Sophie Davis School of Biomedical Education at City College of New York Prepares Primary Care Physicians for Practice in Underserved Inner-City Areas

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THE SOPHIE DAVIS SCHOOL of Biomedical Education at the City College of New York is unique among U.S. medical schools in several respects (indeed, it resists conventional classification as a medical school, since it does not itself award the MD degree). It was established in an effort to give affirmative answers to a series of important educational and social questions (*1*):

> Is it possible to select high school seniors who have intellectual and personal qualities which might characterize a future physician, or must every applicant to medical school have four years of college maturation? Is there anything that can be done to make pre-medical education significantly contributory to the education of a physician, or must it remain a viciously competitive, often ethically distorting, frustrating fight to get into the medical school? Does a curriculum have an influence on the medical student's ultimate selection of a specialty and of the geographical area where he will practice? Can a medical school in our contemporary society successfully increase the representation of all segments of our population in the medical profession?

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The formal structure of the resulting institution was not unfamiliar in the United States. The Sophie Davis School was established as a 6-year BS and MD program—that is, one that admits students at the end of high school, compresses the traditonal 4-year undergraduate premedical college sequence and the first two "basic science" years of medical school training into a 4-year program leading to a BS degree, and then sends students on to the junior and senior years of conventional medical school for clinical training leading to the MD degree.

Unlike the half dozen or more structurally similar American 6-year programs, however, the Sophie Davis School is not a wholly owned subsidiary or affiliate of a single existing conventional medical school. Instead, it has cooperative relationships with eight participating medical schools, all but one in New York City or State, which assure places in their clinical year classes to successful Sophie Davis School graduates and ultimately award them their medical degrees.

Unlike other 6-year programs (which, deservedly or not, often have reputations as "whiz kid" schools training scientifically precocious superstars of the

future for careers in academic medicine, research, and clinical subspecialties), the Sophie Davis curriculum was designed to reduce and streamline the hard science components of the curriculum and to increase the humanities, social science, and community medicine components.

Goals

Most of all, however, the Sophie Davis School differed by having a single, explicit educational and social goal as a medical school: to train young men and women to become primary care physicians committed to, and prepared for, practice in underserved inner-city neighborhoods and communities. (Upon admission, students sign a formal commitment to practice for at least 2 years in a medically underserved urban area of New York following completion of their postgraduate training. The hope, of course, is that their career choice will be a permanent one). As the other papers in this series attest, a growing number of medical schools have instituted programs emphasizing commitment to the underserved as one element in the full spectrum of their educational purposes. However, at the Sophie Davis School, this was to be the only element—the central purpose of the institution itself, its *raison d'etre*. (It follows, though perhaps it was not immediately recognized, that all of the processes of a medical school—not merely curriculum content and design, but also recruitment, selection, and admission of candidates; provision of role models and clinical milieu; and the presentation of both manifest and latent value choices—must be oriented toward and accountable to this goal.)

A second and implicit goal, clearly related to the central purpose of the school, was to increase the access of able but educationally disadvantaged students to such medical training. In the New York metropolitan area, "educationally disadvantaged" means, disproportionately, black, Hispanic, and Asian students, as well as working class students from both minority and dominent culture families (2). The hope was to recruit a student body reflective of the New York City population.

Both of these goals were derived, in the early 1970s, from a redefinition of the mission of City College. As a senior liberal arts and sciences undergraduate college of the City University of New York, located in central Harlem, the college would serve first as an urban re-

source, training students to address the urgent social, economic, health, and related problems of the inner city. Second, it would serve its new student constituency—mostly ethnic minorities—as it had served earlier constituencies, by providing (among other things) new and effective pathways to the profession, including law, medicine, engineering, and the performing arts.

Social and Community Medicine

The first class was admitted in 1973. Although many aspects of the curriculum were innovative (*1*), the extensive curriculum component in community medicine—known initially as the Program in Health, Medicine and Society—was most directly related to the goal of preparing physicians to provide primary care in underserved urban areas having staggering burdens of interrelated health, economic, and social problems. The program attempted to communicate a concept of social and community medicine that "does not reduce to laudable but long overdue changes in professional conduct, nor to sophisticated but sterile methods of health systems analysis. Rather, our work has attempted to take that which distinguished social medicine as a discipline—its concentration on those characteristics of communities which determine the health of their people—and to integrate this concern into a model of primary medical care," as stated in a paper by Belmar and associates (*3*). (Much of the following description of the Program in Health, Medicine and Society is drawn from this paper. Its authors, under the supervision of the staff and the chairman, Victor W. Sidel, of the Department of Social Medicine, Montefiore Hospital and Medical Center in the Bronx, were its original architects.)

