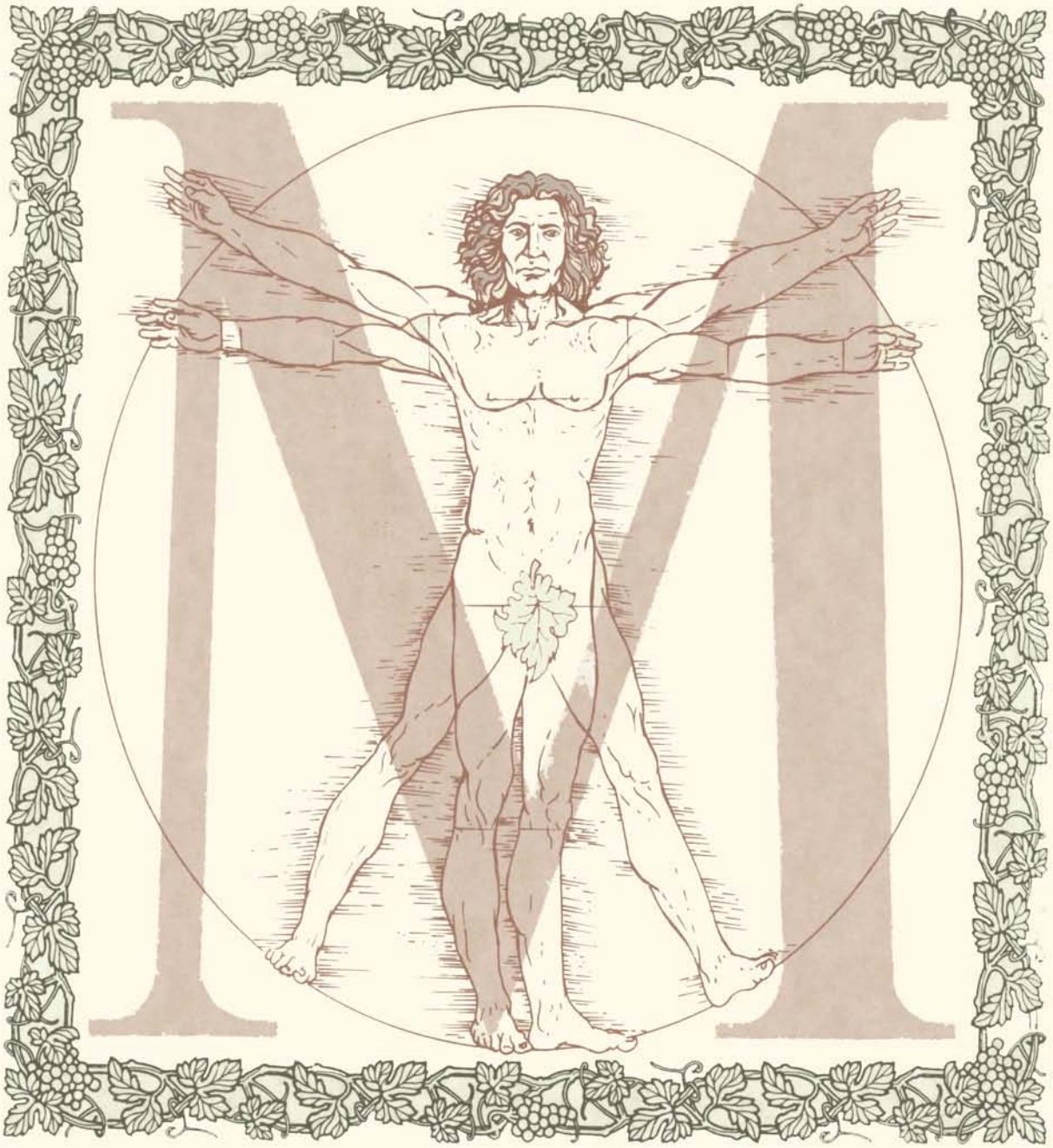
Minorities in Medicine

a guide for premedical students



MINORITIES IN MEDICINE
a guide for premedical students

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I. Introduction to HPCOP

The Health Professions Career Opportunity Program (HPCOP) was established in 1977 to increase the number of underrepresented minority students entering health professions in California. By lending support to a wide range of services for undergraduate and recent postbaccalaureate students, HPCOP staff work to enlarge the pool of underrepresented minority applicants accepted and enrolled in our state's health professional schools. Some HPCOP-supported services appear below:

Student conferences: HPCOP-supported conferences include: Survival Skills and Pre-Health Preparation; Medical College Admission Test (MCAT); Dental Admission Test (DAT); National Board Review; Graduate Records Exam (GRE) Preparation; and Admission to Medical, Dental, or Public Health School.

Newsletter: *Health Pathways* contains meaningful and timely information on health professional schools, admissions, financial aid, health careers, student health organizations, and health issues.

Other publications: The program publishes brochures on health career opportunities, health professional school preparation, and financial aid. Staff members distribute these publications free to student organizations and educational institutions.

Other activities: HPCOP provides applicant counseling and technical assistance to colleges and universities on minority health professional development. It also conducts research on minority participation in the health professions and aids in recruiting minority students into nursing.

If you have questions about health careers or any HPCOP-supported activities, please contact our staff by writing or calling:

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II. Our purpose

The purpose of this booklet is to let you know the great need for more physicians from underrepresented minority groups and to guide you in developing a plan of action that leads to your admission to a school of medicine and to your completing the course of study.

California has a drastic shortage of minority physicians. For instance, Hispanics—more than 3 million people—comprise over 16.4 percent of the state's population; however, only 1.1 percent of the primary care physicians come from that linguistic and cultural background. Only one Hispanic primary care physician is available to serve for every 21,245 Hispanic Californians, whereas one Anglo primary care physician serves per 990 Anglos. Similarly, African-Americans represent over 7.6 percent of the state's population, while 2.2 percent of primary care physicians are African-American—one per 4,027 African-American Californians.[1]

Analysis of California's supply of primary care physicians shows the overall ratio of primary care physicians to population for Los Angeles County as 1-to-1,075. For the East Los Angeles area, with a chiefly Hispanic population of 750,000, the ratio is 1 primary care physician to 3,700 residents. West Adams, a primarily African-American area with a population of 560,000, has 1 primary care physician for every 3,131 residents.[2]

Limited access to medical services contributes to higher maternal and infant mortality rates among certain ethnic, racial, and low-income groups (African-Americans, on the average, live five fewer years than nonminorities). Mortality rates in general are higher among all minorities and the poor than the remainder of the population.[3]

East Los Angeles, one of seven Los Angeles County health districts studied to compare incidence rates of various diseases, ranked 1st-, 2nd-, or 3rd-highest in 23 of 24 disease incidence categories. Similar rates apply for the West Adams district.

Various factors contribute to poor health status among minorities: High medical costs combine with low incomes to discourage many from seeking healthcare; many minority persons are unfamiliar with—and hesitate to become involved in—the healthcare system bureaucracy; and few medical providers speak the language of non-English-speaking clientele, making it difficult for clients to communicate their needs.

The shortage of physicians in minority communities contributes to inadequate access to healthcare in those communities. Many physicians—as studies have shown—practice in geographic areas similar to their own social and economic backgrounds. Historically, this has meant that White physicians tend to locate their practices away from low-income and minority communities, creating a shortage of physicians among minority populations.

However, minority medical school graduates tend to practice in underserved minority areas. Nevertheless, our state needs more minority physicians to help serve the medical needs of low-income and minority people. Until the number of minority physicians increases, these populations will continue to receive inadequate healthcare services.

In the following section, you will learn about allopathic physicians (MDs) and osteopathic physicians (DOs), as well as the education requirements necessary for admission to the respective schools.

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1 **Table** 1, pg. 29, Appendix.

2 **Table** 2, pg. 29, Appendix.

3 Racial minority mortality rates are 6 percent higher for males and 5.4 percent higher for females.

III. What's it all about?

• *The allopathic physician (Doctor of Medicine, or MD)*

As an allopathic medical doctor, you will work to prevent, treat, and heal illness and injury. MDs perform medical examinations, diagnose diseases, and care for patients, using surgery, pharmaceuticals, and other means. They advise patients on how to keep fit and prevent illness through proper diet and exercise. Some MDs hold jobs as researchers, teachers, or administrators. Others write and edit medical textbooks and journals.

