Preparing for Medical School and the Medical Profession: Advice to Advisors

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In recent years, medical schools have experienced a dramatic increase in student applications for admission. The increase comes at a time of great change in the medical profession resulting from the effects of health care reform and the expansion of biomedical knowledge and applied technologies. Students making applications to medical school should know how these changes will impact the practice of medicine as well as how medical schools are revising their medical curricula to meet the challenges of a 21st century medical practice. Prospective applicants should adapt their undergraduate preparations for medical school and the medical profession accordingly.

Within a 6 year period, the number of applications received by United States medical schools spanned from the historic nadir in 1988 with 26,721 applications to the zenith in 1995 with 46,591 applications (Association of American Medical Colleges [AAMC], 1995). Competition for seats in medical school classes across the nation is intense. Undergraduates pursuing entrance to medical school are seeking advice about presenting themselves to medical school admissions committees to be most competitive. However, no single, prescribed preparation guarantees admission to medical school. In an effort to meet their particular institutional missions, admissions committees at different medical schools are likely looking for slightly different academic and personal attributes in the applicants they are recruiting.

Selecting among talented applicants is a difficult charge for medical school admissions committees. Equally daunting is providing sound counsel to potential applicants seeking information on medicine as a career, entry requirements, and admissions processes. At a recent meeting of the National Academic Advising Association, directors of admissions from three public medical schools in the southeastern United States offered their insights into providing accurate advising to future medical school applicants.

Medical Practice in the 21st Century

Applicants to medical schools should educate themselves about the medical profession and the potential influences of health care reform and managed care on the practice of medicine in the new millennium. The current focus of health care reform is on reducing health care costs, providing universal access and universal insurance coverage, and better educating the American public about health promotion and disease prevention (Elam, Wilson, Wilson, & Schwartz, 1995). Fiscal reforms in health care reflect a shift in financial risk from companies to providers, including physicians and hospitals, in an effort to control costs. In managed health care settings, physicians and hospitals are paid a set fee for each patient, and providers manage patient care within that cost structure. Health care delivery networks concentrate on providing care for groups of patients in an effort to keep them healthy (Greenlick, 1995). Managed care initiatives also impact the specialty mix and are driving the need for more first-contact, primary care physicians and fewer subspecialists. Thus, there is a shift from acute to preventive care, from hospital care to ambulatory care, and from specialty care to primary care (Elam, et al.). Given these changes in health care delivery, physicians anticipate less autonomy, more regulation in fee structures, and threats to the quality and stability of the doctor–patient relationship.

Beyond the health care delivery system, developments in biotechnology resulting from unprecedented bioscientific research discoveries are dramatically altering the diagnostic and therapeutic aspects of medicine. For example, advances in subcellular and molecular medicine will enable physicians to make diagnoses on the basis of genetic factors and prescribe gene therapies. In the 21st century, physicians will be able to detect diseases before they become symptomatic and be able to cure diseases before they actually occur. In addition, immunological research leading to the prevention of the body's natural rejection of foreign tissues will

contribute to greater success in transplantation and the development of new inert substances to facilitate replacement of organs and body parts.

To cope with these rapid changes in the health care system, Dr. Jordan Cohen (1995), President of the Association of American Medical Colleges, suggests that the 21st century physician must be expert in managing clinical resources; work collegially with medical team members, including nonphysicians, in a structured corporate environment; and maintain medical professionalism in keeping the interests of one's patients uppermost.

Changes in Medical School Curricula and Qualities of Competitive Candidates

Many curricula changes, designed to prepare student physicians for 21st century medical practice, are currently underway at medical schools throughout the nation. Some changes in the structure of medical education include reduced numbers of lectures in passive learning settings, increased numbers of small group sessions, and problem based learning (PBL) opportunities (Friedman, de Bliek, Greer, Mennin, Norman, Sheps, Swanson, & Woodward, 1990; Kassebaum, 1989; Tosteson, 1990). PBL involves student activity; for example, students read about patient cases to identify learning issues, then use self-directed and collaborative learning models to find related medical literature, find answers to their questions, and later present their findings to their student colleagues and faculty preceptors in a discussion setting. In the traditional medical curriculum, students would take faculty prepared handouts and absorb them. They would rarely read the primary text or even consult a second source for information. They would memorize, and those few blessed with a photographic memory would excel. Students could get through their first two years of medical school scarcely forced to say a word. Today medical school is different. Students have to talk, they have to work together, and they have to evaluate the medical literature. Today's students must synthesize information and demonstrate that they can make connections across medical disciplines. They must write and read and think. They must be able to apply their knowledge in the patient care setting, and most of all, solve problems.