For the program, primary care was defined as "the most broad and comprehensive level of medical care which, in a rational and humane health care system, serves as the first contact for direct care and as a portal of entry to the rest of the health care system," but then it was added: "In a less rational and less humane health care system, primary care must do more . . . the activities necessary to treat and prevent not only the diseases of the individual patient, but to identify and intervene in those aspects of the local community and society which perpetuate ill health." More specifically, four distinct but related roles were defined for the inner city primary care practitioner: to work "as a *clinician,* giving first contact continuing integrating care to individuals and families in the urban community; as a *community health promoter,* serving to protect the health of all the people in a defined population or geographic area; as a *researcher* in primary clinical care, epidemiology, social and institutional issues which affect the health of the people in the community; and as an *agent of change,* working with the community for those changes in the social, biological and physical environments, and in the pattern and distribution of health care resources, needed to protect and improve its health" (*3*). Three of these roles require the development of skills usually omitted from the training of physicians.

Training in the Field. Training in community health and social medicine begins in the first year of the Sophie Davis curriculum and extends through 2 full years—four semesters of combined course work and field experience plus a half-time field placement in the community during the summer between the freshman and sophomore years that continues for a half day per week throughout the second year. Although each semester's courses consist of lectures, workshops, and field experiences, the latter provide the core of the training. The community is the principal setting for teaching and learning. All of the teaching takes place in four specific communities in New York City —Harlem, the South Bronx, the North Bronx, and the Lower East Side (including Little Italy and Chinatown). Working in teams of varying sizes, the students learn the skills needed to enter a new community, to collect and interpret its demographic and health data, to identify and become familiar with all of the medical care and social agency resources available for the care of residents in the community, and to understand the basic elements of a community's history, culture, and structure.

The students receive intensive field supervision and support, from faculty familiar with each of the communities, in a series of structured field exercises that range from urban geography—housing, transportation, community facilities, and open space, to name a few—and demography to a detailed survey and analysis of social institutions and health care resources. At the same time, a two-semester series of lecture and reading modules covers aspects of primary care; the nature of communities; biological, social, and environmental determinants of health and illness; and the health care system of the United States and New York City. The learning process involves the simultaneous acquisition of both technical and social skills, of a theoretical framework for analysis, and of practical experience. During the first year, each of the four 20-student teams (1 for each of the 4 communities) produces 2 major documents: a community health diagnosis and a detailed discussion of a health-related community issue or problem.

During the summer at the end of the first year, each student enters the community as a health worker at 1 of a network of 52 field training sites—health centers, social service centers, day care centers, health-related community organizations, hospices, special schools, outreach programs, among others—ranging from small neighborhood storefront operations to large well-established social institutions. Every effort is made to give students a genuine service function—referral, screening, or advocacy—with special emphasis on prevention and health promotion, and to have them work closely with field agency staff in most direct contact with the community—family health workers, outreach workers, visiting nurses, and others who are demonstrably concerned and competent professionals.

The staffs of these field and community agencies, who comprise an extramural faculty of the community medicine program, provide daily supervision and join with the Sophie Davis faculty in structured efforts of supervision and evaluation using student logs, individual and group conferences, and formal training and review sessions. Although the formally allocated curriculum time for the summer field placement is 20 hours per week, most students invest up to twice that much time, and all continue to work at their community sites for at least one-half day per week throughout the second year.

Undergraduate thesis—end of 2-year experience. The second year's course work begins with an intensive one-semester course in epidemiology and social epidemiology and concludes with a wide range of small group seminars on selected topics in community health and social medicine. Our purpose is to provide the technical and epidemiologic orientation necessary for the final major phase of the 2-year sequence: an undergraduate thesis in which the student specifies a community health problem and explores that problem in the context of the population and institution where he or she works.

The subject matter of this thesis must be (*3*):

> . . . a problem close to those faced by the primary care physician and specific, if not necessarily unique, to the local community. . . . We require that our students get the approval of their host agency for their research project, and both the research and its written product are developed as a report that will go back to the agency to use in its work. This requires not only the application of traditional epidemiologic methods to new problems, but the skills to translate these back into easily communicated findings. Thus the student researcher is accountable to the community and its perception of needs and problems. In this sense we define a social medicine research methodology which is more than epidemiology and different from social research—one which involves the community both as subject and as co-investigator.