Medical training means that many options are open to you. Specialty choices range from that of general practitioners, who see all kinds of patients with all kinds of health problems, to the various other specialties, such as obstetrics/gynecology or opthalmology. An area especially needing more minorities is that of the primary care physician specializing in family practice. As a family practice physician, you care for the entire family—children and adults—from birth through old age. Other primary care specialties include internal medicine, pediatrics, and obstetrics-gynecology.

MDs practice medicine in private offices, hospitals, and clinics. They may be practitioners who are self-employed or employed by hospitals, health maintenance organizations (HMOs), clinics, or even other physicians. As an MD, you may work as a solo practitioner or in a group practice with other physicians (including osteopathic physicians) and other health team members, including nurse practitioners or physician assistants.

The allopathic curriculum covers 3 years to 7 years of medical education. Instruction is provided in anatomy, biochemistry, physiology, microbiology, pharmacology, pathology, and behavioral sciences during the first several academic periods. In some schools, you begin learning from the first year how to interview and examine patients. In other schools, clinical contact is initially limited to observation. In all schools, however, by the third semester (or fifth quarter), you begin to learn how to obtain historical data from patients and conduct physical and selected laboratory examinations.

The last four semesters (or six quarters) are usually devoted to education in the clinical setting. The immediate and specific aims of clinical education are to enable you to establish desirable physician-patient relationships, take medical histories, conduct physical examinations, and recognize the more familiar disease patterns. The overall aim is for you to develop an understanding of the patient as a total human being and a sense of the professional maturity medicine demands.

As you progress, the range of opportunities for career development becomes apparent. Elective courses in the basic, behavioral, and clinical sciences permit you to explore career options. Depending upon your interests and talents, you will have the opportunity to arrange part of your program. Opportunities to take electives vary greatly among schools for the first four semesters. In the last two semesters before graduation, many schools permit you to arrange your entire programs on an elective basis. Clinical electives include clerkships in the primary specialties and in the many subspecialties.

Each medical school's faculty is responsible for establishing the criteria for student performance, promotion, and graduation. Many faculties provide written learning objectives for each course or segment of the curriculum. Some combination of direct observation and written and oral assessment determines whether you have met these objectives. The frequency and pattern of evaluation vary from institution to institution. During each clinical rotation, students receive written evaluations of their knowledge and professionalism. Oral and written exams occur with the required core clerkships. Year-end comprehensive exams are often required. For you to advance to the third and fourth years, 67 schools now require you to pass Part I of the National Board of Medical Examiners (NBME) examination at the end of your basic science sequence. Fifty-one schools require you to pass Part II of the NBME examination to graduate.

Grading in about three-quarters of the schools is pass/fail or honors/pass/fail. Regardless of the pattern or frequency of evaluation used, your abilities are carefully scrutinized. This is particularly true in the clinical clerkships where one-to-one relationships between faculty and students permit close observation.

Exposure to the various branches and aspects of medicine helps you determine the course your education will take during your residency years. If you decide to practice in a medical or surgical specialty, the requirements of the certifying board for that specialty will mold the choice of the first-postgraduate-year program. For specialties such as family practice, internal medicine, pediatrics, and surgery, you are encouraged to enter directly into the first-postgraduate-year program of your chosen specialty and to continue in this program until you have completed the specialty board requirements.

For other specialties, you are encouraged or required to spend your first postgraduate year in a program offering clinical experience. Examples of these specialties are anesthesiology, dermatology, opthalmology, psychiatry, and radiology. Usually you spend your first year in internal medicine or in a diversified program, with the expectation that you choose a specialty in your second postgraduate year.

By your second postgraduate year, you will be asked to make a career decision regarding your specialty and to seek certification by one of the 24 specialty boards. You may take 1 year to 2 years of additional training in a subspecialty. The Directory of Residency Training Programs, published by the American Medical Association for the Accreditation Council for Graduate Medical Education, details specialty certification requirements. This publication is on file in medical libraries. You can obtain additional information by writing to the respective boards listed in the directory.

• ***The osteopathic physician (Doctor of Osteopathy, or DO)***

Doctors of osteopathy are fully trained and licensed to practice all phases of medicine, as are MDs. DOs, however, are also trained in osteopathic manipulation, a technique of using the hands to diagnose illnesses and treat patients, emphasizing the musculoskeletal system, holistic medicine, proper nutrition, and environmental factors.

Most osteopathic physicians are primary care physicians. They perform surgery, deliver babies, treat patients, and prescribe medication in hospitals, clinics, and offices, just as allopathic physicians do.

To become an osteopathic physician you must receive 3 years to 4 years of premedical school education at a college or university and 4 years of study at an osteopathic medical college. Then you must train as an intern, and, if you want to specialize, serve as a resident physician.

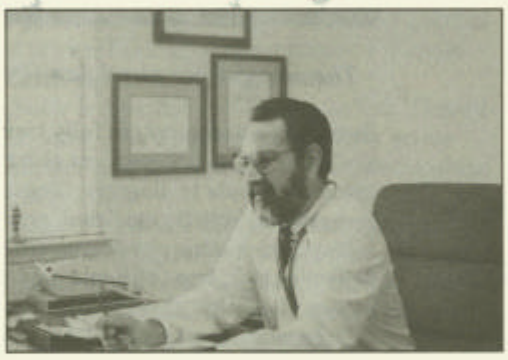
The osteopathic medicine college curriculum extends over a four-year academic and clinical program. You can obtain information about admission policies and procedures by writing to: American Association of Colleges of Osteopathic Medicine Application Service, 6110 Executive Blvd., Ste. 405, Rockville, MD 20852.

During your first two years of osteopathic medical college, you encounter the concepts of osteopathic principles and practices, as well as the basic and clinical sciences. During your third and fourth years, clinical rotations with patient contact are emphasized. Throughout your training, you rotate in various medical specialty areas—an introduction that helps you decide whether to specialize. After completing osteopathic medical college, you must accept a one-year internship. If you want to specialize, an additional three years of study is required.

Like MDs, osteopathic physicians are in the forefront of the battle against disease, traumatic injuries, and other health problems. DOs are greatly needed, particularly in underserved and rural areas.

IV. Why should you consider becoming a doctor of medicine or osteopathy?

A significant part of your community's healthcare falls to your local physician. The quality of healthcare the physician provides depends in part on his or her ability to relate to the people served. Commitment to quality healthcare in any underserved community tends to relate to the cultural bond between the provider and the healthcare consumer. Yet, many physicians who work in minority communities do not live in the community, and are unfamiliar with different needs that influence healthcare delivery for minorities. Economic, language, and cultural differences make it difficult for the nonminority physician to deliver to minorities healthcare services that are comparable to those enjoyed by nonminorities.



Minority physicians, such as family practitioners, internists, pediatricians, obstetricians, gynecologists, and surgeons, tend to recognize and meet the needs of minority and low-income communities. They listen to patients with a better understanding and communicate in terms patients understand.

Moreover, the minority physician's association with health educators, administrators, and legislators offers countless opportunities for improving the community's social and economic status. For example, a minority doctor serving on a health planning and policy commission can assist in bringing needed healthcare services and training programs to the community.

If your sciences and mathematics skills are weak, work to improve these skills rather than avoid the classes.

V. Prepare for your medical career[4]

• ***Select appropriate courses***

The first step toward becoming an allopathic or osteopathic physician is to recognize you don't have to be a genius. If you have an interest in people and the motivation and commitment to help them, you already possess the most important character traits of a successful doctor. And with somewhat-above-average intelligence, all you need are lots of hard work, good study habits, discipline, and perseverance when confronted with obstacles.

Allopathic and osteopathic schools want well-rounded, intelligent students with diverse knowledge and experiences. All schools require the following:

- Inorganic chemistry (1 year)
- Organic chemistry (1 year)
- Physics (1 year)
- Biology or zoology (1 year)

Classes *recommended*, but not required are:

- English composition and literature (1 year)
- Calculus (1/2 year to 1 year)
- Quantitative analysis (1/2 year)

As a high school student, concentrate on college preparatory classes with a mathematics and science focus, maintain a good GPA, and complete all requirements for entering an undergraduate college or university. Good communication and English skills are necessary. Some knowledge of sociology, psychology, and the humanities is encouraged. Consult with medical students and advisors when planning your college curriculum. Recommended are classes in genetics, embryology, biochemistry, and cell physiology.

As for admission to allopathic or osteopathic school, any academic major is acceptable as long as you complete the school's prerequisites. You should take courses offered for science majors, including laboratory work. If your sciences and mathematics skills are weak, work to improve these skills rather than avoid the classes. Enroll in the courses with the intent of gaining a solid understanding of concepts. Contact your school's learning center for information on tutoring services offered for these subjects. Make full use of the services.

