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## ABSTRACT

Methods for increasing minority representation in medicine and the related health professions are discussed in this paper. The programs sponsored by the Macy Foundation are described: post-baccalaureate premedical fellowship programs, regional conferences, medical school programs, and black college programs. The need for high school directed programs, college programs, and programs for entering medical students is emphasized. (DT)

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FUNDING OF MINORITY PROGRAMS  
FROM THE PRIVATE SECTOR

1966-1976, A Ten-Year Perspective

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for the Annual Meeting of the AAAS  
February 20, 1976

SCIENCE.

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## INTRODUCTION

Dr. Goolsby, Ladies and Gentlemen -- I am honored to have been asked to share with you some of my observations about an area of vital national concern: the increase of minority representation in medicine and the related health professions.

As you are well aware, a number of private foundations such as:

The Alfred P. Sloan Foundation  
The Earnest and Mary Hayward Weir Foundation  
The Grant Foundation  
The W.K. Kellogg Foundation  
The Robert Wood Johnson Foundation

and of, course, the Josiah Macy, Jr. Foundation have been active in this area. However, for purposes of this paper, at this time I will only present the Macy programs as an example of the role played by the private sector.

Although minority enrollment has quadrupled over the past ten years, this encouraging statistic is offset by the fact that a significant proportion of the students must repeat course work and this past year 14.4% of the black freshmen were repeating the first year as compared with 1.2% of all other freshmen who had to repeat the first-year.

The high incidence of repeating in the first year has accompanied the increase of minority students. When this is taken into consideration, we can see that the increase in newly admitted first-year black medical students actually began to plateau in 1971-72 and for this academic year we saw a decrease in the number of black first-year medical students - from 1,106 in 1974 to 1,036 in 1975. There are many indications to lead one to believe that this decline in admissions will continue.

In the past decade a measure of integration of the nation's medical schools

has been achieved. However, an equally great challenge remains: the appropriate academic preparation of minority students prior to entrance to medical school. Recent SAT and ACT scores have demonstrated that many students are not as well prepared in reading, mathematics and quantitative abilities as students have in the past. Many of our public schools during these ten years have demonstrated a diminished capacity to provide the knowledge and discipline in reading and mathematics as well as the development of the quantitative abilities necessary to a competitive education. As a consequence of inadequate and inappropriate preparation in public school and often in college, a high percentage of minority students is not successful as undergraduate premedical majors and many who are successful in gaining admission to medical school must repeat courses in medical school.

The programs I shall describe have benefited individual students, schools and organizations, but they have not effected the needed structural change in the public schools. The educational issues unresolved by the nation's public schools remain the greatest challenge, along with their social, economic and political implications.

#### BRIEF STATEMENT ABOUT THE MACY FOUNDATION

The Josiah Macy, Jr. Foundation is a private, philanthropic foundation, whose concern is health and medicine in the broadest sense. In the mid-1960s the Directors of the Foundation established a program to increase the opportunities for members of minority groups to study medicine and the related

health professions. We have included U.S. blacks, mainland Puerto Ricans, Mexican Americans and American Indians. The Foundation awards approximately \$2.5 million a year; over this ten-year period close to 50% of its grants were made in support of these programs.

In the development and implementation of programs, the Macy Foundation is able to draw upon the special knowledge of experts in a particular field. In addition to these informed consultants, the Foundation sponsors a conference program, which over the years has brought together informed minority educators and students to discuss the issues. These two mechanisms have provided an opportunity for minority consultation at all levels of the development and implementation of Foundation-sponsored programs.

#### Post-Baccalaureate Premedical Fellowship Programs

The first Macy effort was established in 1966 under the direction of Dr. William E. Cadbury, Jr., then Dean of Haverford College. It was designed to demonstrate to the medical schools that black students, particularly those who had graduated from traditionally black colleges, could be successful candidates for medical school.

Each spring for five years Dr. Cadbury visited the black colleges to identify candidates. Most of the students had wanted to study medicine, but either had not applied to medical school or had not been accepted. As participants in the program the students enrolled in a special summer session at Haverford, in Pennsylvania, and in later years at Oberlin in Ohio. Following the summer program the students enrolled for a full academic year in one of seven participating colleges---Bryn Mawr, Haverford, Knox, Kalamazoo, Oberlin,

Pomona and Swarthmore. According to their particular needs, they took regularly scheduled courses in chemistry, biology, mathematics and English.