By the end of this 2-year sequence, most students have spent hundreds of days in an underserved inner-city community and in its health or health-related agencies, in a variety of roles, and this experience—which we believe is unparalleled in conventional medical education—is the core around which all didactic teaching is organized and to which it refers.

Deficiencies in Curriculum

Yet, there are major deficiencies in this model. In most U.S. medical schools, the teaching of community medicine (except for electives) is carefully restricted to the preclinical years; it is not approached as a clinical discipline; and both its orientation and its specific content tend to be lost as students go on to clinical clerkships (mostly in tertiary care settings) which emphasize the mastery of technological skills and which necessarily use a case-by-case rather than a population-based or community-centered approach. For Sophie Davis students, this separation is even more marked because the community medicine sequence ends a full 2 years (and, in the case of students following a longer track, 3 years) before clinical work begins. The exclusion of community medicine from the powerful professional socialization involved in clinical training makes the incorporation of community-responsive attitudes and techniques into the student's definition of a physician's role difficult if not impossible.

The Program in Health, Medicine and Society was originally planned to continue throughout all of the years of the Sophie Davis curriculum, to be incorporated into the teaching of physical diagnosis, interviewing, behavioral science, pathophysiology, pharmacology, and other preclinical areas and to conclude with clinical experience in organized settings of primary care in model inner-city medical care facilities. Of this original plan, all that remains is an elective clerkship in ambulatory care, taught in a hospital outpatient department rather than in a community-responsive practice, in the final semester of the last year in the biomedical program before graduation to the clinical years of medical school.

Plans for Revision of Curriculum

A major re-evaluation and revision of the curriculum is now underway, for the first time since the school's inception. Tentative plans for change include:

- Addition to the curriculum of intensive studies in sociology, urban anthropology, economics, and urban policy in the freshman year and the postponement of the community medicine courses, described earlier, to the sophomore year.

• Continuation of the teaching of community medicine throughout all the years of the School of Biomedical Education curriculum.
• Development of a network of ambulatory care clinical campuses, affiliated with the school in a manner analogous to the traditional medical school-teaching hospital relationship, in which clinical clerkships in the community dimensions of primary care can be placed. These ambulatory care clinical campuses will include large neighborhood health centers, urban health initiative projects, urban prepaid group practices, and some hospital-based settings for ambulatory care.
• Development of relationships with the Residency Program in Social Medicine, Montefiore Hospital and Medical Center, and family practice departments at Montefiore and other teaching centers in the New York City area and use of their residents as teachers and role models for our students.
• Provision of an elective 1- or 2-month clerkship in community-based primary care at one or more of the ambulatory care clinical campuses during the senior year of clinical training at the participating medical schools; students would return from their respective medical schools to the biomedical program for this purpose.

These changes, if they are implemented, should help to resolve the deficiencies—indeed, one might argue, the segregation of community medicine as something separate from and unequal to the clinical disciplines—that have limited the effective teaching of community medicine at the Sophie Davis School and elsewhere. Whether these changes will have an impact on career choice and practice location—on the central mission of the school—is, of course, unknown. We believe there may be even greater impact on the school's success in fulfilling that mission from changes related to its second and implicit goal of increasing the access to medical education of educationally disadvantaged candidates—working class black, Hispanic, Asian, and white students.

There is reason to believe that family background and socioeconomic status are powerful determinants of specialty choice, and that ethnicity and race may significantly affect practice location (*4*). Evidence from our discussions with students suggests that working class and lower middle class biomedical students, who are often the first in their families to attend college (let alone professional school) are far more likely to be interested in primary care than are the upper middle class students who saturate most medical schools. (Perhaps this is because becoming a primary care physician represents significant upward mobility for working class students, while subspecialty or sub-subspecialty status is more synonymous with middle class views of professional success.) Similarly, students with strong ethnic identifications (black, brown, yellow, or white) are far more likely to express a preference for returning to their own neighborhoods, which are generally underserved, precisely because they are so familiar and the unmet needs are so clear to them—an attitude that may be longer lasting than the equally heartfelt sentiment of some wealthier suburban students that might be characterized as "let me at the inner city—I burn to serve!"

Educationally Disadvantaged Students

With respect to ethnicity and socioeconomic class, the early history of the school was discouraging, if not disastrous, despite the best of intentions. From 50 to 60 percent of the first two classes admitted were minority students—and a majority of those were forced or elected to leave the school. In the years since then, when drastically smaller proportions of black and Hispanic students have been enrolled, their attrition rate has still been higher than the school's overall rate. (The proportion of women has been between 40 and 45 percent in all classes.) Initially, the intensity of the curricular demands and the necessary level of educational preparation were not fully anticipated, but it must also be true that the structural anomaly of admitting educationally disadvantaged students and expecting them to do college and medical school studies 2 years faster than they are normally done was not recognized.