Besides science and math, concentrate on other classes that stress the problem-solving and study techniques required in medical school and in the practice of medicine. In general, take no more than two of your science courses during any one semester. If you major in the sciences, most of the prerequisite courses you take count toward your major

4 Information Sources, pg. 30, Appendix.

requirements. Try to keep your total units at 13-15 per semester (12 or 13 if working part-time).

Each medical school is different. Many schools evaluate disadvantaged applicants based on unique skills and experiences in addition to the usual criteria. Specific requirements vary from school to school. You are responsible for finding out the courses required for the schools in which you are interested. To do this, get a copy of Medical School Admission Requirements, published annually by the Association of American Medical Colleges (AAMC),[5] or the College Information Booklet published by the American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS).[6] You will be provided specific information on every allopathic (or osteopathic) school in the United States, including class size, courses, curriculum, deadlines, expenses, financial aid, philosophy, prerequisites, and other information.

• ***Build your support group***[7]

Building your support group can be your most pleasurable and rewarding step in preparing for a medical career. To develop your support group, you can, when the need arises, randomly select advisors, students, or physicians to help you. Or you can cultivate your support team with forethought and count on their support throughout your school career. The second method is usually more beneficial and works like this:

1. Select five people in different career fields to help you with your specific academic needs and career goals. Don't hesitate to aim high in your selections. For example: If you want to become a pediatrician at XYZ Hospital, contact the physician in charge of pediatrics at that hospital and ask him or her to assist you in your efforts; if your weakness is in math, enlist the support of a previous math instructor; if you want to set up a family practice, include your family physician.
2. Write or phone each of the five to schedule an appointment to discuss your career goals and aspirations. Express your interest in their career fields. You'll be surprised at how many will be eager to help you.
3. Regularly speak with or write to members of your support group. Let each know your achievements, and call on them for help and guidance as you progress through college and medical school.

Enjoy the benefits of the relationships you build. The math instructor may save you hours of study. The hospital administrator who follows your progress may offer you a job. The physician may give you invaluable tips. Your support team can be as large as you like. Be sure to contact the recruiters and students of the school of your choice to get current information and ample counseling.

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5 Copies can be purchased at most college bookstores, or you may write to: Association of American Medical Colleges, One Dupont Circle NW, Ste. 200, Washington, DC 20036 [for allopathic careers].

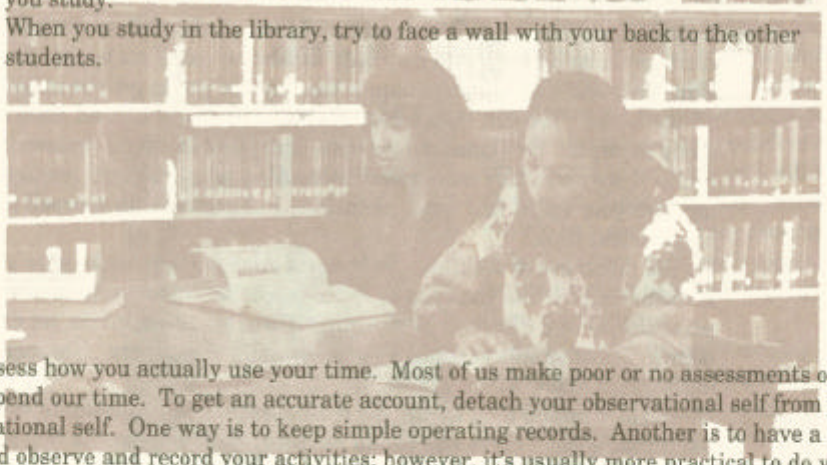
6 American Association of Colleges of Osteopathic Medicine Application Service, 6110 Executive Blvd, Ste. 405, Rockville, MD 20852 [for osteopathic careers].

7 Student organizations: A current Third World Student Organizations and Health Group Directory can be obtained through the Health Professions Career Opportunity Program (see address & phone number, pg. 1).

• ***Study well and seek good grades***

Studying and attaining good grades are important for your getting into a medical school. Don't expect to "slip in" with a low grade point average. Striving to attain the highest GPA possible will help you develop the study skills needed for success. To learn to study successfully, you must have discipline, be motivated, manage your time effectively, and be able to review material by formulating questions to ask yourself. Here are some study tips that, when practiced, will be of great benefit to you:

1. Set aside a definite number of hours each week to study specific courses at designated times.
2. Study *at least* one hour outside class for every hour spent in class.
3. Study between classes—don't waste valuable time.
4. Study consistently and review notes as soon as possible after each class.
5. Study in a quiet, well-lit place. Make it a habit to study in the same location.
6. Don't mix socializing with studying. Studying with friends often leads to time wasted socializing. Study with three or fewer friends—those who expect to achieve goals similar to yours.
7. Cut down on distracting noises. Turn off the stereo, radio, and television when you study.
8. When you study in the library, try to face a wall with your back to the other students.



Assess how you actually use your time. Most of us make poor or no assessments of how we spend our time. To get an accurate account, detach your observational self from your operational self. One way is to keep simple operating records. Another is to have a friend observe and record your activities; however, it's usually more practical to do your own recording. Another approach is to go through a checklist of difficult points where time slips away. The following list provides ideas on how to go about doing this:

1. Do you lose time getting started? Many students have problems getting down to the books even though they set aside time to study. A related problem is "getting warmed up." Some students feel they need a greater warm-up time than do others. Determine the times of day you are most alert and effective, and schedule your study periods for then. Be realistic in selecting times to study.
2. Do you lose time through disorganization? Determine what you want to accomplish during your study. Rather than grabbing the first book handy, plan out what you want to accomplish—what you should study first. Be wary of trying to complete too many different activities or study problems in too short a time. Studying the most difficult or the most boring courses first is often beneficial. Then, after you have

completed your goals within your specified time, reward yourself by studying the courses you enjoy.

3. Do you lose time to distraction? Prioritize and budget your time. Use the prime hours when you feel freshest to study. Do your routine activities (such as laundry) during the times when you're less likely to be motivated or alert. For your studying to be more effective, screen your activities, apply value standards, and learn to budget your activities and time accordingly.
4. Do you try to become an expert on every subject? If you're worried, anxious, or insecure about a subject, you might try to cram all available facts into your head and hope for the best. Instead, determine what you need to know. Plan to learn systematically the main ideas and enough supporting details to enable you to understand and answer exam questions. Review old exams to determine what aspects were more important than others. Many professors make old exams available in the library.
5. Do you lose time by working on a problem so long that you are mentally wheel-spinning and getting nowhere? If fatigued or stuck on a problem, go on to something else and return to it later. Rather than spending two or three hours agonizing over a problem, you can usually solve the problem faster if you approach it again after some other activity.
6. Do you lose time on needless reading? Many students faced with long reading lists start plodding through and may only finish two out of six books. Develop effective skimming and scanning techniques that enable you to get the major concepts from all the books. You can then select the books you need to read more carefully or study in depth. By skimming for main ideas and carefully reviewing them, you retain more and study more effectively. Also, practice rapid reading techniques to improve your speed and comprehension. Put pressure on yourself to retain more ideas in less time.
7. Do you make use of outlines? Before you start writing, make sure you have an identifiable goal and that you have the major concept clearly in mind. Get to the point simply and directly. Before you answer essay questions, jot down major points. Make simple outlines for reports and term papers. Use more detailed outlines for major writing tasks.
8. Do you streamline time by cutting out nonessentials? Eliminate work you do out of habit that doesn't serve any useful purpose. Ask yourself, "Is this really necessary?" For example, do you really need to copy all major terms and concepts from your textbook to your notebook and then retype all your notes? These might be habits that waste valuable study time. Try combining records. For instance, in your lecture notebook, leave every other page blank to use for related text reading notes, fill in gaps, or expand on important points.

Time is invaluable to the serious student and once wasted, never retrievable. Get the most from your study time. Thoughtfully plan and order your tasks. Reschedule indirect activities to eliminate wasted time.

• ***Gain exposure through work experience***

Medicine isn't for everyone, and for you to go through years of study to find yourself in a field that's really *not* for you is foolish. Many students make the mistake of devoting considerable time and effort getting into medical school without taking the time to learn what will be expected of them as a physician. Admissions committees are aware of the dilemma. It is important to demonstrate to them you have done your research, and your desire and devotion to become a physician is genuine.

