number of qualified medical school applicants coming from underrepresented minority groups—principally African American, Hispanic, and Native American. MMEPs offered participating students a free, six-week medical school preparatory summer program at one of ten medical schools.

In 2003, the MMEP was renamed the Summer Medical Education Program (SMEP). Each participating SMEP medical school provided intensive academic preparation and advanced study skills training during the six-week residential program. SMEP's primary goals were to provide participants with

- the academic grounding needed to excel in medical school,
- exposure to a variety of clinical health care settings,
- enhanced test-taking skills, and
- knowledge of the medical school application process.

More than 11,000 students have participated in MMEP/SMEP. A study conducted by the Association of American Medical Colleges (AAMC) found that, of the 5,500 program graduates who applied to medical school, a remarkable 63 percent were accepted.

In the spring of 2003, the Pipeline national program office and the Robert Wood Johnson Foundation (RWJF) commissioned a study to assess the challenges faced by undergraduate URM students in pursuing dental careers. There were two major findings: URM students have critical gaps in their knowledge about how to prepare themselves academically for dental school and the dental school admissions process.⁸ To address these gaps, the RWJF-sponsored Summer Medical Education Program was expanded to include pre dental college students.

Recognizing the potential of summer enrichment programs to address the lack of diversity in the dental workforce, the RWJF began a pre dental pilot program in 2003. Of the eleven participating medical centers, the University of Washington and Columbia University were selected to conduct the three-year dental pilots.

The results of the SMEP pre dental pilot sites were positive: sixty-three pre dental students completed the program. Most students (78 percent) were extremely pleased with their summer experiences and planned to apply to dental school. As of spring 2005, eighteen of the eligible participants had applied to dental

school, and fifteen (83 percent) were accepted and are now enrolled in U.S. dental schools. Interestingly, a majority of these SMEP dental alumni are attending Pipeline schools. Data from the last admissions cycle is being compiled, and a continuation of this positive trend is anticipated.

Because of the success of the pilot programs, the foundation decided to expand the summer medical program to include students interested in dentistry. Accordingly, the program was renamed the Summer Medical and Dental Education Program (SMDEP). The SMDEP is now jointly administered by the AAMC and ADEA.

To obtain a SMDEP grant, medical and dental schools on the same campus or in close proximity had to partner and submit an application. The twelve sites funded are Case Western Reserve University Schools of Medicine and Dental Medicine, Columbia University College of Physicians and Surgeons and College of Dental Medicine, David Geffen School of Medicine at UCLA and UCLA School of Dentistry, Duke University School of Medicine, Howard University Colleges of Dentistry and Medicine, University of Texas Health Science Center at Houston Dental Branch and Medical School, University of Medicine and Dentistry of New Jersey/New Jersey Medical School and New Jersey Dental School, University of Louisville Schools of Medicine and Dentistry, University of Nebraska Medical Center Colleges of Medicine and Dentistry, University of Virginia School of Medicine, University of Washington Schools of Medicine and Dentistry, and Yale School of Medicine. These twelve sites selected their first classes of eighty students in summer 2006. The nine combined dental and medical sites selected a minimum of twenty pre-dental students and sixty premedical students. The total number of students selected for the twelve sites was 960, with 180 pre-dental and 780 premedical students. A report of the first summer programs will be coming in the future. All of the participants in the SMDEP are college freshmen and sophomores and will not be applying to dental or medical schools for at least another year.

Net Gains

By working collaboratively on recruitment and administering programs that better prepare URM students, the Pipeline schools have increased the number of URM students they attract. Applications from URM students to these schools, not including Howard University and Meharry College, increased by 48 percent from 1,239 to 1,834 during the 2000–06 time frame. The URM first-year enrollment has increased in the thirteen schools exclusive of Meharry and Howard by 63 percent from the fall of 2000 to the fall of 2005. Figure 2 shows that at the baseline year, 2000–01, prior to the start of the Pipeline program, the participating schools, excluding Meharry and Howard, enrolled a total of seventy-seven African American, Hispanic, and Native American students. The schools' implementation reports indicated that, in fall 2005, the schools had a combined first-year URM enrollment of 126 students. Meharry and Howard have increased their enrollment of Hispanic and Native American students by fourfold, that is, from four to seventeen students over the same time period.



Figure 2

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First-year URM enrollment at Pipeline schools

Table 2 (see page 342) shows the comparison of the effect of regional recruitment efforts in the California and Northeast regional recruitment programs with the Pipeline schools that did not participate in regional recruitment programs. There were increases from 2004 in URM applicants and enrollees in both the Northeast and California schools participating in regional recruitment programs. The California schools increased from 533 applicants in 2002 to 636 in 2006, and enrollees increased from thirty-five in 2002 to fifty-seven in 2006. In the Northeast schools, applicants increased from 716 in 2002 to 1,153 in 2006, and enrollees increased from seventy-nine in 2002 to 105 in 2006. The other Pipeline schools that did not participate in regional recruitment increased in applications from 478 in 2002 to 635 in 2006 and enrollees from sixty-nine in 2002 to seventy-eight in 2006. The two regional recruitment efforts increased applications and enrollees at a higher rate. By national comparison, in 2000 underrepresented minorities made up 12.1 percent and 10.5 percent of dental applicants and first-time enrollees, respectively.⁹ Slight increases in URM applicants (12.4 percent) and first-year enrollees (11.6 percent) occurred in 2004.¹⁰

Conclusions

This article has described approaches undertaken to improve recruitment, enrollment, and retention of URM dental students in the United States. The approaches included enlarging the URM dental applicant pool, assisting URM students in preparing for the admissions process, and helping dental education communities better understand admissions processes in relation to their diversity missions. Also reported are the promising recruitment outcomes of these approaches in the first three years of the five-year Pipeline program.

Preliminary data from the participating schools as reported at the baseline year and as derived from the annual implementation reports indicate that the enrollment of URM students, although still low in number, is moving in the right direction. As shown in Figure 2, not including Howard University College of Dentistry and Meharry Medical College School of Dentistry, URM student first-year enrollment in Pipeline schools grew by 63 percent from seventy-seven to 126. Although the total number is still relatively small in comparison to total entering class size for these thirteen schools, the increase demonstrates that the various strategies discussed here are starting to result in a promising trend. These efforts must be continued to sustain this positive direction.

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