In short, those who excel in medical school today are those who have experience in traditional liberal arts education—an education much less black-and-white than the narrowly focused science curricula encouraged in past years. Medical students of tomorrow must also possess strong skills in the sciences; however, the undergraduate science curriculum needs to be presented in ways where students need to analyze and apply information. Changes recently made in the Medical College Admission Test (MCAT) requiring students to read passages, extrapolate information, and apply knowledge are taking their toll on those students accustomed to memorization. Because medical schools are making great changes in their educational programs, the demonstration of cognitive skills and abilities is becoming more important in the selection process.

Preparation for Medical School

Aspirants for medical school should be advised to seek undergraduate preparation which gives them a solid science background and an excellent exposure to courses fostering thinking and problem solving. Undergraduate students should seek educational experiences which force them to move beyond memorization of discrete facts into the more advanced skills of integration, analysis, and application of knowledge to formulate, test, and apply hypotheses. Core course work required at most medical schools includes a year of biology, general chemistry, organic chemistry, and physics—all with laboratory experiences—with need for verbal and written communication skills (Bennett, 1995). However, beyond the prerequisite preparation, applicants should structure their undergraduate curricula to include philosophy, psychology, sociology, and multicultural educational experiences that give them the background necessary to understand and empathize with an increasingly diverse patient population. Statistics, computer and information sciences, economics, health administration, and small business practice are also of benefit to the physician of today and tomorrow (Elam, et al., 1995).

The Medical College Admission Test

The Medical College Admission Test was completely redesigned in 1991. The new examination is divided into four sections: Verbal Reasoning, Physical Sciences, and Biological Sciences—each scored on a scale from 1–15, and a Writing Sample—consisting of two essays graded on a J–T scale. The current version of the MCAT is designed to test the ability of its examinees to read closely, synthesize information, evaluate its importance, and draw conclusions (Mitchell & Haynes, 1990). In the Verbal Reasoning section, students read passages of diverse content which may include subject matter regarding the humanities, social sciences, and areas of natural sciences not tested on the MCAT Physical and Biological Sciences sections and evaluate arguments presented in prose. The sections on physical

sciences (covering general chemistry and physics) and biological sciences (covering biology and organic chemistry) also require students to read passages and extrapolate information. Approximately three-fourths of each subtest presents scientific subject matter in textual form, requiring students to apply their reading comprehension skills, scientific knowledge base, and quantitative abilities to synthesizing information and solving problems. The remaining one-fourth of each test presents multiple choice questions independent of any passage and of each other. The Writing Sample consists of two 30-minute essays designed to assess skill in developing a central idea; synthesizing concepts and ideas; presenting ideas cohesively and logically; and writing clearly, following accepted practices of grammar, syntax, and punctuation consistent with a timed, first-draft composition (AAMC, 1996). Overall, the examination has been redesigned to focus the student's learning and preparation on the ability to read, write, and solve problems, and goes beyond previous examinations which simply require students to recognize (or guess) correct answers. This new emphasis underscores the type of undergraduate preparation required for future successful applicants to medical school.

Personal Qualities, Interests, and Work Experiences

Medical schools seek students who are well-rounded and possess outstanding interpersonal skills. Intelligence, caring for others, integrity, leadership, reliability, stamina, and strongly tested motivation for medicine are necessary personal qualities. While advisors cannot exert much influence over many personal characteristics of applicants, they can nurture a knowledge of the medical profession and a motivation for the field. Advisors should direct prospective applicants to seek hands-on experiences in the real world of medicine, without encouraging applicants to learn complicated medical procedures and terminology. Most medical schools advocate that prospective students seek experiences in health settings which enable them to determine that medicine is the right profession for them. Prospective applicants should talk to physicians about experiences in the medical field, shadow them in the office or at the hospital, or volunteer in a health care facility. Such experiences should provide the applicant with a realistic perspective to confirm his or her reasons for pursuing a medical profession and help the applicant gain insight into the challenges faced by today's practitioner. Significant experience may be pursued in any specialty of medical practice, although given changes in the health care delivery system, exposure to primary care medicine may hold greater sway with admissions committees at some institutions.

The Admissions Interview

Many applicants appear to be qualified for admission based strictly on consideration of academic performance in undergraduate course work and MCAT scores. However, admissions committees also incorporate noncognitive factors in their selection decisions. The personal dimension of the prospective student's application is closely examined during the admissions interview. The interview provides the opportunity to assess the applicant's communication skills, critical thinking abilities, and motivation for the study and practice of medicine. This assessment helps complete the composite picture of the applicant, answering not only the question of whether she or he can do the work in medical school, but also whether she or he will and should do the work.