You demonstrate your commitment in many ways. One excellent way is to work directly with patients and doctors in a hospital setting. Most hospitals have programs that encourage the use of volunteers in various medical departments.

Contact nearby hospitals to find out about volunteer programs. Explain that you are a premedical student interested in learning about the daily routine of a physician. As a volunteer, you might deliver samples to labs and do other routine chores to help the hospital staff. Use the time to note treatment procedures and doctor-patient relationships. You will see both good and indifferent treatments of patients and will begin to observe those qualities most desirable in a doctor. Your observations of how doctors work with patients may be the most valuable experience gained from volunteering.

Working in a hospital setting isn't the only way to learn about the medical profession. Students can work in mental institutions or community agencies. Working on a local welfare project also may be good experience. Although such settings aren't necessarily medically oriented, they do expose you to a variety of individuals and issues, and more important, test your willingness and ability to deal with people and their problems.

Teaching is an excellent way to learn how to deal effectively with others. Tutors for local elementary or secondary schools are generally highly appreciated and in demand. The work is rewarding and many school interviewers look upon this experience with high regard.

VI. Steps toward admission to medical school

• *Overview*

Allopathic and osteopathic medical schools primarily consider the following admission criteria: grade point average (GPA), Medical College Admission Test (MCAT) scores, letters of recommendation, personal statement, and interviews. This section explains much of what you should know about the application process and the steps to take to complete your application.

Step 1. Learn the application process. The medical school application process has many facets. Start early, plan your strategy, maintain your focus, and faithfully follow through with each step.

Step 2. Take the Medical College Admission Test (MCAT). The MCAT is offered twice a year—in April and September. Take the MCAT the year before the one for which you plan to apply.

Step 3. Gather letters of recommendation and write your personal statement. Have them ready in case schools respond early.

Step 4. Prepare the AMCAS[8] and/or AACOMAS application. You will use the American Medical College Application Service (AMCAS) application to apply to most U.S. schools of allopathic medicine. The American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS) application is for osteopathic medical schools. However, some schools do not use either procedure. Apply to them directly.

Step 5. Send your application as early as possible. AMCAS begins accepting applications in June, AACOMAS in August. Although most medical schools don't require the application until much later, an early application ensures that you meet the submission deadline and your application is among the first to be acted upon. After you submit your application(s) (including your personal statement), the schools respond, usually within 4-6 weeks. They will ask you for letters of recommendation at this time. Each school may also ask you to fill out additional forms and may request an additional fee.

Step 6. Promptly submit all requested items. Your application is incomplete until all materials are in. Then most schools will re-evaluate the application and decide whether to grant an interview. Your getting an interview indicates you are seriously being considered.

Step 7. Attend the interview.

After the interview, periodically check the status of your application. Schools notify you if you are accepted, rejected, or placed on a waiting list. Sounds easy, right? Things don't always run quite as smoothly, so each aspect of the application procedure is presented in more detail in the following sections.

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8 Med-MAR, pg. 30, Appendix.

• *The process: from start to finish*

• GPA—your grade point average

Grades aren't the whole ball game. Some in medical education even question the value of GPAs as admission criteria. There is a slight positive correlation between undergraduate GPA and medical school performance during the first two years, but there is little correlation to subsequent performance as a physician.

Today, a 3.0 or higher GPA from a reputable college is looked upon favorably, although other factors are considered, and conditions may change in the future. However, a student with a GPA less than 2.5 is at a distinct disadvantage when applying to medical school.

Do well in the sciences. Admissions committees evaluate science and overall GPAs separately for each year. Your science grades are more important than other grades or overall GPA. But take only as many science courses as you can handle. One A is better than five Cs, no matter what the science courses. If you don't do well early on, keep trying. Showing improvement can go in your favor. For example, 3.0 GPAs in your junior and senior years could offset lower GPAs of freshman and sophomore years.

Don't be discouraged from applying because you think you don't have a chance of acceptance. Myths passed around premedical circles could lead some students to believe that only someone with at least 3.6 GPA can get into medical school. Grades are important, but not the only criteria used by admission committees.

• MCAT—your Medical College Admissions Test

The second criterion for medical school admissions committees is your score on the Medical College Admissions Test (MCAT), a comprehensive science and associated skills examination. The MCAT is divided into: biology, chemistry, physics, science problems, reading skills, quantitative skills, and essay writing. Essay topics are designed to assess your ability to: develop a central idea; synthesize concepts and ideas; separate relevant from irrelevant information; develop alternative hypotheses; present ideas cohesively and logically; and write clearly, observing accepted practices of grammar, syntax, punctuation, and spelling, consistent with timed, first-draft composition.

Two important items to keep in mind for the MCAT are: timing and preparation. Deciding when to take the MCAT should be relatively simple: Take the test when you are prepared. That usually means completing most of your premedical requirements beforehand. For example, if you are a junior finishing your last premedical requirements, we strongly recommend you take the spring test, even if you haven't completed all prerequisites. This gives you the option to retake the MCAT in September if your scores are low, and you can still apply to medical school for the next year.

However, if you feel unprepared to take the April test, you could use the time to study and take the one in September. You will still be eligible to apply that year. However, be sure to send in your AMCAS or AACOMAS application before you take the MCAT.

Be as prepared as possible for the test. If you don't do as well as hoped the first time, don't be too concerned. Many students take the MCAT more than once to improve their scores. Many medical schools will look at your most recent or highest score, so it

probably won't hurt to take the test more than once. Many applicants with relatively low scores have been admitted to medical schools.

If your GPA is low and your MCAT scores are not competitive, you are at a disadvantage. Studying books such as Barron's "How to Prepare for the MCAT" and ARCO's MCAT study book can help you identify weak areas, so you can plan your studies accordingly. In addition, the Universities of California at Berkeley, San Diego, and Santa Cruz, and other large universities offer their own MCAT study courses through the Student Services Office, usually charging a moderate fee. Some offer scholarships to minority students. Contact schools about review courses and scholarship procedures.

Private firms also offer study courses but are often more expensive. Be sure to deal only with reputable companies that have an established reputation. Some companies award thousands of scholarships annually to help students offset the cost of the course.

The MCAT student manual includes exam information on the science and analytical skills sections of the test. It also contains practice test questions and a sample four-hour test. The manual costs about $10 plus shipping and handling. Address your publication order to:

Association of American Medical Colleges
Membership and Publication Orders
Suite 200
One Dupont Circle NW
Washington, DC 20036

• Your choice of schools

If an allopathic medical career is your goal, apply to all nine California allopathic medical schools. Applying to less than five may not be enough. (If you want to be an osteopathic physician, be sure to apply to the College of Osteopathic Medicine of the Pacific, the only school of osteopathy west of the Rockies. You may apply through both services.) Also apply to *at least* two out-of-state schools, but don't waste money applying to schools in states that rarely accept California students or don't provide adequate access to financial aid for out-of-state students. For any school, you should take a close look at the financial aid package offered before you choose.

Refer to information provided by the AAMC or AACOMAS for more information on specific schools. For instance, the first two years of curriculum in all medical schools are similar. However, you might want to consider whether you prefer a semester versus a quarter system, letter grade versus pass/fail, traditional subjects versus an organ system approach, or a clinical versus a research-oriented study program.

Another element to consider is the school's surrounding community. Do you prefer a small community to a large metropolitan area? Are housing and transportation readily available? Do you want to be near your family and friends? What recreational facilities are available? Satisfying your preferences may in the long run prove significant to your academic well-being. You should give careful thought to each.

• AMCAS and AACOMAS[9]

AMCAS (American Medical College Application Service) and AACOMAS (American Association of Colleges of Osteopathic Medicine Application Service) act as clearinghouses for processing applications to most medical schools in the US. Services do not make admissions decisions nor do they advise you where to apply. Each school participating in the AMCAS or AACOMAS process sets deadlines, determines requirements, and makes admission decisions.

AMCAS or AACOMAS processing occurs in three phases: submitting transcripts, filing the application, and verifying that the application is complete. The earliest AMCAS will accept information is June 15 of the year before the fall semester to which you are applying for acceptance. AACOMAS processing dates are August 1 – March 1.

Begin to fill out forms before your transcripts are sent. Plan to set aside 2-3 days to complete and edit a copy of the application. Compute your grades according to instructions. Your application will be returned if the computations are incorrect.

• Personal statement

Along with your standard information, the AMCAS and AACOMAS forms contain space for your personal statement. The personal statement is the only portion of the application where you may express something of your character. Take time to write a well-thought-out, meaningful statement.