In 1976, a 7-year track was formally established as an alternative to the 6-year curriculum, but in that year, well before the Bakke litigation, a law suit similar to Bakke's resulted in a court decision enjoining the school from even considering race as a factor in the admission process. By 1978, minority students comprised less than 10 percent of the entering class, and most of these were highly qualified graduates of outstanding New York and suburban high schools serving upper middle class constituencies. (Of course, such students should be included in minority representation at the School of Biomedical Education. But it may also be argued that such students have a very high probability of entering and completing medical school by conventional routes, and that their admission to the school therefore merely provides an alternative pathway, rather than significantly increasing the pool of minority physicians.) The remainder of the class included some working class and lower middle class students, but the majority were indistinguishable in most respects from the pool admitted to conventional medical schools—except that they were 4 years younger.

Clearly, vigorous and new efforts were needed to

expand the pool of qualified minority and low income applicants—efforts that took into account the formidable urban social problems that underlie and produce "educational disadvantage." These problems include the educational inadequacies of many metropolitan area high schools, particularly in minority and low income areas, including—in many cases—failure to offer 11th or 12th grade courses in mathematics, chemistry, physics, or biology. They include direct and indirect messages that medical education or other professional training is an impossible dream, too costly, out of reach, or an improbable long shot for such students ("Malcolm X messages," one student called them, referring to the moving autobiographical anecdote in which the young Malcolm, revealing his desire to become an attorney, is told by his teachers he had better think about carpentry.) They include grading policies which challenge able and superior students in such schools to make only a moderate effort, reward them with high school scores in the high 90s, and leave them to discover later that they fare far less well on nationally standardized examinations. They include inadequate high school guidance and academic counseling. And they include low incomes and the need to work at least part time, as well as overcrowded home situations that provide neither space nor privacy for intensive study.

Identifying Qualified Candidates

In the past year, two efforts have been launched to increase the number of minority and low income applicants. The first effort, a "bridge to medicine" program, identifies socioeconomically disadvantaged high school seniors (family income cannot exceed $12,000 a year), generally from inner-city high schools, ranking within the top 10 percent of the high school class, strongly motivated for a career in medicine, but lacking the extensive preparation required—as indicated by scores on statewide or national examinations. During their senior year, 25–30 high school students come to City College, on released time, for 4 hours every day. They receive an intensive program, taught by special faculty of the School of Biomedical Education, in chemistry, physics, mathematics, scientific reading skills, study techniques, and first-hand observation of health care facilities, training programs, and clinical techniques.

Of 24 black and Hispanic students in the first "bridge" program, 7 qualified for admission to the School of Biomedical Education, 5 entered an enriched premedical program at City College, and 12 entered colleges in the city or State university systems or elsewhere. As a result of this program and other efforts, 29 percent of the students entering the School of Biomedical Education in 1979 were from minority groups (11½ percent black, 11½ percent Hispanic, and 6 percent Asian). These students differed significantly from those in earlier classes with respect to range of socioeconomic class.

A second effort in the attempt to identify a pool of able, highly motivated but underprepared low income and minority candidates for medicine is now underway. In the past, most early recruitment efforts have focused on the high school. There are, in our view, other and equally powerful pathways to recruitment. A number of the largest labor unions in the New York metropolitan area have heavy black, Hispanic, and low income memberships. (Two, Local 1199 of the National Union of Hospital and Health Care Employees, a division of the Retail Workers Department Store Union, and District Council 37 of the American Federation of State, County and Municipal Employees, are unions of hospital and health care workers and have predominently minority group members.) Therefore, these unions represent a pool that is simultaneously working class, minority, and oriented toward medicine. With the enthusiastic cooperation of these and other labor organizations, an attempt is underway to recruit through the unions and the families, to make clear to a new constituency of the city's population that professional training is accessible to them, that careers in primary care in the inner city are available and urgently needed, and that they can contribute to the solution of their own health care problems.

Comment

The survivors of the first entering class began their internships in 1979—the majority in family practice, medicine, or pediatrics. Of course, it is too soon to know whether the simultaneous efforts of shifts in curriculum emphasis and change in the recruitment pool will affect specialty choice and practice location, but—at the very least—they should enrich the scope of medicine and diversify its practitioners.

References

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