Annually, the quality and size of the applicant pool influence the number of interviews offered; only applicants with the strongest academic and personal records receive an interview. Applicants invited for interview have an opportunity to meet with faculty, student, and community admissions committee members in a variety of settings. Interview formats vary across institutions. Some schools use panel interview formats where one (or more) interviewers talk with one (or more) students, while other institutions offer one-on-one interviews with one interviewer speaking with one candidate for admission. In addition, some schools have open-file interviews where interviewers have access to and knowledge of the applicant's academic and personal accomplishments. Other institutions use closed-file interviews where interviewers have no knowledge of the applicant's personal and academic record, but frequently rely on a circumscribed set of questions to ask all applicants. Regardless of the particular approach, the aim of these interviews is to get to know the people who want to become physicians.

Applicants invited for interview should take time to prepare. They can begin by interviewing themselves, asking the kinds of questions they expect in an medical school admissions interview. Types of questions they will likely encounter in the interview may range from the obvious "Why do you want to become a physician?" to the more subtle "What is your favorite book?" Applicants need not prepare for an interview by creating canned responses or producing a script. Instead, they should form a

framework of their ideas, interests, and experiences from which to respond. Applicants should also be prepared for the unexpected question and have the candor to say "I'm not sure of that" or "I haven't really thought through that issue."

Candidates for admission who have reflected on their reasons for pursuing a career in medicine can answer the questions "Is medicine what I really want to do?" and "Does my understanding of the lives of both medical students and physicians I have known fit with my personal and professional goals?" Interviewers will be listening for responses which reflect both insight into the profession and the requisite motivation to achieve educational and professional objectives. Recognizing that their work has a clear and direct impact on the medical profession, medical school interviewers take their responsibilities seriously. Both the applicant and the interviewer endeavor to play a role in shaping the future of medicine.

Reapplicants

According to Kassebaum and Szenas (1995), a substantial part of the growth in the applicant pool during the 1990s can be attributed to students reapplying after not gaining admission on their first attempt. They argue that the increasing trends of reapplication are driven in part by motivation to enter the profession and, to a lesser extent, by lack of professional career opportunities in the economic market. Admissions directors at nearly all medical schools would argue that qualified applicants outnumber currently available seats in entering classes. Thus premedical advisors are being realistic when they encourage their rejected students to reapply. However, these aspirants for medical school should be encouraged to find some way to improve their overall records if they elect to reapply. Rejected applicants could meet with medical school admissions directors to seek counsel in identifying weaknesses in their applications. Generally speaking, those weaknesses can be classified as academic, experiential, or personal. If their problems are academic, reapplicants should complete additional course work or retake the MCAT. If their weaknesses are experiential in nature, additional time gaining medically relevant experience in hospitals, clinics, health departments, nursing homes, or private physicians' offices through ongoing work or volunteer experiences may be pursued. Personal improvements can take many forms: better focusing one's reasons for entering the medical profession; performing more acts of humanitarianism or service; improving communication skills, such as distilling and defending ideas to improving eye contact. The key for reapplicants is the continuous improvement of their credentials. Admissions committees review the files of reapplicants by asking "What's new?" They also look closely to see whether the applicant has redressed any area of defined deficiency from previous applications.

The Role of Premedical Advisors

Premedical advisors are allies of both applicants and medical schools. Their actions are an important component of the process of selecting well prepared students who will be the health care providers of tomorrow. The efforts of advisors to mold students are critical in preparing future physicians. Their counsel regarding changes in the practice of medicine can assist students in the development of career goals which meet physician staffing needs.

Having information on the person making the application is essential in the selection process. In communications with medical schools, advisors presenting a clear and candid assessment of students frequently make the difference between who is invited for interview and who is not. Admissions committee members read recommendation letters for information not available from the American Medical College Application Service (AMCAS) application. Advisors put a human dimension to the record when they describe their student's intellectual abilities and curiosities, the level of motivation and drive, the ability to work with others, the communication and interpersonal skills, the dedication to goals, and the hardships faced, dealt with, and overcome. Admissions interviewers cannot possibly determine in a short interview period what advisors have come to know over years of interaction. As a result, subjective judgments of advisors are valued and folded into the subjective judgments on selection made by admissions committees.

Changes in medical education and the practice of medicine have resulted from the push for reforms in the delivery of health care and advances in biotechnology. Such changes have implications for the education and preparation of the premedical student. Knowledge of the reforms and their implications is of vital importance to advisors as they assist students in preparing for the myriad of challenges of 21st century medicine.

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