To put your life down on paper is often difficult, but you can reflect, through well-chosen words, qualities not measured by grades or scores. Read what other successful minority applicants have written,[10] then let your personal statement reflect as much of you as possible. Include experiences and explain your motivation. Highlight special circumstances, but try not to duplicate information found in other sections of the form.

Read your draft and ask yourself: If I were on an admissions committee, would I want to speak with the person who wrote this statement? If the answer is no, then rewrite it. Be honest and consistent. Remember, committee members may ask you about your statement in your interview. Get someone with excellent writing skills (preferably a minority medical student or a person from a medical school minority affairs office who can offer feedback) to review your statement for grammatical errors before you send it.

• Supplementary applications

Each service compares your official transcripts to your application. Then, within 4-6 weeks, you receive a copy of your original application, a summary of your GPA and MCAT score(s), and a list of the schools to which the information is being sent. You can speed up your application process by making *sure* everything is in order. Recheck the application form and the schools list, and make sure nothing has been omitted or changed.

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9 Table 3, pg. 31, Appendix.

10 Students can get advice, copies of personal statements, and other information by contacting current medical school students on the minority medical school contact list published by the Health Professions Career Opportunity Program (see address & phone number, pg. 1).

Be selective in who you ask to recommend you. Even "nice guys" can and do write damaging letters. If you don't know a professor well, but have done excellent work, set an appointment. Discuss briefly your plans for entering medical school, why you need the letter, and when it needs to be sent.

• Fee waivers

The last thing you should have to worry about when applying to medical school is the inability to pay the application fee. Although the cost of applying can be expensive, there are ways to minimize the financial strain.

The application packet includes a form for applicants to request a fee waiver. The form is for those who would not be able to apply to medical school due to inability to pay the service fee. The form consists of a financial statement for parents and a financial aid officer certification, in which your present (or former) school's financial aid director certifies your need for the fee waiver.

As with all facets of the application process, your timing is important. Approval of the fee waiver may take 4-8 weeks, depending on how early you apply. Apply for the fee waiver soon after the opening date. The complete AMCAS or AACOMAS application cannot be processed and forwarded to the respective medical schools until the fee arrangement is made. However, if you can afford it, pay the application fee and avoid possible delays caused by the fee waiver process.

Once each medical school receives your application and all requested materials, initial screening determines whether more information is needed. Most schools will send a supplementary information request with a standard fee bill (usually $20-$50 depending on the school) for processing the information.

If you apply to many schools, fees may pose a serious financial problem. If you think you might have difficulties, prepare a statement for each school, indicating your interest in the school and your hardship in providing the supplementary fee. A letter from your financial aid director stating familiarity with your financial condition and your need for assistance may help. Many schools are open to waiving the supplementary information fee, provided the request has substance. Other schools, however, grant fee waivers only if AMCAS or AACOMAS has first done so.

• Letters of recommendation

Letters of recommendation are a significant part of the application process, focusing on your extracurricular activities and your academic work. Schools may specify from which concentration they should be sent (for example, from academic studies only, or from biological science, physical science, or social science).

A letter of recommendation or letter of reference is simply a letter indicating how a professor, advisor, or supervisor felt about you and the work or activities you performed. An ideal letter shows that the writer knows you and is impressed with you. A letter that merely restates your grade and class ranking suggests the writer has nothing more to say about you or doesn't really know you.

In large universities, getting to know your professors may be difficult. Teaching assistants (TAs) or other graduate students often answer student questions and assist students with their work. Many professors rely on TAs to supply information for letters of recommendation. Quiet competence is not always recognized, so try to become known.

Many professors are excellent letter writers and can make students they hardly know sound like Rhodes scholars. On the other hand, some professors, despite what you

have accomplished, dislike letter writing so much that their letters are worthless.

When deciding from whom to request letters of recommendation, don't overlook nonacademic sources. Your supervisor for hospital volunteer work or tutoring usually will be happy to write one. Your supervisor usually knows you well and is able to write a more personal and meaningful letter than many of your professors. Such a letter reemphasizes the extracurricular activities so important in the eyes of the committee.

Be selective in who you ask to recommend you. Even "nice guys" can and do write damaging letters. If you don't know a professor well, but have done excellent work, set an appointment. Discuss briefly your plans for entering medical school, why you need the letter, and when it needs to be sent. To help the professor in preparing the letter, write a one-page summary of your background, activities, and interests. Be sure to give your professors self-addressed stamped envelopes and all the proper forms to expedite the mailing of your recommendations. Remember, your application will not proceed until all your letters are received. As always, followup is important. Be persistent, patient, and polite, but be sure the letters are sent and received.

• The waiting game

Once you send in your application, your job is done; right? Wrong! Hopefully, some minority recruiters have already contacted you. If not, you contact them. Personal contact with minorities on the admission committees could ensure your application is viewed as representing a person, and is not just another file. If they know you, admissions committee members may push extra hard for you.

Periodically follow up on your application. Applications get lost. In following the status of your application, the telephone can become your best friend. A simple telephone call could save you much grief. Calling the admissions office of each school *every 2-3 weeks* should become routine. Don't be afraid to ask secretaries what is happening with your application.

• Interviews

The last stage of the application process is the personal interviews. Schools normally interview 10 percent to 35 percent of the applicants. Most schools will write to congratulate you on being selected. Often the invitation will specify the date and time. If you are able to be at the school at that time, confirm the appointment in writing. A few schools do not allow rescheduling, but the majority are fairly flexible so a mutually agreeable time can be arranged.

Before your interviews, it is a good idea to visit the medical schools you apply to. Call in advance and make appointments to meet staff, students, and faculty active in minority admissions. Take along a copy of your AMCAS or AACOMAS application or your transcripts. By visiting the schools and speaking with persons who can help you, you may find some friends who are active in admissions and who could advocate for you. By getting people to know you, they see you as a real person and not just another application.

While at the school, learn about the curriculum, workload, support services, financial aid, and other matters. You'll be in a more informed position to prioritize your choices among the various schools. If you get multiple acceptances, you can easily and quickly decide in which school to enroll.

Most schools have more than a single interview. On your interview date you may have as many as three interviews, each lasting 10 minutes to an hour. Personalities of interviewers are diverse. Put yourself in their place. Faculty are the principal interviewers, and many schools also use medical students. Many student interviewers are members of the admissions committee and have voting rights. Take them seriously.

If you are at ease and fairly spontaneous in conversation, your interviews should be enjoyable and a relief from the tedium of filling out applications. If you are not quite so spontaneous, a little preparation may be in order. Spend time role-playing to prepare for your interviews. Devise questions you would ask of aspiring candidates.

Appearance. Control the key parts of the interview. One consideration is your physical appearance. Your grooming and dress are individual and are the first things the interviewer will notice. Dress somewhat conservatively, but make sure you are comfortable in what you wear.

Content. Many interviewers follow a structured format, while others are open to whatever arises during conversation. The interviewer will usually guide you in the direction in which he or she is interested. Many times the conversation reaches a lull and then it may be appropriate for you to bring something up about yourself or to expand on something you think the committee should know. Control the conversation, show your self-confidence, but try not to seem overbearing or pompous.

Theme. Interviewers develop no single theme for discussion. You should be prepared for anything, from a very structured interview (questions being read from a sheet and you being "scored" on your answers) to a friendly conversation without apparent direction. However, some issues are typical of the interview.

• Interview questions

Be frank and sincere in your answers. People usually sense whether you are telling them what you think they want to hear or what you really think. Don't memorize. Instead, think about the problems as presented and consider alternative viewpoints. You may want to suggest several alternatives. Don't feel pressured to come up with the "correct" answer. The following questions are a sample of those that may be asked. Become familiar with them and consider your responses to each.

- *When and how did you become interested in medicine?*
- *Why would you make a good doctor?*
- *Where do you want to practice? What practice situation do you envision yourself in?*
- *What do you see as the most pressing problems in medicine today?*
- *What area of medicine do you plan to go into? Why?*

The more you practice, the more proficient and at ease you become at being interviewed. Try interviewing yourself aloud. Create your own interview questions. Ask family or friends to interview you so you become comfortable with the interviewer-interviewee setting. Be versatile. Maintain eye contact during the interview and keep your sense of humor. Smile! Look as if you are enjoying yourself.