During the five years of the program, 95% of the seventy-six students completed the year and a half; more than 90% of these students were accepted and enrolled in medical school. These students were indeed pioneers; the first group of minority students to begin to integrate the nation's medical schools.

### Regional Conferences

In order to increase the number of minority group medical students, they had to be accepted to medical school, and, of course, the complementary recruitment, preparatory and retention programs had to be developed.

To stimulate the necessary activity, in 1968 and 1969 the Foundation sponsored regional conferences to bring together the premedical advisors from the black colleges with the medical school admissions officers in the same region. These conferences provided an opportunity for each of the two groups to get to know one another and to discuss the key issues relating to preparation, enrollment and retention of minority group medical students. One of the major developments was that for the first time the Medical College Admissions Test nationally was exposed as a mechanism that excluded minority group students with potential from being accepted to medical school. Because of the difference in scores obtained on the MCAT between minority and majority candidates the medical schools have learned to broaden their admission criteria to better analyze a minority student's potential and ability.

### Medical School Level Programs

The Foundation established a program to help the medical schools initiate their efforts to recruit, prepare, enroll, counsel and retain an increased number of minority students.

Between 1967 and 1975 the Foundation has supported programs for minority students in more than 45 of the nation's 114 medical schools. Funds were provided for direct recruitment activities; programs that brought minority high school students to the academic medical center to learn of its many opportunities; programs for minority college and entering freshmen medical students which provided course work in the basic sciences, mathematics and reading as well as exposure to the laboratories and clinical activities of the academic medical center; and the establishment and support of Offices of Minority Affairs. These programs affected students at almost every level of academic preparation and provided us with a wealth of information.

### High School Directed Programs

Programs directed toward high school students have reflected an understanding that youngsters need to be motivated and made aware of opportunities in the health professions at an early age. Many medical schools have provided work in their laboratories as well as special courses in science and mathematics for high school students. The programs that have a significant number of their graduates in four-year colleges and/or enrolled in professional schools demonstrate that these special academic experiences, along with careful

academic and personal counseling and tutorial and financial assistance, are successful in preparing the students for college and a professional education. The most successful programs have had full-time leadership to provide the necessary tutorial and counseling assistance. However, for the most part, these programs have not had the cooperation of the public school system and as a consequence have not been successful in strengthening the academic courses and guidance counseling services provided by the public schools.

### College-Level Programs

Many medical schools have provided similar types of programs for college level students. The successful programs have provided rigorous course work in the sciences, mathematics, and English. Also, reading, studying, note-taking, and test-taking techniques have been taught and the students have learned to use the library. Often the programs have included laboratory work and clinical exposure. In addition they have provided guidance and counseling on an individual basis and seminars relating to the many opportunities in the health professions, as well as the health concerns of minority communities. These programs make a constructive contribution towards getting students into medical school. However, as is demonstrated by the high rate of academic difficulty experienced by many minority students, these programs alone cannot overcome all of the problems. They do, however, provide an opportunity for the faculty of the medical schools to develop working relationships with the faculty of the colleges in which the students are enrolled. These relationships must be aggressively pursued by both the medical schools and the colleges in order to assure the continuation of a rigorous education



at the undergraduate level in preparation for medical school.

### Programs for Entering Medical Students

In an effort to reduce some of the tensions for first-year medical students whose entering records suggest that they might have more academic problems than other students, some medical schools have established summer programs that provide rigorous course work in biochemistry and physiology as well as exercises in test-taking, reading, and note-taking.

In addition, many medical schools have established Offices of Minority Affairs. These offices are responsible for the easing and hoped-for resolution of many of the underlying problems of students from minority groups, such as inadequate high school or college preparation; the students' ambivalent attitudes relating to their academic preparation and their role in medical school; financial problems; and feelings of isolation from classmates and faculty members. These offices coordinate tutorial assistance, guidance and counseling, financial aid, and direct recruitment activities.

### Accomplishments

History speaks for itself! The number of minority group students enrolled in U.S. medical schools has increased: from 266 in 1966 to 1,036 in 1975. Between the years 1969 and 1971 approximately 70% of the minority students applying were accepted. This was most impressive, for at that time less than 50% of all students applying were accepted. However, since 1973 approximately 40% of the minority students applying are accepted, which is comparable

to all students. From available information it appears that the pool of qualified minority group students has not grown at the same rate as the pool of all students. The diminished size of the pool as well as the high rate of academic difficulties experienced by minority group students and their extensive financial needs has resulted in a real decline in their admission for 1975-76. (slides)

The following slides demonstrate the enrollment and retention patterns of the last few years. To save time I will point out only the figures relating to black students:

- Slide #1 shows first-year minority student enrollments from 1969-70 to 1975-76.
- Slide #2 shows total minority student enrollments for 1969-70 through 1975-76.
- Slide #3 shows in graph form the increase in minority enrollment in the first year as well as in all four years. Please note the plateauing of first-year enrollment which began in 1971 and the decrease that occurred in 1975.
- Slide #4 shows the attrition of minority medical students in relation to the attrition of majority medical students.