• Questions for the schools

Some general questions you may be interested in asking are:

- *How has your school ranked recently on the National Boards?*
- *Are the medical school students chiefly from a single state or area?*
- *Do many of your school's graduates remain at your school for their residencies?*
- *Is the primary teaching hospital a county or privately owned hospital?*

These questions are standbys in case you forget other questions you prepared. Either way, ask sincere questions and pay attention to the answers. Look attentive and responsive.

Some medical schools, implicitly or explicitly, allow you to contact the admissions committee to arrange interviews. By all means do so. You can never be sure the school will pursue you as an applicant, and you may be able to arrange interviews that, if left up to the school, may never materialize.

You can also seek interviews at schools that have not encouraged you to contact them. In these cases, respect the power of secretaries. They can make or break your attempts to schedule interviews. They usually maintain the appointment books, and with some friendly encouragement may go to great lengths to arrange time schedules to accommodate you.

Often your interview appointments will be in other states, which means arranging a tour. Try to visit as many schools on one tour as your schedule and budget allow. If you live on the West Coast and receive two interview invitations on the East Coast, try to arrange both during the same week. Contact other schools in the area you think you can visit on one trip. Pursue interviews by letter and telephone until you have a satisfactory tour arranged.

• Prioritizing schools

Prioritize the schools to which you have applied. Prioritizing your choices forces you to become knowledgeable about each medical school's philosophy, curriculum, and other matters. Based upon your school visits, interviews, discussions with medical students and recruiters, reading books and periodicals, and considerations of geography, family, and finances, simply list the schools from most-to-least desirable.

If you have a preference for one school, communicate this to persons active in minority admissions at the school. If your first preference is divided between two, say so. Never tell several or all schools each is your first choice. You will probably be in a bad position if you do. Minority recruiters from different schools often compare notes.

Once you have prioritized, it will be much easier and quicker to deal with multiple acceptances. And you might be able to work your way to the top of your priority list to ultimately enroll at the school of first choice. If, for example, your fifth-rated school sends the first acceptance, you can take the offer and withdraw application from schools you have rated lower. If subsequently accepted at your third-rated school, you can withdraw acceptance from the fifth-rated school, and, if early enough, receive your deposit back. If, then, you are accepted to your first-rated school, you can withdraw your acceptance from the third-rated school.

- **Finally: acceptance!**

You usually have about two weeks to accept or reject an offer. Medical schools prefer written acceptance, but a phone call to the admissions office will protect you if your letter is lost in the mail. If you accept, a deposit of $50-$100 is usually required to hold your place in the class. If you are subsequently accepted at some other school you prefer, you can cancel at the previous school.

- **Final tips for success**

  - **The early application**

At some schools, a sixth major criterion seems to be the application arrival date. *It is important to apply early*. An early application gives you more follow-up time if professors are late with letters of recommendation or if your file is misrouted. You may request other people to send a transcript or letter, but it is ultimately you who must see that it is sent. Your career depends on it, no one else's.

Most schools start accepting applications in June or July. The first AMCAS or AACOMAS applications the school receives are the first to be screened for the follow-up request for secondary application material. Complete and return those materials as soon as you get them. If you are slow in sending your secondary materials (letters of recommendation, for example), your file may not advance; most schools will not interview you if your file is incomplete. A later applicant with a complete file could be interviewed before you.

• **Matrix**

Create a matrix to track your 5-15 applications through the various stages. Prepare one for the AMCAS or AACOMAS application and for each school to which you apply. The matrix warns you when to contact an admissions office to prevent or solve problems. It's a systematic approach to the application procedure. For instance, if a document does not reach a school or is otherwise lost, your matrix shows when the document was mailed and when it should have been received.

Sample Matrix
California Medical Schools

Schools	Mailed Appl-cation	Confirmed Receipt	Secondary Materials Received	Mailed Materials	Confirmed Receipt	Interview Date	Response Yes/No
School A	15 Jun	25 Jun	5 Jul	10 Jul	20 Jul	1 Oct	Y-15 Oct
School B	16 Jun	26 Jun	10 Jul	17 Jul	27 Jul	7 Oct	N-20 Oct
School C	2 Jul	12 Jul	22 Aug	23 Aug	5 Sep		
School D	15 Jul	25 Jul					

VII. Financing your medical education

As soon as possible, be sure to contact the financial aid office of the school that accepts you. The cost of attaining a medical education has increased markedly in the last decade. For the 1987 graduating class, the average indebtedness was $35,621. Today, the average debt is higher. Eighty-two percent of medical students require financial aid beyond what parents, spouses, and earnings provide. Loans are the primary source for financing a medical education.

Borrowing today means you will have to repay later. But many students forget that high payments can strain the ability to finance future education needs. Amounts obligated must be repaid on time as agreed.

If you must borrow, follow the guidelines in the following paragraphs to give you the two-fold benefit of setting limits on your level of indebtedness and successfully dealing with repayment after graduation.

Formulating a budget and living within its limits are essential. This means delaying gratification through purchase and lifestyle decisions while you are enrolled in school. It also means borrowing as little as you can and having more in the future. Effective methods of reducing debt and increasing future disposable earnings are: working (as long as academic standing is not jeopardized), limiting undergraduate borrowing, and aggressively seeking private sources of assistance.

To assist you in creating your individual budget, each medical school prepares a standard student budget guideline. By taking certain actions such as having roommates, sharing transportation, and preparing meals at home, you can live on less than the prepared budget.

Meeting financial aid deadlines is important for receiving sufficient and least-expensive funding while in school. Always maintain a personal calendar of due dates for applications, deferment forms, and tuition payments.

Good records are indispensable to your financial health. You may find it easier to rely on others, such as parents, the financial aid office, or the lender, to maintain your loan records. However, family situations change, the financial aid office is not required to preserve your records indefinitely, and the lender's records may be inaccurate. Maintaining precise records, including copies of application forms and signed promissory notes, helps you verify errors and possibly save money that may be inappropriately assigned. Further, lenders often sell their loan papers to other lenders. With poor records, you may be unaware of the sale and may inadvertently default because deferment forms or payments are forwarded to the wrong financial institution.

The responsibility for keeping in touch with the lender is yours, the borrower. Notify lenders of any change of address. Default is inevitable if the lender is unable to communicate with you or you do not provide deferment forms or make payments. Default also results in long-term negative effects on your credit rating.

Depending on the size of your total educational indebtedness, you could have up to 25 years to repay at an interest rate equal to the weighted average of the consolidated loans.

In addition, an administrative consolidation of loans can be made under the Health Education Assistance Loan (HEAL) Program. Thus, a borrower eventually may be able to write one check each month for loans under the federal consolidation program.

Under the recently enacted consolidation program for all federal student loans, lenders, student loan guarantee agencies, and the Student Loan Marketing Association (Sallie Mae) now have the authority to consolidate loans made under: Guaranteed Student Loan (GSL) Program (now called Stafford Loans), Supplemental Loans for Students (SLS) Program (previously PLUS/ALAS), Perkins Loan Program (formerly National Direct Student Loan Program), and Health Professions Student Loan (HPSL) Program.[11] Each institution has its own policies and procedures for distributing funds. Applicants must maintain close contact with the school financial aid office.

Another way to repay loans is through the federal Public Health Service Repayment Program. Graduates can do one year of government service for each year of financial aid until the loan is paid off. You can get more information from your prospective school's financial aid officer.

A calendar showing general deadlines and dates of procedures is included here to help you plan for financing a medical education.[12] Individual schools may deviate from the schedule in the table. Most medical schools award financial aid to students who demonstrate need. To do this, they usually use the services of one of the following national organizations:

ACT Student Assistance Program
PO Box 1000
Iowa City, IA 52240

College Scholarship Service (CSS)
Box 176
Princeton, NJ 08540

These organizations analyze your detailed family information and provide reports to designated medical schools or financial aid programs. Financial aid awards are made by the medical school or the financial aid program, not the national financial service organizations.

Listed in the Appendix are programs and societies that may aid you in securing medical education funds.[13] This list is by no means exhaustive. For more information on private organizations and agencies (such as medical societies, state programs, brotherhoods, sisterhoods, and church groups), explore college libraries, contact state departments of education, and review the material offered by medical school financial aid offices. Although the search for private assistance requires considerable effort, the prospect of meeting the cost of education and decreasing indebtedness makes the effort worthwhile.

Important financial aid dates for incoming students

Event	*Date*
Financial aid information sent to students	January - February
School-based aid applications sent to students	January - February
Needs analysis forms sent to students	January - March
Deadline for student submission of state scholarship applications	February - March
Deadline for student submission of needs analysis forms	March - May
Processing of applications to federal loan programs begins	March - June
Deadline for student submission of school-based aid forms	March - June
Notification to students of estimated award of school-based aid	April - August

Note: *This schedule is approximate. Contact individual schools for specific dates.*

11 Table 4, pg. 32, Appendix.
12 Table 5, pg. 32, Appendix.
13 Programs & societies, pg. 33, Appendix.

VIII. Non-Acceptance

Rejection is often not easy to handle, but don't view it as failure. It doesn't mean the end. For some, this will be the first major setback. However, rejection gives the applicant time to re-examine career goals and to practice constructive self-criticism. Use the experience to re-evaluate and work on your strengths and weaknesses to prepare yourself for later acceptance.

- ***What to do first***

1. If rejected, contact the school to determine why. Ask how you can improve. Use the information to strengthen your weaknesses. Ask your support group to help you, and talk with current medical students[14] who are willing to analyze your situation and give you guidance.
2. Don't let your emotions get the best of you. Rejection doesn't mean the end of your dreams. Look at it this way:

   - In 1980, 43,000 applicants submitted approximately 400,000 applications for 16,000 seats in 114 medical schools.
   - One-quarter of those accepted to medical school were reapplicants.
   - Forty percent of rejected applicants filed new applications.
   - One-third of all reapplicants were accepted. You also can be accepted.

Also you have friends. Don't forget who they are. Keep in touch with former professors. Let them know your progress in jobs and graduate work. You may someday need one of these support people to write you a stronger letter of recommendation.

- **Reapply**

1. Learn more about the application process.
2. Consider carefully the schools you may apply to. Do they have a good reputation for accepting minority applicants?
3. Type your application and make it neat and clean.
4. Write a well-thought-out, grammatically correct, personal statement. Each paragraph should be concise and organized to present the best possible impression of yourself.
5. Include in your personal statement past and present accomplishments as well as future ambitions.
6. If your MCAT score was too low, prepare to retake it. Focus all of your time for at least three months on studying for this exam—don't work, don't go to school...
7. Think of every way possible to improve your application. Ask your support team to review it and offer suggestions.

14 Op Cit., footnote 7, pg. 10.

Only you can say whether your desire to become a physician is worth additional effort. Decide to reapply for *you*. If you do decide that your commitment and desire are strong enough, consider the following alternatives:

• Alternative directions

- ***Undergraduate education:*** Continue your studies and take advanced-level courses. You may be able to improve your GPA by taking advanced science courses or other classes where you need improvement.
- ***Graduate school:*** Enroll, choosing a related field (physiology, for example) that can be applicable to medicine when you later apply to medical school.
- ***Work:*** Work in a health-related field that demonstrates your continuing interest in a health career. However, if you were rejected because of academic deficiencies, it would be better to remain in school and work on improving your academic record.
- ***Public health school:*** Pursue a degree in public health. Public health includes over a dozen specializations—each area well-suited for people with a variety of interests and skills. Many of the specialties train people for skills vitally needed in minority communities. The knowledge and skills acquired will serve you later as a medical student and physician.
- ***Postbaccalaureate and summer programs:*** Postbaccalaureate programs offer the underrepresented minority or disadvantaged student the opportunity to increase his or her chances for entry into medical, dental, or other health professional school. Such programs consist of intensive introductory courses in math and the basic sciences to improve knowledge in those areas and prepare the student for graduate work. One to two years in length, many programs are tailored to the needs of each student.[15]

  Summer enrichment programs help prepare minority applicants for entry to health professional schools and graduate programs. Participants receive a variety of academic and nonacademic support, counseling, and motivation. Concentrated review courses are offered in biology, chemistry, physics, mathematics, test-taking, and study and writing skills development. Many programs offer hands-on experience in clinical preceptorials and lab research. Developmental workshops, entrance requirements seminars, admission exams, financial aid, and support networks are part of what is offered.[16]

  Enroll in a program that demonstrates your ability to perform well in an intensive academic curriculum. These programs help you prepare for the MCAT. They usually comprise an intensive fundamental review of physics, chemistry, biology, and other areas related to the MCAT.

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15 Information on postbaccalaureate programs appears each fall in *Health Pathways*, newsletter of the Health Professions Career Opportunity Program (see address & phone number, pg. 1).

16 Information on summer enrichment programs also appears each fall in *Health Pathways* (see previous footnote).

IX. Summary

Applying to medical school is complicated but not difficult. If you are determined, and have a plan of action, you may even find it an enjoyable experience.

If you're reading this while in high school, you have a head start. Take college preparatory courses and volunteer to work in a health-related field. If you are in college, pay particular attention to course selection and begin to build your support group. Learn all you can about the application process and how to prepare your AMCAS or AACOMAS application. The more familiar you are with the medical school admissions process, the more aware you will be of opportunities and possible pitfalls.

Don't underestimate your talents and academic potential. The stereotype of physicians being superhuman with superior intelligence is a myth. Physicians are individuals like you who set career goals and take the appropriate steps to reach that goal. Build your support group, seek out information and guidance, develop good study habits, prioritize your activities, and be persistent.

You should not consider a lack of financial resources as a medical school obstacle. Financial aid is available for minority students committed to studying medicine. If you have the dedication and are willing to work hard, the funding is available.

You are needed. Many more minority physicians are needed to serve growing underserved minority communities. As a physician serving a minority community, you can recognize and understand critical health problems afflicting these communities. As a *minority physician* you also are able to serve as a role model and a glimmer of hope to the countless individuals who seek your guidance and help.

Appendix

Table 1
Proportion and physician-population ratios of California primary care physicians representing selected ethnic groups compared to proportions of ethnic groups in the general state population

Ethnic group	a % of population	b % of physicians	c Primary care physician: community ratio
Spanish surname origin	16.4	1.1	1:21,245
African-American	7.6	2.2	1:4,027
Native American	0.6	0.1	1:7,539
Other, including Asian	3.3	5.5	
Anglo	72.1	91.1	1:990
Median			1:1,301

Sources: a—California State Department of Finance
b—California State Department of Consumer Affairs, California Medical Board
c—California Office of Statewide Health Planning and Development, Health Manpower Policy Commission

Table 2
Primary care physician to population ratios, contiguous areas in Los Angeles County, 1976 (Barrios and ghettos in the US have extreme shortages of health professionals)

Area	Population	Primary care physician-population Ethnicity	Ratio
LA County	6,951,000		1:1,075
Van Nuys-Beverly Hills			
Bel Air-Santa Monica	330,000	Anglo	1:458
East Los Angeles			
El Monte-Pico Rivera	750,000	Chicano	1:3,700
West Adams-Exhibition Park			
Watts	560,000	African-American	1:3,131

Source: California Office of Statewide Health Planning and Development, Health Manpower Policy Commission

Information sources

Students may find the following articles, books, newsletters, and brochures helpful in planning their medical careers:

1. **A Handbook for Minority Pre-Med Students.** American Medical Student Association. Revision in progress. Call (703) 620-6600 for price. (American Medical Student Association, 1890 Preston White Dr., Reston, VA 22091)
2. **Bureau of Indian Affairs Higher Education Grant Program.** Free. (Bureau of Indian Affairs, Postsecondary Education, 18th and C Streets, NW, Washington, DC 20204)
3. **Career Choices: Health Professions Opportunities for Minorities.** Free. (Office of Statewide Health Planning and Development, HPCOP, 1600 Ninth St., Rm. 441, Sacramento, CA 95814)
4. **Financial Aid for Minorities in Health Fields.** 1987. Small charge. ISBN 0-912048-53-0. (Garrett Park Press, PO Box 190, Garrett Park, MD 20896)
5. **Financial Advice for Minority Students Seeking an Education in the Health Professions.** Free. (Office of Statewide Health Planning and Development, HPCOP, 1600 Ninth St., Rm. 441, Sacramento, CA 95814)
6. ***Health Pathways.*** Newsletter. Free. (Office of Statewide Health Planning and Development, HPCOP, 1600 Ninth St., Rm. 441, Sacramento, CA 95814)
7. **Minorities and Women in the Health Fields.** Department of Health and Human Services. 1984. Moderate cost. Stock #017-022-00856-4. (US Government Printing Office, Washington, DC 20402)
8. **Minority Student Opportunities in United States Medical Schools, 1990-91.** Eleventh edition. Association of American Medical Colleges. 1988. Moderate cost plus postage and handling. (Membership and Publication Orders, Association of American Medical Colleges, Ste. 200, One Dupont Circle, NW, Washington, DC 20036)
9. **Osteopathic Medical Education: A Handbook for Minority Applicants.** Office of Special Opportunities, American Association of Colleges of Osteopathic Medicine. July 1988. (American Association of Colleges of Osteopathic Medicine, 6110 Executive Blvd., Ste. 405, Rockville, MD 20852)
10. **Osteopathic Medical Education** (brochure)**:** American Association of Colleges of Osteopathic Medicine. (American Association of Colleges of Osteopathic Medicine, 6110 Executive Blvd., Ste. 405, Rockville, MD 20852)