#### Black College Programs

In response to the indications that the pool of minority candidates was plateauing and that the incidence of academic problems continued to be an important issue for these students, the Foundation turned its attention to the undergraduate level; perhaps we could be effective in strengthening programs prior to entrance into medical school.

First-year black student enrollments, 1969-70 through 1975-76

Group	1969-70		1970-71		1971-72		1972-73		1973-74		1974-75		1975-76	
	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*
Black (Americans)	440	4.2	697	6.1	882	7.1	957	7.0	1,023	7.2	1,106	7.5	1,036	6.8
American Indian	7	.1	11	.1	23	.2	34	.3	44	.3	71	.5	60	.4
Mexican-American	44	.4	73	.6	118	1.0	137	1.0	174	1.2	227	1.5	224	1.5
Puerto Rican (Mainland)	10	.1	27	.2	40	.3	44	.3	56	.4	69	.5	71	.5
Total	501	4.8	808	7.0	1,063	8.6	1,172	8.6	1,297	9.2	1,473	10.0	1,391	9.1

Sources: W.F. Dube, "U.S. Medical School Enrollments, 1969-70 through 1973-74," Journal of Medical Education, 49 (March 1974), 304-306; Association of American Medical Colleges, The Advisor, (April 1974) 1974 Fall Enrollment Questionnaires; 1975-76 data from the Association of American Medical Colleges.

\*Percentage of Total Enrollment

Total U.S. minority students enrollments, 1969-70 through 1975-76

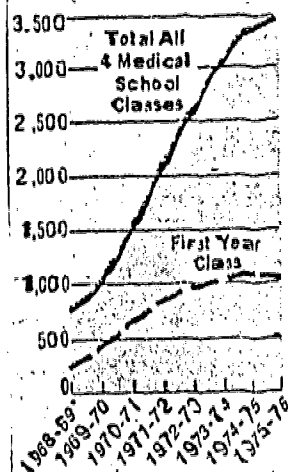
Group	1969-70		1970-71		1971-72		1972-73		1973-74		1974-75		1975-76	
	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*
Black (Americans)	1,042	2.8	1,509	3.8	2,055	4.7	2,582	5.4	3,045	6.0	3,355	6.3	3,456	6.2
American Indian	18	+	18	+	42	.1	69	.2	97	.2	159	.3	172	.3
Mexican-American	92	.2	148	.4	252	.6	361	.8	496	1.0	638	1.2	699	1.3
Puerto Rican (Mainland)	26	+	48	.1	76	.2	90	.2	123	.2	172	.3	197	.4
Total	1,178	3.0	1,723	4.3	2,425	5.6	3,102	6.6	3,761	7.4	4,324	8.1	4,524	8.1

Sources: W. F. Dube, "U.S. Medical School Enrollments, 1969-70 through 1973-74," Journal of Medical Education, 49 (March 1974), 304-306; Association of American Medical Colleges, The Advisor, (April 1974) 1974 Fall Enrollment Questionnaires; 1975-76 data from the Association of American Medical Colleges.

\*Percentage of Total Enrollment

+Less than 0.1%

# Number of Blacks Enrolled in Medical School



\*First year for which records maintained  
Source: Association of American Medical Colleges

The New York Times/Jan. 26, 1976

Students admitted to U.S. medical schools 1971-1972 through 1974-75,  
and percentages still in school June 1974 and June, 1975

	Admitted <u>1971-72</u>		Retained June 1974 <u>No.    %</u>		Admitted <u>1972-73</u>		Retained June 1974 <u>No.    %</u>		Admitted <u>1973-74</u>		Retained June 1974 <u>No.    %</u>		Admitted <u>1974-75</u>		Retained June 1975 <u>No.    %</u>	
Black (American)	758		649	86	810		716	88	864		802	93	934		886	95
American Indian	21		21	100	31		30	97	37		37	100	63		62	95
Mexican American	117		110	94	138		133	96	169		166	98	203		198	97
Puerto Rican (Mainland)	33		30	91	37		34	92	48		47	98	60		59	98
All Students	10,962		10,500	96	12,520		12,118	97	13,062		12,842	98	12,892		12,750	99

Source: "Medical Education in the United States, 1973-1974," supplement to Journal of the American Medical Association, 231 (January 1975); "Medical Education in the United States, 1974-75," supplement to the Journal of the American Medical Association, 234 (December, 1975).