Med-MAR

One of the Association of American Medical Colleges (AAMC) services is the Medical Minority Applicant Registry (Med-MAR). This program provides the opportunity for you to circulate basic biographical information automatically, at no cost, to all US medical school admissions offices, as well as other health services organizations and institutions that request the Med-MAR lists. When you take the MCAT, you are invited to participate in Med-MAR by identifying yourself on a questionnaire as belonging to an underrepresented minority group. Two Med-MAR lists are published annually (usually in July and November) and are circulated to all US medical schools. Upon receipt of

Med-MAR lists, interested medical schools correspond with you directly and request detailed information. For more information about matters related to minority students, write to:

Minority Student Information Clearinghouse
Association of American Medical Colleges
Suite 200
One Dupont Circle NW
Washington, DC 20036

Table 3
Minority applicants, admissions, matriculants for academic year 1988-89

	Applicants				Acceptants				Matriculants			
	1	2	3	4	1	2	3	4	1	2	3	4
University of California, Davis, *School of Medicine*	152	18	136	12	14	6	35	4	3	4	16	3
University of California, Irvine, *School of Medicine*	170	18	152	18	19	1	34	2	5	1	12	1
University of California, Los Angeles, *School of Medicine*	237	26	155	20	22	2	20	1	10	0	8	1
University of San Diego, *School of Medicine*	181	26	167	16	22	2	26	2	10	0	10	0
University of California, San Francisco, *School of Medicine*	230	28	137	26	25	5	18	2	15	3	13	1
Loma Linda University *School of Medicine*	108	6	58	6	9	0	0	0	4	0	0	0
University of Southern California *School of Medicine*	140	19	133	14	25	2	26	3	9	0	5	0
Stanford University *School of Medicine*	260	29	132	26	18	3	14	7	8	3	7	3
School of Osteopathic Medicine	386	7	116	13	24	1	12	4	16	0	3	2

1 – African-Americans 2 – American Indians
3 – Mexican-American/Chicanos 4 – Mainland Puerto Ricans

Source: AAMC – Student & Application Management System (SAIMS)

Table 4
Federal loan programs for students, 1991

	Programs*				
Characteristic	**HPSL**	**Perkins** (formerly NDSL)	**SSL** (now Stafford Loans)	**HEAL**	**SLS** (previously (PLUS/ALAS)
Lender	Medical school financial aid office	Medical school financial aid office	Bank, state guarantee agency	Bank, state guarantee agency	Bank, state guarantee agency
Borrowing limits	Tuition plus—general funds usually too limited for awards this size	$18,000 aggregate undergraduate and graduate	$7,500/year; $54,750 aggregate	$20,000/year $80,000 aggregate	$4,000/year $20,000 aggregate
Interest rates	5%	5%	8% or same as other GSL student has received, if any	Variable, based on 91-day Treasury bill plus 3%	Based on 52-week Treasury bill plus 3.25% rate capped at 12%
Interest accrues during:					
school;	No	No	No	Yes	Yes
deferment;	No	No	No	Yes	Yes
grace period	No	No	No	Yes	Yes
Grace period	1 year after graduation	6 months after graduation	6 months after graduation if rate is 8-9%; 9 months if rate is 7%	None	6 months after graduation
Repayment requirements	Min. $45/quarter including int.; max. of 10 yrs. to repay. Eligible for consolidation	Min. $90/quarter including interest; max. of 10 yrs. to repay. Eligible for consolidation	Min. $50/month, max. of 10 yrs. to repay. Eligible for consolidation	Min. amount of interest accrued each year; max. of 10-25 years to repay	Min. $50/month; max. of 10 yrs. to repay. Eligible for consolidation

* HPSL = Health Professions Student Loan; Perkins = Perkins Loan (formerly National Direct Student Loan); GSL = Guaranteed Student Loan (now Stafford Loan); HEAL = Health Education Assistance Loan; SLS = Supplemental Loans for Students. All programs are need-based. Citizen requirements are that student be US citizen, national, or permanent resident. There are no prepayment penalties for any of the programs. Allowable cancellations are: Death or total disability. Deferments are allowed for internships, residencies, and others. For specifics on deferments, please contact the financial aid officer at your prospective school.

Table 5
Tuition, 1991

	Deposit	Start	Resident *tuition*	Nonresident *tuition*
University of California, Davis *School of Medicine*	None	September	$3,500	$8,888
University of California, Irvine *School of Medicine*	None	September	$2,500	$8,000
University of California, Los Angeles *School of Medicine*	None	August	$2,800	$7,800
University of California, San Diego *School of Medicine*	None	September	$2,076	$7,992
University of California, San Francisco *School of Medicine*	$50	September	$2,193	$6,999
Loma Linda University *School of Medicine*	$100, due with acceptance	August	$16,000	$16,000
University of Southern California *School of Medicine*	None	August	$20,171	$20,171
Stanford University *School of Medicine*	None	September	$18,000	$18,000
School of Osteopathic Medicine	$250, due with acceptance	August	$14,925	$14,925

Programs and societies that may assist in securing financial aid

1. **National Medical Fellowship, Inc.**
   For students from minority groups underrepresented in the medical profession. Applicants must be admitted as first-year students or expected to be second-year students. Generally, 40-60 percent of the grants are awarded to minority students. First-year students must apply before March 1. Applications may be obtained from:

   National Medical Fellowship, Inc.
   250 West 57th St.
   New York, NY 10019

2. **National Health Service Corps (NHSC)**
   For medical students enrolled in accredited US school of medicine or school of osteopathy. Student receives a monthly stipend for 12 months to cover living expenses. Student accepting an NHSC award will be obligated to one year of service in a medically underserved area for each year of NHSC-funded academic training. For information write to:

   National Health Service Corps Scholarship Program
   3700 E. West Hwy.
   Room 5-50
   Hyattsville, MD 20782

3. **Joseph Collins Foundation**
   Students with financial need, good scholastic standing, and intention of specializing in general practice, neurology, and/or psychiatry may qualify. You can obtain application forms at the medical school or from:

   Joseph Collins Foundation
   One Chase Mountain Plaza
   New York, NY 10005

4. **Medical Education Loan Guarantee Program**
   Sponsored by the American Medical Association. Designed to cover essential living expenses for medical students who have completed the first term in good standing. Repayable in monthly installments over a 10-year period.

5. **Medical Student Opportunity Loan Guarantee Program**
   Designed for disadvantaged students who receive grant or scholarship from medical school or National Medical Fellowship during the first or second year. The AMA subsidizes interest on loans up to approximately $1,500 during first two years, and

$4,500 for junior and senior years. For more information about AMA loan programs write to:

American Medical Association
Education and Research Foundation
535 North Dearborn Ave.
Chicago, IL 60610

6. **American Medical Women's Association**
For female students in accredited US medical school. For information write to:

American Medical Women's Association, Inc.
1740 Broadway
New York, NY 10019

7. **Hispanic Women's Council Scholarship Program**
For women of Hispanic descent who wish to pursue undergraduate or graduate education. Applicants must be at least 25 years of age and live in Los Angeles County. The amount awarded varies and is renewable after one year. For information write to:

Hispanic Women's Council Scholarship Program
5803 East Beverly Blvd.
Los Angeles, CA 90022

8. **Minority Health Professions Education Foundation**
Scholarships or loan repayment assistance for minority students who come from Medically Underserved Areas (MUAs) and who are likely to return there. For students seeking careers in medicine, osteopathy, dentistry, or nursing.

Minority Health Professions Education Foundation
1130 K St., Ste. 150
Sacramento, CA 95814
(916) 327-5064

9. **Indian Fellowship Program**
Fellowships are available for postbaccalaureate degrees in: psychology, medicine, law, education, and related fields; or undergraduate or graduate degree in engineering, business administration, natural resources, and related fields. Amount of fellowship is based on financial need. Applicant must provide proof of American Indian certification and prove admission as a full-time student at an accredited institution of higher education.