In 1970, the Directors of the Foundation established a major program directed at the black colleges. This decision was made in part because more than 80% of the black medical students were graduates of these colleges, and of course, the schools had an unswerving dedication to the preparation of blacks for professional leadership.

Initially the program was designed to strengthen health professions advisory services. One aspect included a month-long summer institute for health professions advisors from selected black colleges. The advisors for the most part, were chairman of the biology or chemistry departments.

In the institutes, the advisors learned first-hand about opportunities in the health professions; the type of academic preparation needed to equip candidates to enter and remain in professional schools; and the academic, financial, social and emotional experiences of minority group medical students. They also took the MCAT and modified versions of the DAT and GRE and met with representatives of the testing centers.

These institutes were supplemented by direct grants made to thirteen black colleges. The grants were used to support a portion of the advisor's salary; tutorial programs; the activities of the health professions societies; and the direct recruitment of high school students for the premedical program at the college.

From our close association with the black colleges and many of their graduates enrolled in medical school, we learned that although the colleges provided a fine education, much of the biology curriculum was not modern biology. For many complex social and economic reasons many of the biology departments had not been able to develop courses in the modern molecular

and cellular biology which has developed over the past twenty years. Hence, many black college graduates were at a disadvantage in professional schools, competing with their white classmates who had received training in modern biology.

In response to this problem the Foundation directed its efforts to the development of biology faculties at selected black colleges. In 1975 the Foundation held the first Summer Institute, "Premedical Education: Biology" at Atlanta University. Letters were sent to the presidents of forty-two black colleges inviting each of them to nominate a faculty member to participate in the institute. Those enrolled were selected according to the following guidelines: nominees should not have received the Ph.D. degree in molecular biology within the last two years, since the information offered by the institute would be repetitive; they should have expressed or demonstrated an interest in teaching quantitative biology courses as part of the undergraduate curriculum; and they should be permanent members of the faculty above instructor. Participants from thirty colleges were selected and twenty-nine enrolled.

This summer a second institute at a more advanced level, "Premedical Education: Biology II" will be held at Atlanta University. Representatives from 15 schools that were considered to be in a position to quickly move ahead in modern biology have been invited for a more advanced course. The selection of the fifteen schools merely represents the practical limits of the program and should by no means be interpreted as a decision that other black colleges do not have the potential to develop modern biology curricula.



As a follow-up to the 1975 institute and in preparation for the 1976 program, the co-directors of the institute and myself are visiting each of the fifteen colleges which will be represented this summer. We are meeting with members of the departments of biology, chemistry, mathematics and physics, as well as administration, to learn first-hand about the academic programs offered to students preparing for medicine and dentistry or graduate work in the basic sciences. We hope these visits will provide information that will benefit all of us who are helping the schools modernize their science programs.

In addition to this faculty development, grants have been made to four black colleges to help strengthen the students' preparation for medical and graduate school. Funds are supporting summer programs for entering college freshmen. These programs introduce the students to principles in biology and chemistry and provide special exercises in mathematics and reading. These funds also provide tutorial services during the academic year and formal review courses - some for credit - in preparation for the MCAT, DAT, and GRE examinations.

Our most recent initiative has been an award to the Marine Biological Laboratory at Woods Hole, Massachusetts. The MBL will develop a program to train blacks and members of other minority groups in modern biology and biomedicine, with special attention to be given to the needs of younger faculty members and students in selected black colleges. The participants will be at the pre- and post-doctoral level. The program will be coordinated with the MBL's "Steps Toward Independence" program, which provides scholarships, equipment, and a wide range of essential research services for nationally selected junior investigators and students.

The programs at the college level provide an excellent opportunity to learn the extent and specific nature of the academic deficiencies of the students, most of which center around mathematics and reading. If these problems can be confronted appropriately, we then can expand the pool of well-prepared minority students for medical, dental and graduate schools, and perhaps begin to reverse the trend of inappropriate preparation for college and graduate or professional school.

Much remains and can be accomplished at both the college and medical school levels to provide the academic reinforcement that is needed by many minority students. In addition, the greatest challenge remains: to help the nation's public school systems provide their minority students, as well as all students, with an education that will prepare them for college and professional school.